

A GRAMMAR OF MODERN INDO-EUROPEAN

Second Edition

Language and Culture

Writing System and Phonology

Morphology

Syntax

Texts and Dictionary

Etymology



DNGHU

Carlos Quiles

with **Fernando López-Menchero**

Version 4.15 (10/2009)

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With contributions by Fernando López-Menchero Díez, M.Phil. in IE studies © 2007-2009.

Printed in the European Union.

Published by the *Indo-European Language Association*.

Edition Managed by *Imcrea Diseño Editorial*® at <<http://www.imcrea.com/>>.

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PREFACE

This second edition of *A Grammar of Modern Indo-European* is a renewed effort to systematize the reconstructed phonology and morphology of Europe's Indo-European.

Modern Indo-European is common to most Europeans, and not only to some of them, as Latin, Germanic, or Slavic. Unlike *Lingua Ignota*, *Solresol*, *Volapük*, *Esperanto*, *Quenya*, *Klingon*, *Lojban* and the thousand invented languages which are imagined by individuals daily, PIE dialects are natural, i.e. they evolved from an older language – Proto-Indo-European, of which we have extensive knowledge –, and were spoken by prehistoric communities at some time roughly between 2500 and 2000 BC, having themselves evolved into different dialects already by 2000 BC.

Proto-Indo-European and its dialects have been reconstructed in the past two centuries (more or less successfully) by hundreds of linguists, having obtained a rough phonological, morphological, and syntactical system, equivalent to what Jews had of Old Hebrew before reconstructing a system for its modern use in Israel. Instead of some inscriptions and oral transmitted tales for the language to be revived, we have a complete reconstructed grammatical system, as well as hundreds of living languages to be used as examples to revive a common Modern Indo-European.

Some known philologists, university professors, experts in Classical Languages, still consider the Proto-Indo-European language reconstruction an “*invention*”; also, Spanish Indo-Europeanist Bernabé, a brilliant Spanish IE professor, has left its work on IE studies to dedicate himself to “*something more serious*”. Francisco Villar, professor of Greek and Latin at the University of Salamanca, deems a complete reconstruction of PIE “*impossible*”; his opinion is not rare, since he supports the glottalic theory and the Armenian Homeland hypothesis (against the view of the majority), and supports the use of Latin instead of English within the EU. The work of Elst, Talageri and others defending the ‘Indigenous Indo-Aryan’ viewpoint by N. Kazanas, and their support of an unreconstructible and hypothetical PIE nearest to Vedic Sanskrit opens still more the gap between the mainstream reconstruction and minority views supported by political or personal opinions. Also, among convinced Indo-Europeanists, there seems to be no possible consensus between the different ‘schools’ as to whether Common PIE

distinguished between *ǫ* and *ǣ* (as Gk., Lat. or Cel.) or if those vowels were all initial *ǣ*, as in the other attested dialects (Villar), or if the Preterites were only one tense (as Latin *praeteritum*) with different formations, or if there were actually an Aorist and a Perfect.

Furthermore, José Antonio Pascual, a member of the Royal Spanish Academy (RAE), considers that “*it is not necessary to be a great sociologist to know that 500 million people won’t agree to adopt Modern Indo-European in the EU*” (Spa. journal *El Mundo*, 8th April 2007). Of course not, as they won’t agree on any possible question – not even on using English, which we use in fact –, and still the national and EU’s Institutions keep working, adopting decisions by majorities, not awaiting consensus for any question. And it was probably not necessary to be a great sociologist a hundred years ago to see e.g. that the revival of Hebrew under a modern language system was a utopia (an “*impossible*”, “*unserious*” “*invention*” then), and that Esperanto, the ‘easy’ and ‘neutral’ IAL, was going to succeed by their first so-called ‘World Congress’ in 1905. Such learned opinions are only that, opinions, just as if Hebrew and Semitic experts had been questioned a hundred years ago about a possible revival of Biblical Hebrew in a hypothetical new Land of Israel.

Whether MIE’s success is more or less probable and why is not really important for our current work, but hypotheses dealt with by sociology, anthropology, political science, economics, psychology, etc. or usually just by personal opinions with no strict rational and reasonable basis. It remains unclear whether the project will be accepted by the different existing social movements, such as Pan-Latinism, Pan-Americanism, Pan-Sanskritism, Pan-Arabism, Pan-Iranism, Pan-Slavism, Pan-Hispanism, *Francophonie*, Anglospherism, Atlanticism, and the hundred different pan-nationalist ideas, as well as the different groups supporting anti-globalization, anti-capitalism, anti-communism, etc.

What we do know now is that the idea of reviving Europe’s Indo-European as a modern language for Europe and international organizations is rational, that it is not something new, that it doesn’t mean a revolution – as the use of Spanglish, Syndarin or Interlingua – nor an involution – as regionalism, nationalism, or the come back to French, German or Latin predominance –, but merely one of the many different ways in which the European Union linguistic policy could evolve, and maybe one way to unite different peoples from different cultures, languages and religions (from the Americas to East Asia) for the sake of stable means of communication. Just that tiny possibility is enough for us

to “lose” some years trying to give our best making the main Proto-Indo-European dialects as usable and as known as possible.

PREFACE TO THE FIRST EDITION

According to Dutch sociologist Abram de Swaan, every language in the world fits into one of four categories according to the ways it enters into (what he calls) the *global language system*.

- *Central*: About a hundred languages in the world belong here, widely used and comprising about 95% of humankind.
- *Supercentral*: Each of these serves to connect speakers of central languages. There are only twelve *supercentral* languages, and they are Arabic, Chinese, English, French, German, Hindi, Japanese, Malay, Portuguese, Russian, Spanish and Swahili.
- *Hypercentral*: The lone *hypercentral* language at present is English. It not only connects central languages (which is why it is on the previous level) but serves to connect supercentral languages as well. Both Spanish and Russian are supercentral languages used by speakers of many languages, but when a Spaniard and a Russian want to communicate, they will usually do it in English.
- *Peripheral*: All the thousands of other languages on the globe occupy a peripheral position because they are hardly or not at all used to connect any other languages. In other words, they are mostly not perceived as useful in a multilingual situation and therefore not worth anyone’s effort to learn.

De Swaan points out that the admission of new member states to the European Union brings with it the addition of more languages, making the polyglot identity of the EU ever more unwieldy and expensive. On the other hand, it is clearly politically impossible to settle on a single language for all the EU’s institutions. It has proved easier for the EU to agree on a common currency than a common language.

Of the EU’s current languages, at least 14 are what we might call a ‘robust’ language, whose speakers are hardly likely to surrender its rights. Five of them (English, French, German, Portuguese and Spanish) are supercentral languages that are already widely used in international communication, and the rest are all central.

In the ongoing activity of the EU's institutions, there are inevitably shortcuts taken - English, French and German are widely used as 'working languages' for informal discussions. But at the formal level all the EU's official languages (i.e. the language of each member state) are declared equal.

Using all these languages is very expensive and highly inefficient. There are now 23 official languages: Bulgarian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Irish Gaelic, Italian, Latvian, Lithuanian, Maltese, Polish, Portuguese, Romanian, Slovak, Slovene, Spanish and Swedish, and three *semiofficial* (?): Catalan, Basque and Galician. This means that all official documents must be translated into all the members' recognized languages, and representatives of each member state have a right to expect a speech in their language to be interpreted. And each member state has the right to hear ongoing proceedings interpreted into its own language.

Since each of the twenty one languages needs to be interpreted/translated into all the rest of the twenty, 23×22 (minus one, because a language doesn't need to be translated into itself) comes to a total of 506 combinations (not taking on account the '*semiofficial*' languages). So interpreters/translators have to be found for ALL combinations.

In the old Common Market days the costs of using the official languages Dutch, English, French, and German could be borne, and interpreters and translators could be readily found. But as each new member is admitted, the costs and practical difficulties are rapidly becoming intolerably burdensome.

The crucial point here is that each time a new language is added, the total number of combinations isn't additive but multiplies: 506 + one language is not 507 but 552, i.e. 24×23 , since every language has to be translated/interpreted into all the others (except itself).

It is not hard to see that the celebration of linguistic diversity in the EU only lightly disguises the logistical nightmare that is developing. The EU is now preparing for more languages to come: Icelandic and Norwegian might be added in the future, with the incorporation of these two countries to the EU, as well as Albanian, Macedonian, Serbian, Bosnian and Croatian (the three formerly known as Serbo-Croatian, but further differentiated after the Yugoslavian wars) if they are admitted to the EU as expected; and many other regional languages, following the example of Irish Gaelic, and the three *semi-official* Spanish languages: Alsatian, Breton, Corsican, Welsh, Luxemburgish and Sami

are likely candidates to follow, as well as Scottish Gaelic, Occitan, Low Saxon, Venetian, Piedmontese, Ligurian, Emilian, Sardinian, Neapolitan, Sicilian, Asturian, Aragonese, Frisian, Kashubian, Romany, Rusin, and many others, depending on the political pressure their speakers and cultural communities can put on EU institutions. It will probably not be long before Turkish, and with it Kurdish (and possibly Armenian, Aramaic and Georgian), or maybe Ukrainian, Russian and Belarusian, are other official languages, not to talk about the *eternal candidates'* languages, Norwegian (in at least two of its language systems, *Bokmål* and *Nynorsk*), Icelandic, Romansh, Monegasque (Monaco) and Emilian-Romagnolo (San Marino), and this could bring the number of EU languages over 40. The number of possible combinations are at best above 1000, which doesn't seem within the reach of any organization, no matter how well-meaning.

Many EU administrators feel that to a great extent this diversity can be canceled out by ever-increasing reliance on the computer translation that is already in heavy use. It is certainly true that if we couldn't count on computers to do a lot of the translation 'heavy lifting', even the most idealistic administrator would never even dream of saddling an organization with an enterprise that would quickly absorb a major part of its finances and energy. But no machine has yet been invented *or probably ever will be* that is able to produce a translation without, at the very least, a final editing by a human translator or interpreter.

The rapidly increasing profusion of languages in the EU is quickly becoming intolerably clumsy and prohibitively expensive. And this doesn't even count the additional expense caused by printing in the Greek alphabet and soon in the Cyrillic (Bulgarian and Serbian). Everyone agrees that all languages must have their 'place in the sun' and their diversity celebrated. But common sense suggests that the EU is going to be forced to settle on a very small number of working languages, perhaps only one, and the linguistic future of the EU has become the subject of intense debate.

Only in public numbers, the EU official translation/interpretation costs amount to more than 1230 M€, and it comes to more than 13% of today's administrative expenditure of the EU institutions. There are also indirect costs of linguistic programmes aimed at promoting the learning of three or more languages since the *Year of Languages* (2001), which also means hundreds of millions of Euros, which haven't been counted in

the EU's budget as linguistic expenditure, but are usually included in budget sections such as Cohesion or Citizenship. It is hard to imagine the huge amount of money (real or potential) lost by EU citizens and companies each day because of communication problems, not only because they *can't* speak a third party's language, but because they *won't* speak it, even if they can.

Preserving the strict equality is the EU's lifeblood, and it is a very disturbing thought that the strongest candidate for a *one-language EU* is the one with an established dominance in the world, English, which is actually only spoken by a minority within Europe. Latin and Artificial languages (as Esperanto, Ido or Interlingua) have been proposed as alternatives, but neither the first, because it is only related to romance languages, nor the second, because they are (too) artificial (invented by one person or a small group at best), solve the linguistic theoretical problems, not to talk about the practical ones.

The Indo-European language that we present in this work, on the contrary, faces not only the addressed theoretical problems - mainly related to cultural heritage and sociopolitical proud - but brings also a practical solution for the European Union, without which there can be no real integration. European nations are not prepared to give up some of their powers to a greater political entity, unless they don't have to give up some fundamental rights. Among them, the linguistic ones have proven harder to deal with than it initially expected, as they are raise very strong national or regional feelings.

Indo-European is already the grandmother of the majority of Europeans. The first language of more than 97% of EU citizens is Indo-European, and the rest can generally speak at least one of them as second language. Adopting Indo-European as the main official language for the EU will not mean giving up linguistic rights, but enhancing them, as every other official language will have then the same status under their common ancestor; it won't mean losing the own culture for the sake of unity, but recovering it altogether for the same purpose; and, above all, it will not mean choosing a *lingua franca* to communicate with foreigners within an international organization, but accepting a National Language to communicate with other nationals within the same country.

NOTE. The above information is mainly copied (literally, adjusted or modified) from two of Mr. William Z. Shetter *Language Miniatures*, which he published in his (now dead) website.

WHAT'S NEW IN THIS EDITION

This is *A Grammar of Modern Indo-European, Second Edition*, with Modern Indo-European Language Grammar in *Version 4*, still adjusting some important linguistic questions, and lots of minor mistakes, thanks to the contributions of experts and readers.

NOTE. A version number (N) is given to full revisions of the grammar, and each minor correction published must be given a different number to be later identified, usually ranging from N.01 to N.99. This book includes a full correction of version 3, following Pre-Version 4, which means the correction was finished, and it is therefore 4.xx.

“*Europe’s Indo-European*” version 4 continues “*Modern Indo-European*” version 3 (first printed edition, since June 2007), and this in turn version 2, which began in March 2007, changing most features of the old “*Europaio*”/“*Sindhueuropaion*” concept of version 1 (*Europaio: A Brief Grammar of the European Language*, 2005-2006).

1. Apart from the unified “*Modern Indo-European*”, based on Europe’s Indo-European (also *residual* or North-Western Indo-European, or *Proto-European*), this grammar makes reference to other coeval PIE early dialects, especially Proto-Greek, Proto-Indo-Iranian (or *Proto-Aryan*) and Common Anatolian.

2. One of the main changes of this version is the adoption of a writing system with a clear phonological distinction between **i**, **u** and their semivocalic allophones **j**, **w**. The artificial distinction of **i/j** and **u/w** in PIE roots and derivatives, hold in versions 1-3, was untenable in the long term, as it was a labile decision, open to future changes. With the traditional written differentiation we get a greater degree of stability.

3. Emphasis is on the old Latin-only alphabet, but attention is paid to Greek and Cyrillic writing systems. Stubs of possible Armenian, Arabo-Persian and Devanagari (Abugida) systems are also included. The objective is not to define them completely (as with the Latin alphabet), but merely to show other possible writing systems for Modern Indo-European, Modern Aryan, and Modern Hellenic languages.

4. The traditional distinction in writings of the controversial *palatovelar* phonemes has been extensively discussed and rejected. Whether *satemization* appeared already as a dialectal phonological trend in Late PIE, or were just similar individual dialectal innovations restricted to some phonetic environments (**k-** before some sounds, as with

Latin *c-* before *-e* and *-i*), is not important. Reasons for not including the *palatovelars* in MIE writing system are 1) that, although possible, their existence is not sufficiently proven (see Appendix II.2); 2) that their writing because of tradition or even ‘etymology’ is not justified, as this would mean a projective writing (i.e., like writing Lat. *casa*, but Lat. *ĉentum*, because the *k*-sound before *-e* and *-i* evolves differently in Romance).

5. The historically alternating *Oblique* cases *Dative*, *Locative*, *Instrumental* and *Ablative*, are shown on a declension-by-declension (and even pronoun-by-pronoun) basis, as Late PIE shows in some declensions a simpler reconstructible paradigm (for some more archaic, for others an innovation) while others show almost the same Late PIE pattern of four differentiated oblique case-endings. The 8 cases traditionally reconstructed are used – and its differentiation recommended – in MIE.

5. The so-called Augment in *é-*, attested almost only in Greek, Indo-Iranian and Armenian, is sometimes left due to tradition of Indo-European studies, although recent research has shown that it was neither obligatory, nor general in the earliest PIE dialects. It is believed today that it was just a prefix that had a great success in the southern dialects, just like *per-* (<PIE **per-**) in Latin, or *ga-* (<PIE **ko-**) in Germanic.

6. The syntactical framework of Late PIE has been dealt with extensively by some authors, but, as the material hasn’t still been summed up and corrected within *mainstream* Indo-European linguistics – Indo-Europeanists usually prefer the phonological or morphological reconstruction –, we use literal paragraphs from possibly the most thorough work available on PIE syntax, Winfred P. Lehmann’s Proto-Indo-European Syntax (1974), adding comments and corrections made since its publication by other scholars

7. The whole section on Morphosyntax is taken from Michael Meier-Brügger’s Indo-European Linguistics (2003).

8. Appendices I and III were written by Fernando López-Menchero and published 2007-2009. The rest of this book has been written thanks to his countless corrections and additions in those years.

ACKNOWLEDGEMENTS

To Mayte, my best friend, for her support and encouragement before I worked on this project, even before she knew what was it all about. For the money and time spent in lunchtimes, books, websites, servers and material. For her excitement when talking about the changes that Proto-Indo-European revival could bring to the world's future. Thank you.

To Fernando López-Menchero, Civil Engineer and Classic Languages' Philologist, expert in Indo-European linguistics, for his invaluable help, revisions, corrections and innumerable contributions. Without his unending knowledge, this grammar wouldn't have shown a correct Proto-Indo-European reconstruction.

To Neil (UK), Michael (PL) Olivier (FR), Louis (FR), Alberto (IT), Diego (ES), Michal (SK); to *Mithridates* (CA), Simona (SL), Ófeigur (IS), Manuel (ES); and to all other members and friends of the Dnghu Association, for their collaboration, contribution, and promotion of the grammar and revival project.

To Prof. Dr. Luis Fernando de la Macorra, expert in Interregional Economics, and Prof. Dr. Antonio Muñoz, Vice-Dean of Academic Affairs in the Faculty of Library Science, for their support in the University Competition and afterwards.

To the University of Extremadura and the Cabinet of Young Initiative, for their prize in the Entrepreneurial Competition in Imagination Society (2006).

To the Department of Classical Antiquity of the UEx, for their unconditional support to the project.

To the Regional Government of Extremadura and its public institutions, for their open support to the Proto-Indo-European language revival.

To Manuel Romero from *Imcrea.com Diseño Editorial*, for his help with the design and editorial management of the first printed edition.

CONVENTIONS USED IN THIS BOOK

1. *Modern Indo-European* (MIE), **Eurōpājóm** or *European* are used only to refer to the *European language*, i.e. to the modern language system based on the reconstructed *North-West* or *Europe's* Indo-European (EIE), also *Old European* proto-language.

2. The roots of the reconstructed PIE language are basic morphemes carrying a lexical meaning. By addition of suffixes, they form stems, and by addition of desinences, these form grammatically inflected words (nouns or verbs).

NOTE. PIE reconstructed roots are subject to *ablaut*, and except for a very few cases, such ultimate roots are fully characterized by its constituent consonants, while the vowel may alternate. PIE roots as a rule have a single syllabic core, and by ablaut may either be monosyllabic or unsyllabic. PIE roots may be of the following form (where K is a voiceless stop, G an unaspirated and G^h an aspirated stop, R a semivowel (**ṛ**, **ḷ**, **m̥**, **n̥**, **w**, **j**) and H a laryngeal (or *s*). According to Meillet, impossible PIE combinations are voiceless/aspirated (as in **teub^h* or **b^heut*), as well as voiced/voiceless (as in **ged* or **deg*). The following table depicts the general opinion:

<i>stops</i>	-	K-	G-	G ^h -
-	[HR]e[RH]	K[R]e[RH]	G[R]e[RH]	G ^h [R]e[RH]
-K	[HR]e[RH]K	-	G[R]e[RH]K	G ^h [R]e[RH]K
-G	[HR]e[RH]G	K[R]e[RH]G	-	G ^h [R]e[RH]G
-G ^h	[HR]e[RH]G ^h	K[R]e[RH]G ^h	G[R]e[RH]G ^h	G ^h [R]e[RH]G ^h *

*This combination appears e.g. in **b^heut^h**-, *awake*, and **b^heid^h**-, *obey*, *believe*.

A root has at least one consonant, for some at least two (e.g. PIH **h₁ek*- vs. EIE **ek**-, “*quick*”, which is the root for MIE adj. **ōkús**). Depending on the interpretation of laryngeals, some roots seem to have an inherent vowel **a** or **o**; as, EIE **ar**- (vs. PIH **h₂ar*-), *fit*, EIE **ongw**- (vs. PIH **h₃engw*-) “*anoint*”, EIE **ak**- (vs. PIH **h₂ek*-) “*keen*”.

By “root extension”, a basic CeC (with C being any consonant) pattern may be extended to CeC-C, and an s-mobile may extend it to s-CeC.

The total number of consonant, sonant and laryngeal elements that appear in an ordinary syllable are three – i.e., as the trilateral Semitic pattern. Those which have less than three are called ‘Concave’ verbs (cf. PIH **Hes*-, **Hei*-, **g^wem*-); those extended are called ‘Convex’ verbs (cf. Lat. *plangō*, *spargō*, *frangō*, etc., which, apart from the extension in -g, contain a laryngeal); for more on this, *vide infra* on MIE Conjugations.

3. In this book PIE roots are usually written with laryngeals. Therefore, we only assume certainty in the non-laryngeal nature of early PIE dialects, from ca. 2500 BC on. Whether Late PIE lost them all sooner (ca. 3500 BC?) or later (ca. 2500 BC?), etymological roots which include laryngeals will often be labelled as PIH, or just as (general) PIE, while specific Late PIE vocabulary will be shown with an undetermined laryngeal output **ə*.

NOTE. Common PIE (or PIH) roots are reconstructed by most modern Indo-Europeanists with laryngeals; so e.g. different vowel outputs of early PIE dialects (like North-West IE or Proto-Greek) are explained through the phonological effects of old aspirated phonemes on adjacent vowels. See Appendix II.3 for more on this question.

Some linguists still follow the old non-laryngeal PIE concept (see Walde-Pokorny's *lexica*), while many only conceive a PIE with laryngeals. However, it is not logical to assume that, whereas in Proto-Anatolian laryngeals were lost or evolved, in Late PIE they were the same (**h*₁, **h*₂, **h*₃, or any other scheme) as in their common ancestor, Middle PIE. Therefore, some scholars have adapted the Late PIE reconstruction to a *partially laryngeal* or *non-laryngeal language* (see Adrados, Nikolayev, etc.), coeval with the *partially laryngeal* PAN, thus supposing a similar laryngeal loss in both Middle PIE dialects, usually implying a quicker loss in Late PIE, due to the conservation of laryngeals in Anatolian, and their complete disappearance in Late PIE dialects. Some still reconstruct for Late PIE an uncertain laryngeal (or vowel) **H* or **ə*, in some phonetic environments, otherwise difficult to explain, prior to its full loss in early PIE dialects.

4. Proto-Indo-European vowel apophony or Ablaut is indeed normal in MIE, but dialectal Ablaut must be corrected when loan-translated. Examples of these Lat. *confessus* (cf. Lat. *fassus sum*), from EIE *b^hā-*; Lat. *facilis/difficilis*, from EIE *d^hē-*; Lat. *saliō/insiliō/insultō*, etc.

NOTE. Such Ablaut is linked to languages with musical accent, as Latin. In Italic, the tone was always on the first syllable; Latin reorganized this system, and after Roman grammarians' "*paenultima* rule", Classic Latin accent felt on the second to last syllable if long, on the third to last syllable, or *anteпаenultima*, if short (hence Lat. *pudicus* but *módicus*), thus triggering off different inner vocalic timbres or *Ablauts*. Other Italic dialects, as Oscan or Umbrian, didn't suffered such apophony; cf. Osc. *anterstatai*, Lat. *interstitae*; Umb. *antakres*, Lat. *integris*; Umb. *procanurent*, Lat. *procinuerint*, etc. Germanic also knew such tone variations. More on Latin phonotactic development at <<http://www.cunyphonologyforum.net/SYLLPAPERS/Senhandoutnew.pdf>>.

5. In Romance languages, *Theme* is used instead of *Stem*. Therefore, *Theme Vowel* and *Thematic* refer to the Stem endings, usually to the *e/o* endings. In the Indo-European

languages, *Thematic* roots are those roots that have a “*theme vowel*”; a vowel sound that is always present between the root of the word and the attached inflections. *Athematic* roots lack a theme vowel, and attach their inflections directly to the root itself.

NOTE. The distinction between thematic and athematic roots is especially apparent in the Greek verb; they fall into two classes that are marked by quite different personal endings. Thematic verbs are also called $-\omega$ ($-\acute{o}$) verbs in Greek; athematic verbs are $-\mu$ ($-m\acute{i}$) verbs, after the first person singular present tense ending that each of them uses. The entire conjugation seems to differ quite markedly between the two sets of verbs, but the differences are really the result of the thematic vowel reacting with the verb endings. In Greek, athematic verbs are a closed class of inherited forms from the parent IE language. Marked contrasts between thematic and athematic forms also appear in Lithuanian, Sanskrit, and Old Church Slavonic. In Latin, almost all verbs are thematic; a handful of surviving athematic forms exist, but they are considered irregular verbs.

The thematic and athematic distinction also applies to nouns; many of the old IE languages distinguish between “vowel stems” and “consonant stems” in the declension of nouns. In Latin, the first, second, fourth, and fifth declensions are vowel stems characterized by *a*, *o*, *u* and *e*, respectively; the third declension contains both consonant stems and *i* stems, whose declensions came to closely resemble one another in Latin. Greek, Sanskrit, and other older IE languages also distinguish between vowel and consonant stems, as did Old English.

6. PIE $*d+t$, $*t+t$, $*dh+t$ → MIE **st**; PIE $*d+d$, $*t+d$, $*dh+d$ → MIE **sd**; PIE $*d+dh$, $*t+dh$, $*dh+dh$ → MIE **sdh**; because of the common intermediate phases found in Proto-Greek, cf. Gk. *st*, *sth* (as *pistis*, *oisqa*), and Europe’s Indo-European, cf. Lat. *est*, “come”, and O.H.G. examples. For an earlier stage of this phonetic output, compare O.Ind. *sehí* < $*sazdhi$, ‘sit!’, and not $*satthi$ (cf. O.Ind. *dehí*, Av. *dazdī*).

NOTE. It has been proposed an old PIE TT→TsT (where T = dental stop), i.e. that the cluster of two dental stops had a dental fricative **s** inserted between them. It is based on some findings in Hittite, where cluster *tst* is spelled as *z* (pronounced as *ts*), as in PIH $*h_1ed-ti$, “he eats” → $*h_1etsti$ → Hitt. *ezzi*. Confirmation from early intermediate and common (Late PIE) $*-st-$ are found e.g. in O.Ind. *mastis*, “measure”, from $*med-tis$, or Av. *-hasta-*, from $*sed-tós$. This evolution was probably overshadowed by other Aryan developments, see Appendix II.

7. The Feminine Late PIE $*-j\acute{o}/-\bar{i}$, old Abstract Collective PIH $*-ih_2$, gives EIE **-ja/-ī**. While both were still interchangeable in the common North-West IE (as the different dialectal outputs show), we prefer to use the ending **-ja** for feminines, and **-ī** for neuters; as, **smīghslī**, *thousand* (neuter), but **trja**, *three* (fem.).

The following abbreviations apply in this book:

IE	: Indo-European
IE II	: Middle PIE or PIH
PIH	: Proto-Indo-Hittite
IE III	: Late PIE
PIE	: Proto-Indo-European
EIE	: Europe's Indo-European
MIE	: Modern Indo-European

PAn	: Proto-Anatolian
CA	: Common Anatolian
Hitt.	: Hittite
Luw.	: Luwian
Lyc.	: Lycian
Pal.	: Palaic
Lyd.	: Lydian

PII	: Proto-Indo-Iranian
<i>Ind.</i>	<i>: Proto-Indo-Aryan</i>
O.Ind.	: Old Indian
Skr.	: Sanskrit
Hind.	: Hindustani
Hi.	: Hindi
Ur.	: Urdu
<i>Ira.</i>	<i>: Proto-Iranian</i>
Av.	: Avestan
O.Pers.	: Old Persian
Pers.	: Persian
Kur.	: Kurdish
Oss.	: Ossetian
Kam.	: Kamviri

PGk	: Proto-Greek
Gk.	: (Ancient) Greek
Phryg.	: Phrygian
Thr.	: Thracian
Dac.	: Dacian
Ven.	: Venetic
Lus.	: Lusitanian
A.Mac.	: Ancient Macedonian
Illy.	: Illyrian
Alb.	: Albanian

Ita.	: Proto-Italic
Osc.	: Oscan
Umb.	: Umbrian
Lat.	: Latin
O.Lat.	: Archaic Latin
V.Lat.	: Vulgar Latin
L.Lat.	: Late Latin
Med.Lat.	: Mediaeval Latin
Mod.Lat.	: Modern Latin
O.Fr.	: Old French
Prov	: Provençal
Gl.-Pt.	: Galician-Portuguese
Gal.	: Galician
Pt.	: Portuguese
Cat.	: Catalan
Fr.	: French
It.	: Italian
Spa.	: Spanish
Rom.	: Romanian

A GRAMMAR OF MODERN INDO-EUROPEAN

PGmc.	: Pre-Proto-Germanic
Gmc.	: Proto-Germanic
Goth.	: Gothic
Frank.	: Frankish
<i>Sca.</i>	: <i>Scandinavian (N. Gmc.)</i>
O.N.	: Old Norse
O.Ice.	: Old Icelandic
O.S.	: Old Swedish
Nor.	: Norwegian
Swe.	: Swedish
Da.	: Danish
Ice.	: Icelandic
Fae.	: Faeroese
<i>W.Gmc.</i>	: <i>West Germanic</i>
O.E.	: Old English (<i>W.Saxon, Mercian</i>)
O.Fris.	: Old Frisian
O.H.G.	: Old High German
M.L.G.	: Middle Low German
M.H.G.	: Middle High German
M.Du.	: Middle Dutch
Eng	: English
Ger.	: German
L.Ger.	: Low German
Fris.	: Frisian
Du.	: Dutch
Yidd.	: Yiddish

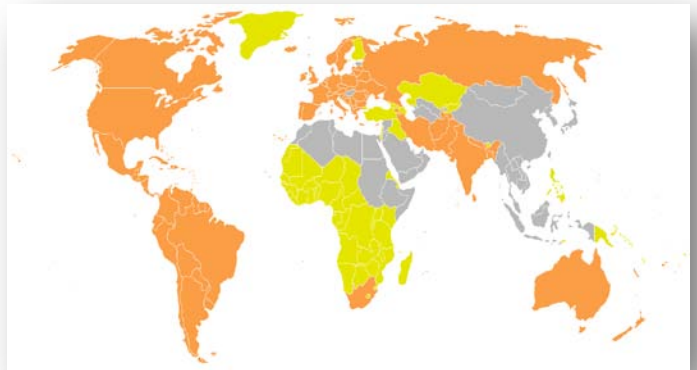
Cel.	: Proto-Celtic
Gaul.	: Gaulish
O.Ir.	: Old Irish
Sco.	: Scottish Gaelic
Ir.	: Irish Gaelic
Bret.	: Breton
Cor.	: Cornish
O.Welsh	: Old Welsh

BSl.	: Balto-Slavic
<i>Bal.</i>	: <i>Proto-Baltic</i>
O.Lith.	: Old Lithuanian
O.Pruss.	: Old Prussian
Lith.	: Lithuanian
Ltv.	: Latvian
<i>Sla.</i>	: <i>Proto-Slavic</i>
O.C.S.	: Old Church Slavonic
O.Russ.	: Old Russian
O.Pol.	: Old Polish
Russ.	: Russian
Pol.	: Polish
Cz.	: Czech
Slo.	: Slovenian
Slk.	: Slovak
Ukr.	: Ukrainian
Bel.	: Belarusian
Bul.	: Bulgarian
Sr.-Cr.	: Serbo-Croatian

1. INTRODUCTION

1.1. THE INDO-EUROPEAN LANGUAGE FAMILY

1.1.1. The Indo-European languages are a family of several hundred modern languages and dialects, including most of the major languages of Europe, as well as many in Asia. Contemporary languages in this family include English, German, French, Spanish, Portuguese,



In dark, countries with a majority of Indo-European speakers; in light color, countries with Indo-European-speaking minorities.

Hindustani (i.e., Hindi and Urdu among other modern dialects), Persian and Russian. It is the largest family of languages in the world today, being spoken by approximately half the world's population as mother tongue. Furthermore, the majority of the other half speaks at least one of them as second language.

1.1.2. Romans didn't perceive similarities between Latin and Celtic dialects, but they found obvious correspondences with Greek. After Grammarian Sextus Pompeius Festus:

Suppum antiqui dicebant, quem nunc supinum dicimus ex Graeco, videlicet pro adspiratione ponentes <s> litteram, ut idem ὕλας dicunt, et nos silvas; item ἑξ sex, et ἑπτά septem.

Such findings are not striking, though, as Rome was believed to have been originally founded by Trojan hero Aeneas and, consequently, Latin was derived from Old Greek.

1.1.3. Florentine merchant Filippo Sassetti travelled to the Indian subcontinent, and was among the first European observers to study the ancient Indian language, Sanskrit. Writing in 1585, he noted some word similarities between Sanskrit and Italian, e.g. *deva/dio*, "God", *sarpa/serpe*, "snake", *sapta/sette*, "seven", *ashta/otto*, "eight", *nava/nove*, "nine". This observation is today credited to have foreshadowed the later discovery of the Indo-European language family.

1.1.4. The first proposal of the possibility of a common origin for some of these languages came from Dutch linguist and scholar Marcus Zuerius van Boxhorn in 1647. He discovered the similarities among Indo-European languages, and supposed the existence of a primitive common language which he called “*Scythian*”. He included in his hypothesis Dutch, Greek, Latin, Persian, and German, adding later Slavic, Celtic and Baltic languages. He excluded languages such as Hebrew from his hypothesis. However, the suggestions of van Boxhorn did not become widely known and did not stimulate further research.

1.1.5. On 1686, German linguist Andreas Jäger published *De Lingua Vetustissima Europae*, where he identified an remote language, possibly spreading from the Caucasus, from which Latin, Greek, Slavic, ‘Scythian’ (i.e. Persian) and Celtic (or ‘Celts-Germanic’) were derived, namely *Scytho-Celtic*.

1.1.6. The hypothesis re-appeared in 1786 when Sir William Jones first lectured on similarities between four of the oldest languages known in his time: Latin, Greek, Sanskrit and Persian:

“The Sanskrit language, whatever be its antiquity, is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and the forms of grammar, than could possibly have been produced by accident; so strong indeed, that no philologer could examine them all three, without believing them to have sprung from some common source, which, perhaps, no longer exists: there is a similar reason, though not quite so forcible, for supposing that both the Gothic and the Celtic, though blended with a very different idiom, had the same origin with the Sanskrit; and the old Persian might be added to the same family”

1.1.7. Danish Scholar Rasmus Rask was the first to point out the connection between Old Norwegian and Gothic on the one hand, and Lithuanian, Slavonic, Greek and Latin on the other. Systematic comparison of these and other old languages conducted by the young German linguist Franz Bopp supported the theory, and his *Comparative Grammar*, appearing between 1833 and 1852, counts as the starting-point of Indo-European studies as an academic discipline.

NOTE. The term Indo-European itself now current in English literature, was coined in 1813 by the British scholar Sir Thomas Young, although at that time there was no consensus as to the naming of the recently discovered language family. Among the names suggested were *indo-*

1. Introduction

germanique (C. Malte-Brun, 1810), *Indoeuropean* (Th. Young, 1813), *japetisk* (Rasmus C. Rask, 1815), *indisch-teutsch* (F. Schmitthenner, 1826), *sanskritisch* (Wilhelm von Humboldt, 1827), *indokeltisch* (A. F. Pott, 1840), *arioeuropeo* (G. I. Ascoli, 1854), *Aryan* (F. M. Müller, 1861), *aryaque* (H. Chavée, 1867), etc.

In English, Indo-German was used by J. C. Prichard in 1826 although he preferred Indo-European. In French, use of *indo-européen* was established by A. Pictet (1836). In German literature, Indo-Europäisch was used by Franz Bopp since 1835, while the term Indo-Germanisch had already been introduced by Julius von Klapproth in 1823, intending to include the northernmost and the southernmost of the family's branches, as it were as an abbreviation of the full listing of involved languages that had been common in earlier literature, opening the doors to ensuing fruitless discussions whether it should not be *Indo-Celtic*, or even *Tocharo-Celtic*.

1.1.8. There are certain common linguistic ancestors of modern IE languages, and some of them are well-attested dead languages (or language systems), such as Latin for modern Romance languages – French, Spanish, Portuguese, Italian, Romanian or Catalan –, Sanskrit for some modern Indo-Aryan languages, or Greek for Modern Greek.

Furthermore, there are some still older IE languages, from which these old formal languages were derived and later systematized. They are, following the above examples, *Archaic* or *Old Latin*, *Archaic* or *Vedic Sanskrit* and *Archaic* or *Old Greek*, attested in older compositions or inscriptions, or inferred through the study of oral traditions and even foreign texts, like the Indo-Aryan superstrate of the Mitanni.

And there are also some old related dialects, which help us reconstruct proto-languages, such as Osco-Umbrian for an older *Proto-Italic* (and with Proto-Celtic, Proto-Germanic and Proto-Balto-Slavic for Europe's Indo-European), Indo-Aryan dialects for Proto-Indo-Aryan (and with Proto-Iranian for *Proto-Indo-Iranian*) or Mycenaean for an older *Proto-Greek*.

NOTE. Mallory and Adams (2006) argue, about (Late) Proto-Indo-European: “How real are our reconstructions? This question has divided linguists on philosophical grounds.

- There are those who argue that we are not really engaged in ‘reconstructing’ a past language but rather creating abstract formulas that describe the systematic relationship between sounds in the daughter languages.
- Others argue that our reconstructions are vague approximations of the proto-language; they can never be exact because the proto-language itself should have had different dialects (yet we reconstruct only single proto-forms) and our reconstructions are not set to any specific time.

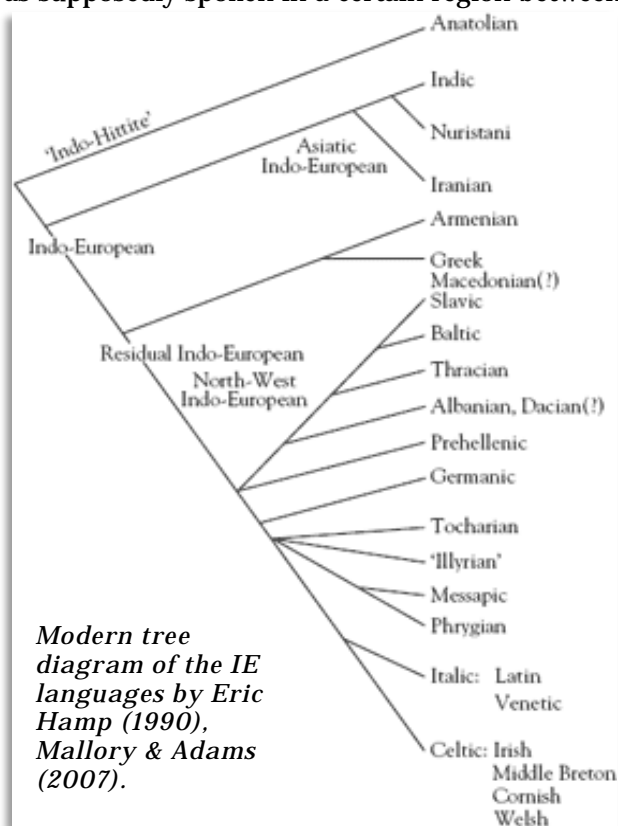
○ Finally, there are those who have expressed some statistical confidence in the method of reconstruction. Robert Hall, for example, claimed that when examining a test control case, reconstructing proto-Romance from the Romance languages (and obviously knowing beforehand what its ancestor, Latin, looked like), he could reconstruct the phonology at 95% confidence, and the grammar at 80%. Obviously, with the much greater time depth of Proto-Indo-European, we might well wonder how much our confidence is likely to decrease.

Most historical linguists today would probably argue that [laryngeal PIE] reconstruction results in approximations. A time traveller, armed with this book and seeking to make him- or herself understood would probably engender frequent moments of puzzlement, not a little laughter, but occasional instances of lucidity”.

1.2. TRADITIONAL VIEWS

1.2.1. In the beginnings of the Indo-European or Indo-Germanic studies using the comparative grammar, the Indo-European proto-language was reconstructed as a unitary language. For Rask, Bopp and other Indo-European scholars, it was a search for *the* Indo-European. Such a language was supposedly spoken in a certain region between Europe and Asia and at one point in time – between ten thousand and four thousand years ago, depending on the individual theories –, and it spread thereafter and evolved into different languages which in turn had different dialects.

1.2.2. The *Stammbaumtheorie* or Genealogical Tree Theory states that languages split up in other languages, each of them in turn split up in others, and so on, like the branches of a tree. For example, a well known old theory about Indo-European is that, from *the* PIE language, two main groups of



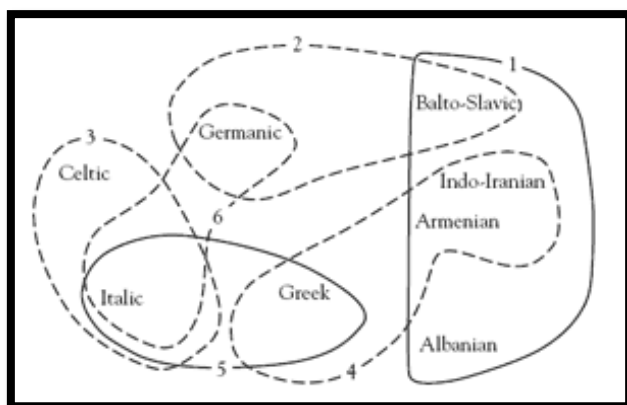
1. Introduction

dialects known as *Centum* and *Satem* separated – so called because of their pronunciation of PIE **kmtóm*, “*hundred*”, in Latin and Avestan. From these groups others split up, as *Centum* Proto-Germanic, Proto-Italic or Proto-Celtic, and *Satem* Proto-Balto-Slavic, Proto-Indo-Iranian.

NOTE. The *Centum* and *Satem* isogloss is one of the oldest known phonological differences of IE languages, and is still used by many to classify them in two main dialectal groups – postulating the existence of *proto-Centum* and a *proto-Satem* –, disregarding their relevant morphological and syntactical differences. The isogloss is based on a simple vocabulary comparison; as, from PIE **kmtóm* (possibly earlier **dkmtóm*, from **dekm*, “*ten*”), *Satem*: O.Ind. *śatám*, Av. *satəm*, Lith. *šimtas*, O.C.S. *sto*, or *Centum*: Gk. *ἐκατόν*, Lat. *centum*, Goth. *hund*, O.Ir. *cet*, etc.

It remains the most used model for understanding the Indo-European language reconstruction, since it was proposed by A. Schleicher (*Compendium*, 1866). The problem with its simplicity is that “the branching of the different groups is portrayed as a series of clean breaks with no connection between branches after they have split, as if each dialectal group marched away from the rest. Such sharp splits are possible, but assuming that all splits within Proto-Indo-European were like this is not very plausible, and any linguist surveying the current Indo-European languages would note dialectal variations running through some but not all areas, often linking adjacent groups who may belong to different languages” (Mallory & Adams, 2006).

1.2.3. The *Wellentheorie* or Waves Theory, of J. Schmidt, states that one language is created from another by the spread of innovations, the way water waves spread when a stone hits the water surface. The lines that define the extension of the innovations are called isoglosses. The convergence of different isoglosses over a common territory signals the existence of a new language or dialect. Where isoglosses from different languages coincide, transition zones are formed.



“Wave model” of some of the interrelationships of the IE languages, Mallory & Adams (2007).

NOTE. These old models for our understanding of language reconstructions are based on the hypothesis that there was one common and *static* Proto-Indo-European language, and that all features of modern Indo-European languages can be explained in such unitary schemes, by classifying them either as innovations or as archaisms of one old, rigid proto-language. After Mallory and Adams (*The Oxford Introduction to Proto-Indo-European and the Proto-Indo-European World*, 2006), “their criteria of inclusion, why we are looking at any particular one, and not another one, are no more solid than those that define family trees. The key element here is what linguistic features actually help determine for us whether two languages are more related or less related to one another. A decision in this area can be extraordinary difficult because we must be able to distinguish between features that may have been present throughout the entire Indo-European world (*Indoeuropeia* has been employed to describe this concept) and have dropped out in some but not others against those features that are innovations in only some of the different groups. The historical linguist is principally looking for shared innovations, i.e. are there traces of corresponding developments between two or more language groups that would indicate that they shared a common line of development different from other language groups? Only by finding shared innovations can one feel confident that the grouping of individual Indo-European linguistic groups into larger units or branches of the tree is real”.

1.2.4. Because of the difficulties found in the modelling of Proto-Indo-European branches and daughter languages into the traditional, unitary ‘Diverging Tree’ framework, i.e. a uniform Proto-Indo-European language with its branches, a new model called ‘*Converging Association of Languages*’ was proposed, in which languages that are in contact (not necessarily related to each other) exchange linguistic elements and rules, thus developing and acquiring from each other. Most linguists have rejected it as an implausible explanation of the irregularities found in the old, static concept of PIE.

NOTE. Among the prominent advocates is N.S. Trubetzkoy (*Urheimat*, 1939): “The term ‘language family’ does not presuppose the common descent of a quantity of languages from a single original language. We consider a ‘language family’ a group of languages, in which a considerable quantity of lexical and morphological elements exhibit regular equivalences (...) it is not necessary for one to suppose common descent, since such regularity may also originate through borrowings between neighboring unrelated languages (...) It is just as conceivable that the ancestors of the Indo-European language branches were originally different from each other, but through constant contact, mutual influence, and borrowings, approached each other, without however ever becoming identical to one another” (Meier-Brügger, 2003).

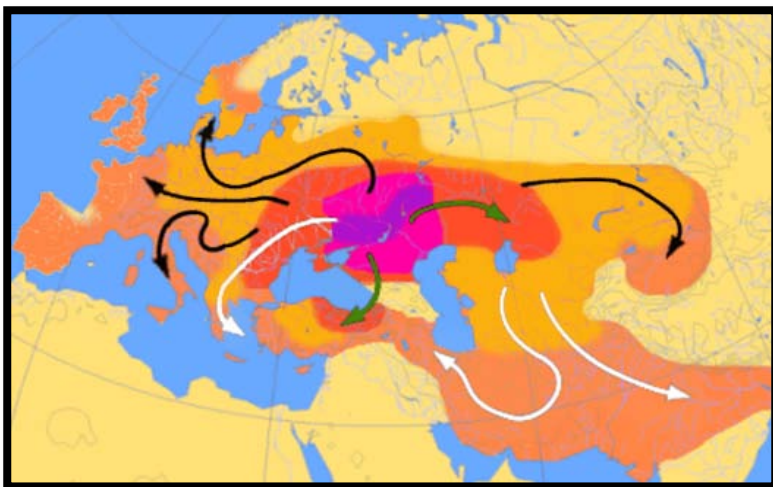
1. Introduction

Agreeing with Neumann (1996), Meier-Brügger (2003) states that “that the various Indo-European languages have developed from a prior unified language is certain. Questionable is, however, the concrete ‘how’ of this process of differentiation”, and that this “thesis of a ‘converging association of languages’ may immediately be dismissed, given that all Indo-European languages are based upon the same Proto-Indo-European flexion morphology. As H. Rix makes clear, it is precisely this morphological congruence that speaks against the language association model, and for the diverging tree model”, even if the traditional language tree models were unable to explain the newest findings.

1.3. THE THEORY OF THE THREE STAGES

1.3.1. Even some of the first Indo-Europeanists had noted in their works the possibility of older origins for the reconstructed (Late) Proto-Indo-European, although they didn’t dare to describe those possible older stages of the language.

NOTE. The development of this theory of three linguistic stages can be traced back to the very origins of Indo-European studies, firstly as a diffused idea of a non-static PIE language, and later widely accepted as a dynamic dialectal evolution, already in the 20th century, after the decipherment of the Anatolian scripts. Most



Expansion of Proto-Indo-European and its dialects ca. 4000BC-500AD, according to the Kurgan hypothesis.

linguists accept that Proto-Indo-European must be the product of a long historical development. On this question, H. Rix (Modussystem, 1986) asserts “Whereby comparative reconstruction is based upon a group of similar forms in a number of languages, internal reconstruction takes its point of departure from irregularities or inhomogeneities of the system of a single language (...) The fundamental supposition of language-internal reconstruction is that such an irregularity or inhomogeneity in the grammar of a language is the result of a diachronic process, in which an older pattern,, or homogeneity is eclipsed, but not fully suppressed”. According to Meier-Brügger (2003), “Rix works back from Late Proto-Indo-European Phase B (reconstructible Proto-Indo-European) using deducible information about an Early Proto-Indo-European Phase A, and gathers

in his work related evidence on the Proto-Indo-European verbal system". On that question, see also G.E. Dunkel *Early, Middle, Late Indo-European: Doing it My Way* (1997), Adrados, Bernabé, Mendoza, *Manual de Lingüística Indoeuropea* (1998); etc.

1.3.2. Today, a widespread Three-Stage Theory divide PIE (internal) language evolution into three main historic layers or stages, including a description of branches and languages as clean breaks from a common source (e.g. PAn from IE II) or from intermediate *dialect continua* (e.g. Germanic and Balto-Slavic from EIE), or classifying similarities into continued linguistic contact (e.g. Italic and Celtic, or Balto-Slavic and Indo-Iranian):

1) Early PIE (also IE I, for some *Pre-Proto-Indo-European*) is the hypothetical ancestor of Middle PIE, and probably the oldest stage of the language that comparative grammar could help reconstruct using internal reconstruction. There is, however, no common position as to how it was like or when and where it was spoken.

2) The second stage corresponds to a time before the separation of Proto-Anatolian from the common linguistic community where it should have coexisted (as a Pre-Anatolian dialect) with Pre-IE III. That stage of the language is called Middle PIE or IE II, also *Indo-Hittite*, identified with early Kurgan cultures in the Kurgan Hypothesis.

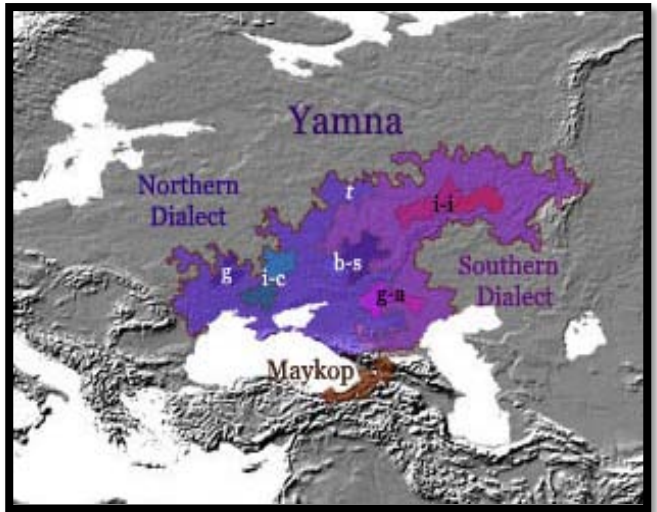
NOTE. On the place of Anatolian among IE languages, the question is whether it separated first as a language branch from PIE, and to what extent was it thus spared developments common to the remaining (Late) Proto-Indo-European language group. There is growing consensus in favor of its early split from Indo-European (Heading, among others, 'Indo-Hittite'); see N. Oettinger '*Indo-Hittite*' – *Hypothesen und Wortbildung* (1986), A. Lehrman *Indo-Hittite Revisited* (1996), H. Craig Melchert *The Dialectal Position of Anatolian within IE in IE Subgrouping* (1998), etc.

For Kortlandt (1989): "Since the beginnings of the Yamnaya, Globular Amphora, Corded Ware, and Afanasievo cultures can all be dated between 3600 and 3000 BC, I am inclined to date Proto-Indo-European to the middle of the fourth millennium, and to recognize Proto-Indo-Hittite as a language which may have been spoken a millennium earlier".

3) The common immediate ancestor of most of the earliest known IE proto-languages – more or less the same *static PIE* searched for since the start of Indo-European studies, before Hittite was deciphered – is usually called Late PIE, also *IE III*, often simply *Proto-Indo-European*, often dated some time ca. 3500-3000 BC using linguistic or archaeological models, or both.

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NOTE. According to Mallory & Adams (2006), “Generally, we find some form of triangulation based on the earliest attested Indo-European languages, i.e. Hittite, Mycenaean Greek, and Indo-Aryan, each of these positioned somewhere between c. 2000 and 1500 BC. Given the kind of changes linguists know to have occurred in the attested histories of Greek or Indo-Aryan, etc., the linguist compares the difference wrought by such changes with the degree of difference between the earliest attested Hittite, Mycenaean Greek,



Yamna culture ca. 3000 BC, roughly the time when Late PIE and Proto-Anatolian were spoken, according to the Kurgan framework.

and Sanskrit and reconstructed Proto-Indo-European. The order of magnitude for these estimates (or guesstimates) tends to be something on the order of 1,500-2,000 years. In other words, employing some form of gut intuition (based on experience which is often grounded on the known separation of the Romance or Germanic languages), linguists tend to put Proto-Indo-European sometime around 3000 BC plus or minus a millennium (...) the earliest we are going to be able to set Proto-Indo-European is about the fifth millennium BC if we want it to reflect the archaeological reality of Eurasia. We have already seen that individual Indo-European groups are attested by c. 2000 BC. One might then place a notional date of c. 4500-2500 BC on Proto-Indo-European. The linguist will note that the presumed dates for the existence of Proto-Indo-European arrived at by this method are congruent with those established by linguists' 'informed estimation'. The two dating techniques, linguistic and archeological, are at least independent and congruent with one another”.

Likewise, Meier-Brügger (2003) thinks that “No precise statement concerning the exact time period of the Proto-Indo-European linguistic community is possible. One may only state that the ancient Indo-European languages that we know, which date from the 2nd millennium BC, already exhibit characteristics of their respective linguistic groups in their earliest occurrences, thus allowing one to presume the existence of a separate and long pre-history (...) The period of 5000-3000 BC is suggested as a possible timeframe of a [common] Proto-Indo-European language”.

However, on the early historic and prehistoric finds, B. Hänsel (1994) states that “Linguistic development may be described in steps that, although logically comprehensible, are not precisely

analyzable without a timescale. The archaeologist pursues certain areas of cultural development, the logic of which (if one exists) remains a mystery to him, or is only accessible in a few aspects of its complex causality". On the other hand, he is provided with concrete ideas with regard to time, as vague as these may be, and works with a concept of culture that the Indo-European linguist cannot attain. For the archaeologist, culture is understood in the sense of a sociological definition (...) The archaeological concept of culture is composed of so many components, that by its very nature its contours must remain blurred. But languages are quite different. Of course there are connections; no one can imagine cultural connections without any possibility of verbal communication. But it is too much to ask that archaeologists equate their concept of culture, which is open and incorporates references on various levels, to the single dimension of linguistic community. Archaeology and linguistics are so fundamentally different that, while points of agreement may be expected, parallels and congruency may not. The advantage of linguistic research is its ability to precisely distinguish between individual languages and the regularity of developments. The strength of archaeology is its precision in developing timelines. What one can do, the other cannot. They could complement each other beautifully, if only there were enough commonality.

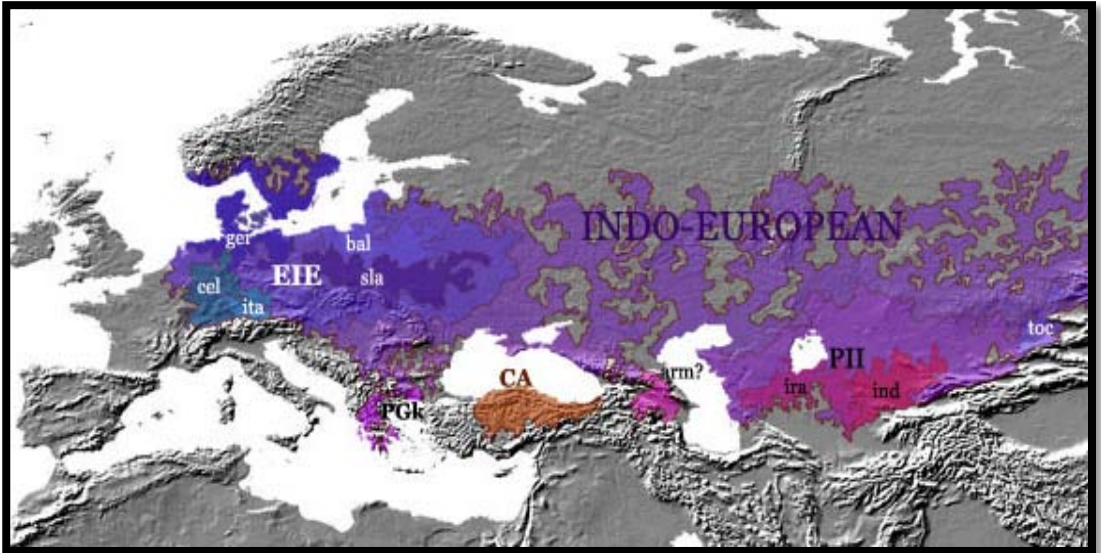
1.3.3. Another division has to be made, so that the dialectal evolution and this revival project is properly understood. Late PIE had at least two main *inner* dialectal branches, the *Southern* (or IE IIIa) and the *Northern* (or IE IIIb) ones. As far as we know, while speakers of *Southern* or *Graeco-Aryan* dialects (like Pre-Greek and Pre-Indo-Iranian Indo-European) spread in different directions with the first Late PIE migrations ca. 3000-2500 BC, speakers of Northern dialects remained still in close contact for centuries in Europe, but for those (like Pre-Tocharian IE speakers) who migrated to Asia.

NOTE. "Within the group of IE languages, some individual languages are more closely associated with one another owing to morphological or lexical similarities. The cause for this, as a rule, is a prehistoric geographic proximity (perhaps even constituting single linguistic community) or a common preliminary linguistic phase, a middle mother-language phase, which would however then be posterior to the period of the [common PIE] mother language" (Meier-Brügger, 2003).

About Tocharian, Adrados (1998) says "even if archaic in some respects (its *Centum* character, subjunctive, etc.) it has shares common features with Balto-Slavic, among other languages: they must be old isoglosses, shared before it separated and migrated to the East. It is, therefore, an IE III B [=Northern] language. It shows great innovations, too, something normal in a language that evolved isolated".

1. Introduction

On the Southern (*Graeco-Aryan* or *Indo-Greek*) PIE dialect, see Gamkrelidze, Ivanov (1995) *Indo-European and the Indo-Europeans*, and Clackson (1994) *The Linguistic Relationship Between Armenian and Greek*, Adrados (1998), etc. Even in Mallory & Adams (2006): “Many have argued that Greek, Armenian, and Indo-Iranian share a number of innovations that suggest that there should have been some form of linguistic *continuum* between their predecessors”; “An Irish-Indic cognate looks a damn sight stronger than a Greek-Iranian and linguists have long noted that there are a whole series of words that seem to be confined largely to Greek and Indo-Iranian”.



1.3.4. The so-called *North-West, Residual, or Europe's Indo-European* language, also *Old European* or *Proto-European*, linguistic ancestor of Celtic, Italic, Germanic, Balto-Slavic and other (fragmentary or unattested) European dialects, is believed to have formed the last common IE dialect *continuum* in Northern Europe during the centuries on either side of 2500 BC. It was therefore a language coeval with Common Anatolian, Proto-Indo-Iranian and Proto-Greek, able to fill in the time gap between the dates estimated for North-West IE proto-languages and the Central and Eastern ones.

NOTE 1. On the so-called “*Nort-West Indo-European*” language or *dialect continuum*, see N. Oettinger *Grundsätzliche überlegungen zum Nordwest-Indogermanischen* (1997), and *Zum nordwestindogermanischen Lexikon* (1999); M. E. Huld *Indo-Europeanization of Northern Europe* (1996); Adrados, Bernabé, Mendoza, *Manual de Lingüística Indoeuropea* (1998); etc.

Furthermore, regarding modern IE studies, even without accepting a common, independent North-West IE language, “There are so many of these words that are confined within these five language groups (Celtic, Italic, Germanic, Baltic, and Slavic) that most linguists would regard

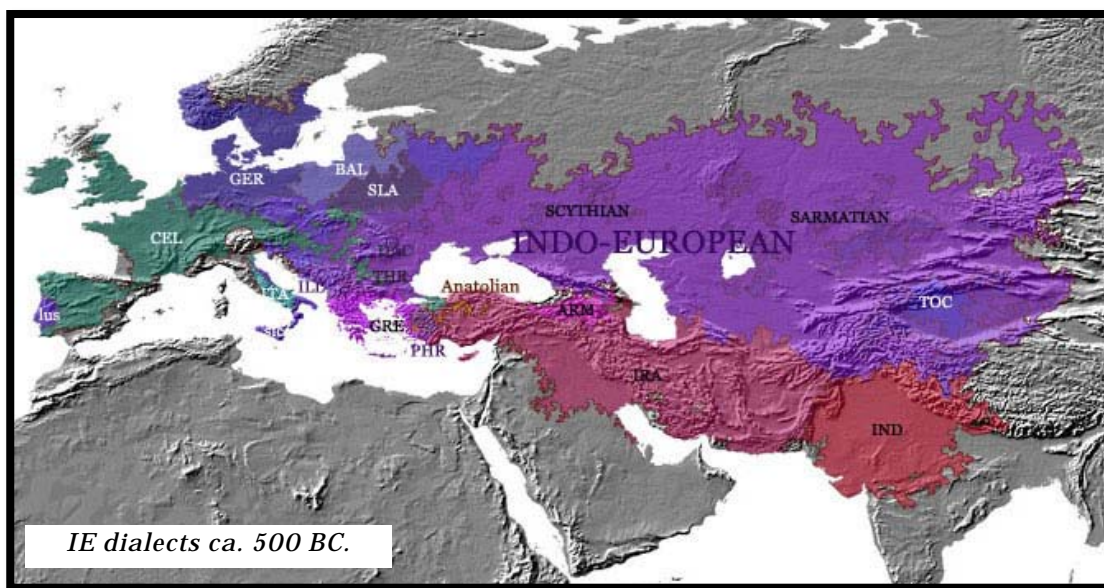
cognates found exclusively between any two or among all of these groups as specifically North-West Indo-European and not demonstrably Proto-Indo-European. To accept a series of cognates as reflections of a PIE word requires that the evidence come from further afield than a series of contiguous language groups in Europe”, Mallory & Adams (2006).

NOTE 2. About the ‘Dark Ages’, the time gap between the reconstructed North-West Indo-European proto-languages (dated ca. 1500 BC) and the other IE proto-languages reconstructed (dated ca. 2500 BC), Mallory & Adams (2006): “If one reviews discussion of the dates by which the various Indo-European groups first emerged, we find an interesting and somewhat disturbing phenomenon. By c. 2000 BC we have traces of Anatolian, and hence linguists are willing to place the emergence of Proto-Anatolian to c. 2500 BC or considerably earlier. We have already differentiated Indo-Aryan in the Mitanni treaty by c.1500 BC so undifferentiated Proto-Indo-Iranian must be earlier, and dates on the order of 2500-2000 BC are often suggested. Mycenaean Greek, the language of the Linear B tablets, is known by c.1300 BC if not somewhat earlier and is different enough from its Bronze Age contemporaries (Indo-Iranian or Anatolian) and from reconstructed PIE to predispose a linguist to place a date of c. 2000 BC or earlier for Proto-Greek itself. So where we have written documentation from the Bronze Age, we tend to assign the proto-languages to an earlier period of the Bronze Age, i.e. earlier than at least 2000 BC if not 2500 BC. When we turn to western and northern Europe, however, both our attestation of the different groups and the estimates of their proto-languages tend to be shallower. The Germanic languages, for example, are all derived from Proto-Germanic. Now the earliest runic inscriptions are so close to reconstructed Proto-Germanic that there is a tendency to date the Germanic proto-language to about 500 BC. Similarly, if we examine the earliest Celtic inscriptional evidence, be it Continental or even the much more recent Irish ogham stones, these inscriptions are not that far removed from the reconstructed Proto-Celtic and again we tend to have dates suggested on the order of 1000 BC. The Slavic languages only began differentiating from one another during the historical period, and Proto-Slavic is generally set to about the beginning of the Christian era while Proto-Baltic and Proto-Balto-Slavic (assuming its existence) are probably envisaged as a second millennium BC phenomenon. In short, where the Indo-European groups are more recently attested, we tend to find that they are also regarded as having differentiated at a more recent time, i.e. between c.1500 and 500 BC. One explanation for the relatively short time depths of the attested northern and western Indo-European groups is that these groups are the only survivors of a long process of linguistic assimilation that has occurred as small demographic and linguistic groups moved, interacted, and merged. We can see precisely such a process in action in the historic period as Latin assimilated and replaced all the other Italic languages, Umbrian, Oscan, etc., and then went on to assimilate and replace much of the Celtic languages. Also within the historic period Slavic

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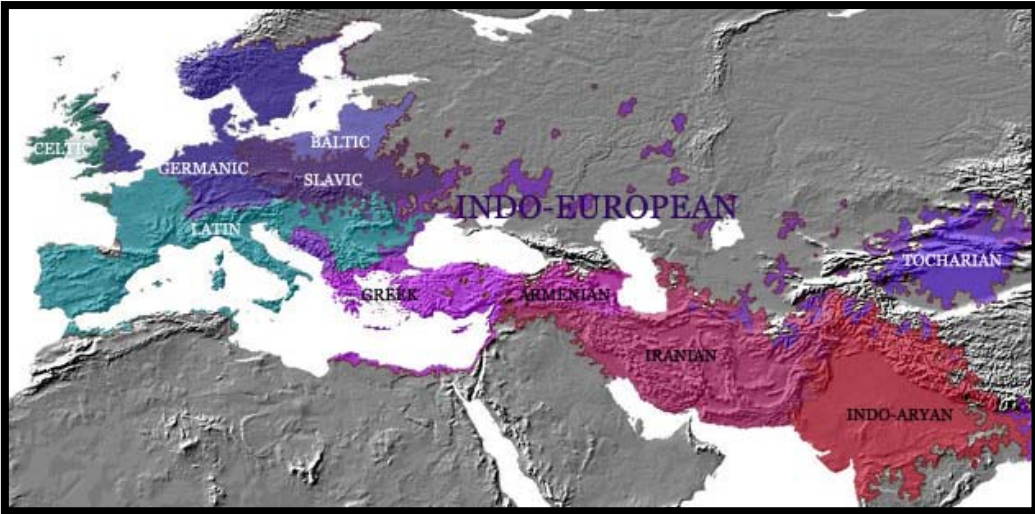
assimilated and replaced such other Indo-European languages as Thracian, and Koine Greek replaced nearly all other varieties of Greek. If we had only contemporary data to work with, we would have to conclude that both Proto-Italic (now equivalent to Proto-Romance) and Proto-Greek flourished around the beginning of the Christian era. These 'extinction events' in the history of Italic and Greek had the effect of 'resetting' the time depth of the proto-language. This process must have been repeated time and again in the prehistoric period".

Similarly, Kortlandt (1989) detected what "seems to be a general tendency to date proto-languages farther back in time than is warranted by the linguistic evidence. When we reconstruct Proto-Romance, we arrive at a linguistic stage which is approximately two centuries later than the language of Caesar and Cicero (cf. Agard 1984: 47-60 for the phonological differences). When we start from the extralinguistic evidence and identify the origins of Romance with the beginnings of Rome, we arrive at the eighth century BC, which is almost a millennium too early. The point is that we must identify the formation of Romance with the imperfect learning of Latin by a large number of people during the expansion of the Roman empire".

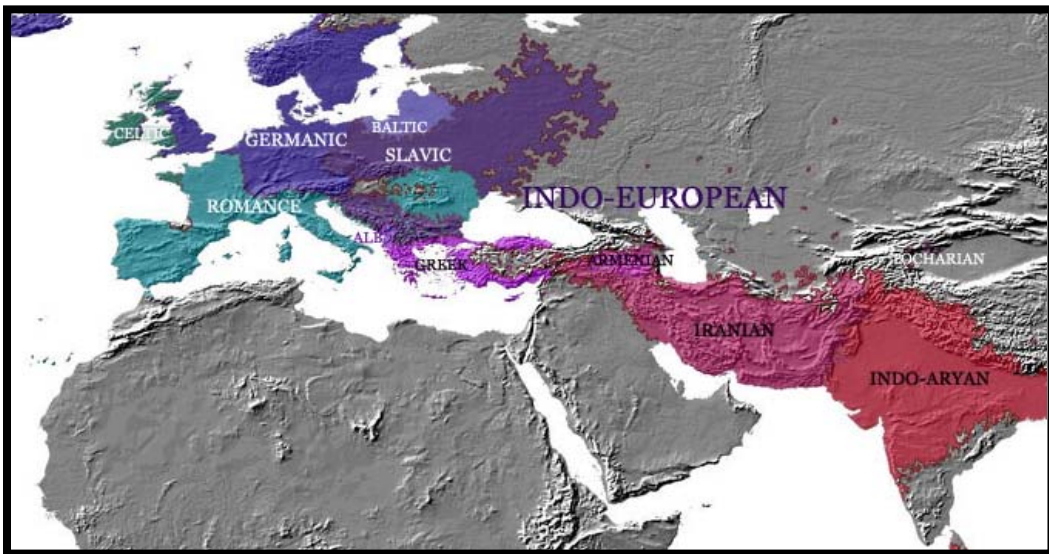


1.3.4. Apart from the shared phonology and vocabulary, Europe's Indo-European shows other common features, as a trend to reduce the noun inflection system, shared innovations in the verbal system, the *-r* endings of the middle or middle-passive voice, etc. The southern dialects, which spread in different directions and evolved without forming a *continuum*, show therefore a differentiated phonology and even vocabulary, but common developments like the augment in *é-*, etc.

A GRAMMAR OF MODERN INDO-EUROPEAN



NOTE. Some European dialects like Balto-Slavic and, to some extent, Italic (or Latin, if differentiated from Osco-Umbrian), either because of general PIE innovative or archaic trends that only they maintained, or because of their original situation within the prehistoric dialectal territories in relation with the origin of innovations – or just because they remained in contact with Southern Indo-European dialects after the first PIE split (e.g. through the Scythian or general Iranian expansions) – show features usually identified with Indo-Iranian, as an 8-case noun declension and phonetic satemization, while having morphological features clearly common to Germanic and Celtic dialects, like their verbal system. *Images show IE languages ca. 500 AD (top) and 1500 AD (under these lines).*



1.4. THE PROTO-INDO-EUROPEAN *URHEIMAT* OR ‘HOMELAND’

1.4.1. The search for the *Urheimat* or ‘Homeland’ of the prehistoric Proto-Indo-Europeans has developed as an archaeological quest along with the linguistic research looking for the reconstruction of the proto-language.

NOTE. According to A. Scherer’s *Die Urheimat der Indogermanen* (1968), summing up the views of various authors from the years 1892-1963, still followed by mainstream Indo-European studies today, “Based upon the localization of later languages such as Greek, Anatolian, and Indo-Iranian, a swathe of land in southern Russia north of the Black Sea is often proposed as the native area of the speakers of Proto-Indo-European” (Meier-Brügger, 2003).

1.4.2. The *Kurgan hypothesis* was introduced by Marija Gimbutas in 1956 in order to combine archaeology with linguistics in locating the origins of the Proto-Indo-Europeans. She named the set of cultures in question “Kurgan” after their distinctive burial mounds and traced their diffusion into Eastern and Northern Europe.

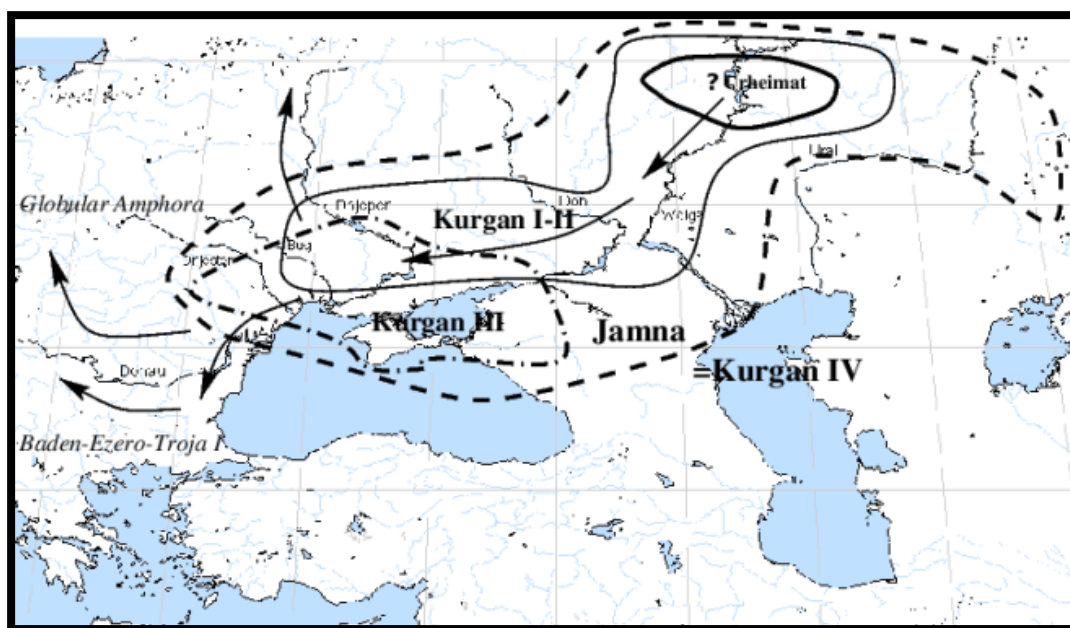


Photo of a Kurgan (Archaeology Magazine).

1.4.3. According to her hypothesis, PIE speakers were probably a nomadic tribe of the Pontic-Caspian steppe that expanded in successive stages of the Kurgan culture and three successive “waves” of expansion during the 3rd millennium BC:

- Kurgan I, Dnieper/Volga region, earlier half of the 4th millennium BC. Apparently evolving from cultures of the Volga basin, subgroups include the Samara and Seroglazovo cultures.
- Kurgan II–III, latter half of the 4th millennium BC. Includes the Sredny Stog culture and the Maykop culture of the northern Caucasus. Stone circles, early two-wheeled chariots, anthropomorphic stone *stelae* of deities.
- Kurgan IV or Pit Grave culture, first half of the 3rd millennium BC, encompassing the entire steppe region from the Ural to Romania.

- Wave 1, predating Kurgan I, expansion from the lower Volga to the Dnieper, leading to coexistence of Kurgan I and the Cucuteni culture. Repercussions of the migrations extend as far as the Balkans and along the Danube to the Vinča and Lengyel cultures in Hungary.
- Wave 2, mid 4th millennium BC, originating in the Maykop culture and resulting in advances of “*kurganized*” hybrid cultures into northern Europe around 3000 BC – Globular Amphora culture, Baden culture, and ultimately Corded Ware culture.
- Wave 3, 3000-2800 BC, expansion of the Pit Grave culture beyond the steppes; appearance of characteristic pit graves as far as the areas of modern Romania, Bulgaria and eastern Hungary.



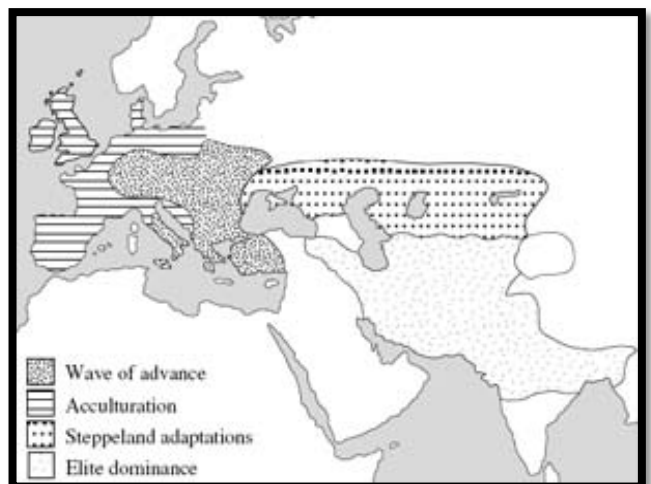
Hypothetical Homeland or Urheimat of the first PIE speakers, from 4500 BC onwards. The Yamna (Pit Grave) culture lasted from ca. 3600 till 2200 BC. In this time the first wagons appeared. People were buried with their legs flexed, a position which remained typical for the Indo-Europeans for a long time. The burials were covered with a mound, a kurgan. During this period, from 3600 till 3000 IE II split up into Pre-IE III and Pre-Proto-Anatolian. From ca.3000 B.C on, Late PIE dialects began to differentiate and spread by 2500 westward (Europe's Indo-European), southward (Proto-Greek) and eastward (Proto-Aryan, Pre-Proto-Tocharian).

1. Introduction

NOTE. On the Kurgan hypothesis, Mallory & Adams (2006) say that “[t]he opposite method to a retrospective approach is a prospective approach where one starts with a given archaeological phenomenon and tracks its expansion. This approach is largely driven by a theory connected with the mechanism by which the Indo-European languages must have expanded. Here the trajectory need not be the type of family tree that an archaeologist might draw up but rather some other major social phenomenon that can move between cultures. For example, in both the nineteenth century and then again in the later twentieth century, it was proposed that Indo-European expansions were associated with the spread of agriculture. The underlying assumption here is that only the expansion of a new more productive economy and attendant population expansion can explain the widespread expansion of a language family the size of the Indo-European. This theory is most closely associated with a model that derives the Indo-Europeans from Anatolia about the seventh millennium BC from whence they spread into south-eastern Europe and then across Europe in a Neolithic ‘wave of advance’.

A later alternative mechanism is the spread of more pastoral societies who exploited the horse (and later the chariot) and carried a new language across Europe and Asia from the fourth millennium bc onwards. The underlying assumption here is that the vector of Indo-European language spread depended on a new, more aggressive social organization coupled with a more mobile economy and superior transportation technology. As this theory sets the homeland in the steppelands north of the Black and Caspian seas among different cultures that employed barrows for their burials (Russian *kurgan*), it is generally termed the Kurgan theory.

Although the difference between the Wave of Advance and Kurgan theories is quite marked, they both share the same explanation for the expansion of the Indo-Iranians in Asia (and there are no fundamental differences in either of their difficulties in explaining the Tocharians), i.e. the expansion of mobile pastoralists eastwards and then southwards into Iran and India. Moreover, there is recognition by



supporters of the Neolithic theory that the ‘wave of advance’ did not reach the peripheries of Europe (central and western Mediterranean, Atlantic and northern Europe) but that these regions adopted agriculture from their neighbours rather than being replaced by them.

I. LINGUISTIC RECONSTRUCTION AND ARCHAEOLOGICAL TIMELINE

The *Manual de Lingüística Indoeuropea* (Adrados, Bernabé, Mendoza, 1998) makes a summary of main linguistic facts, supported by archaeological finds: “Remember the recent date of the ‘cristalization’ of European languages. ‘Old European’ [=North-West Indo-European], from which they derive, is an already evolved language, with opposition masculine/feminine, and must be located in time ca. 2000 BC or before. Also, one must take into account the following data: the existence of Tocharian, related to IE IIb [=Northern PIE], but far away to the East, in the Chinese Turkestan; the presence of IE IIb [=Graeco-Aryan] languages to the South of the Carpathian Mountains, no doubt already in the 3rd millennium (the ancestors of Thracian, Iranian, Greek speakers); differentiation of Hittite and Luwian, within the Anatolian group, already ca. 2000 BC, in the documents of Kültepe, what means that Common Anatolian must be much older.

NOTE. Without taking on account archaeological theories, linguistic data reveals that:

- a) IE IIb, located in Europe and in the Chinese Turkestan, must come from an intermediate zone, with expansion into both directions.
- b) IE IIIa, which occupied the space between Greece and the Northwest of India, communicating both Paeninsulas through the languages of the Balkans, Ukraine and Northern Caucasus, the Turkestan and Iran, must also come from some intermediate location. Being a different linguistic group, it cannot come from Europe or the Russian Steppe, where Ural-Altaic languages existed.
- c) Both groups have been in contact secondarily, taking on account the different ‘recent’ isoglosses in the contact zone.
- d) The more archaic Anatolian must have been isolated from the more evolved IE; and that in some region with easy communication with Anatolia.

(...) Only the Steppe North of the Caucasus, the Volga river and beyond can combine all possibilities mentioned: there are pathways that go down into Anatolia and Iran through the Caucasus, through the East of the Caspian Sea, the Gorgan plains, and they can migrate from there to the Chinese Turkestan, or to Europe, where two ways exist: to the North and to the South of the Carpathian mountains.

NOTE. For Kortlandt (1989), too, “Starting from the linguistic evidence (...) The best candidate for the original IE homeland is the territory of the Sredny Stog culture in the eastern Ukraine”.

1. Introduction

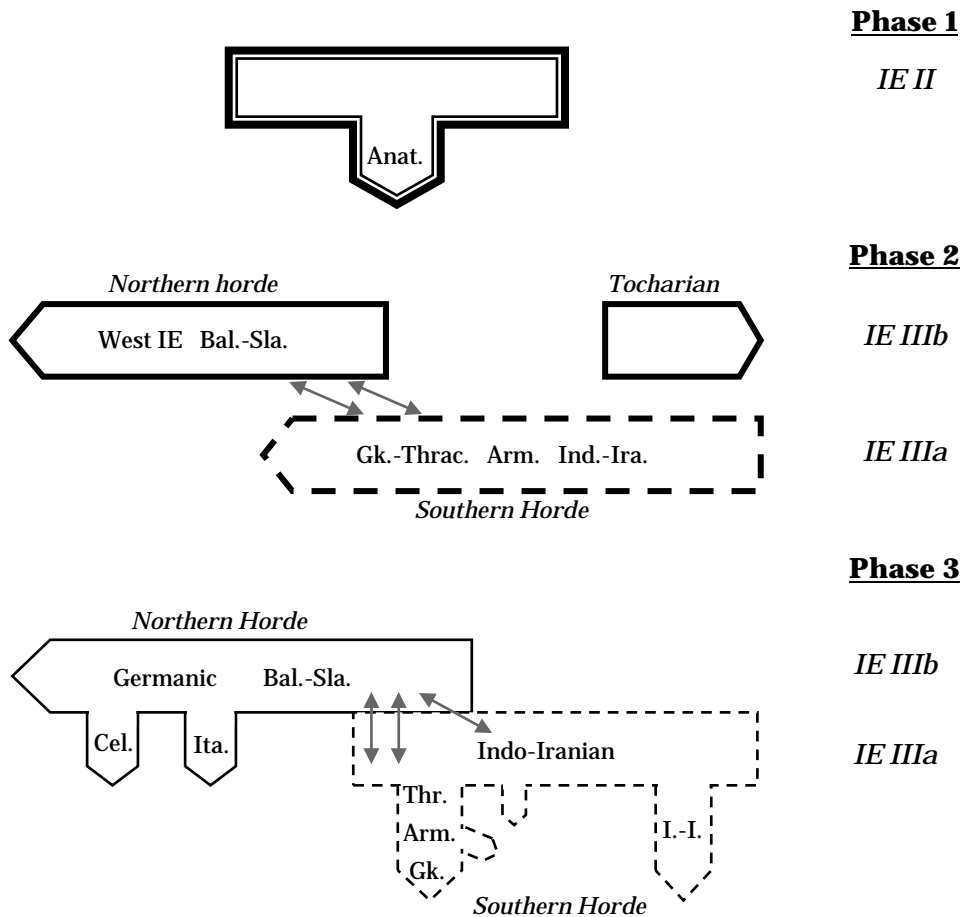


Diagram of the expansion and relationships of IE languages, Adrados (1979).

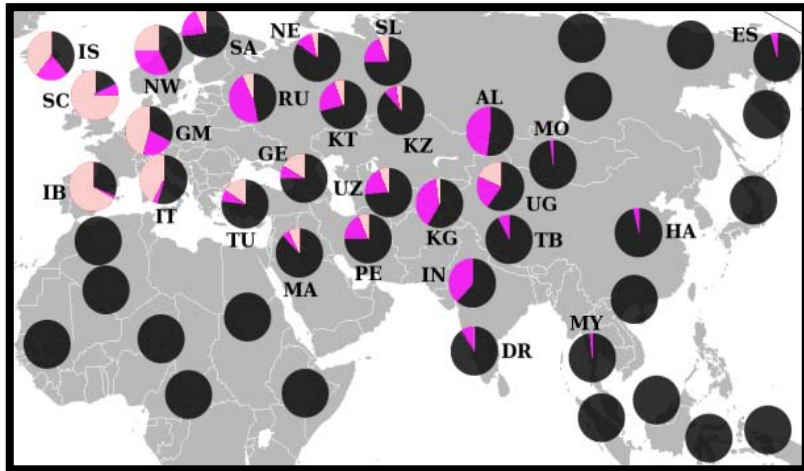
These linguistic data, presented in a diagram, are supported by strong archaeological arguments: they have been defended by Gimbutas 1985 against Gamkrelidze-Ivanov (...). This diagram proposes three phases. In the first one, IE II [=Middle PIE] became isolated, and from it Anatolian emerged, being first relegated to the North of the Caucasus, and then crossing into the South: there must Common Anatolian be located. Note that there is no significant temporal difference with the other groups; it happens also that the first IE wave into Europe was older. It is somewhere to the North of the people that later went to Anatolia that happened the great revolution that developed IE III [=Late PIE], the 'common language'.

The following phases refer to that common language. The first is that one that saw both IE III B [=Northern IE] (to the North) and IE III A [=Southern IE] (to the South), the former being fragmented in two groups, one that headed West and one that migrated to the East. That is a proof that somewhere in the European Russia a common language III B emerged; to the South, in Ukraine or in the Turkestan, IE III A.

The second phase continues the movements of both branches, that launched waves to the South, but that were in contact in some moments, arising isoglosses that unite certain languages of the IE IIIa group (first Greek, later Iranian, etc.) with those of the rearguard of IE IIIb (especially Baltic and Slavic, also Italic and Germanic)”.

II. ARCHEOGENETICS AND INDO-EUROPEAN MIGRATIONS

Cavalli-Sforza and Alberto Piazza argue that Renfrew (v.i.) and Gimbutas reinforce rather than contradict each other, stating that “genetically speaking, peoples of the Kurgan steppe descended at least in part from people of the Middle Eastern Neolithic who immigrated there from Turkey”.



Distribution of haplotypes R1b (light color) for Eurasiatic Paleolithic and R1a (dark color) for Yamna expansion; black represents other haplogroups.

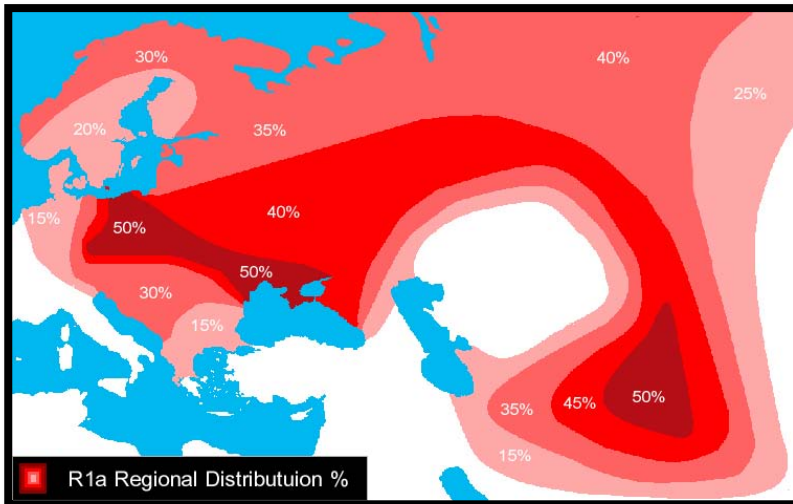
NOTE. The genetic record cannot yield any direct information as to the language spoken by these groups. The current interpretation of genetic data suggests a strong genetic continuity in Europe; specifically, studies of mtDNA by Bryan Sykes show that about 80% of the genetic stock of Europeans originated in the Paleolithic.

Spencer Wells suggests that the origin, distribution and age of the R1a1 haplotype points to an ancient migration, possibly corresponding to the spread by the Kurgan people in their expansion across the Eurasian steppe around 3000 BC, stating that “there is nothing to contradict this model, although the genetic patterns do not provide clear support either”.

NOTE. R1a1 is most prevalent in Poland, Russia, and Ukraine, and is also observed in Pakistan, India and central Asia. R1a1 is largely confined east of the Vistula gene barrier and drops considerably to the west. The spread of Y-chromosome DNA haplogroup R1a1 has been associated with the spread of the Indo-European languages too. The mutations that characterize haplogroup R1a occurred ~10,000 years bp.

1. Introduction

Haplogroup R1a1, whose lineage is thought to have originated in the Eurasian Steppes north of the Black and Caspian Seas, is therefore associated with the Kurgan culture, as well as with the postglacial Ahrensburg culture which has been suggested to have spread the gene originally.

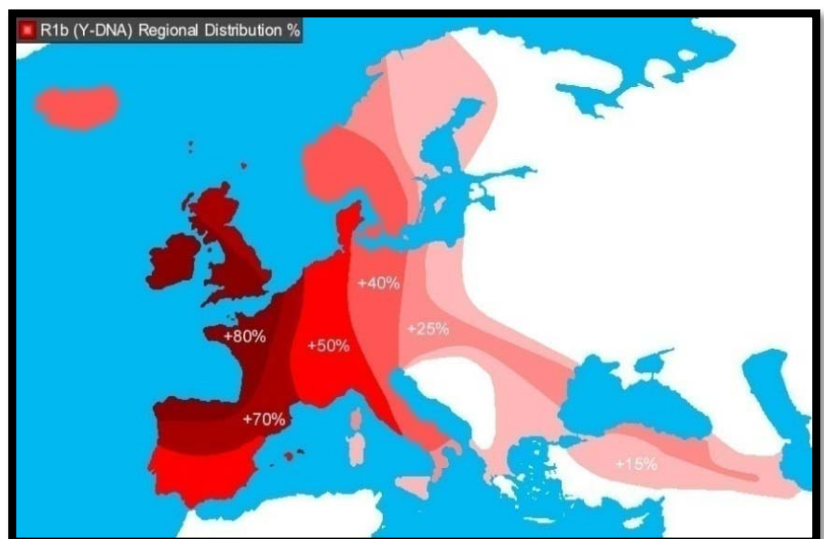


The present-day population of R1b haplotype, with extremely high peaks in Western Europe and measured up to the eastern confines of Central Asia, are believed to be the descendants of a refugium in the

Iberian peninsula (Portugal and Spain) at the Last Glacial Maximum, where the haplogroup may have achieved genetic homogeneity. As conditions eased with the Allerød Oscillation in about 12000 BC, descendants of this group migrated and eventually recolonised all of Western Europe, leading to the dominant position of R1b in variant degrees from Iberia to Scandinavia, so evident in haplogroup maps.

NOTE. High concentrations of Mesolithic or late Paleolithic YDNA haplogroups of types R1b (typically well above 35%) and I (up to 25%), are thought to derive ultimately of the robust

Eurasian Cro
Magnoid homo sapiens
of the Aurignacian
culture, and the
subsequent gracile
leptodolichomorphous
people of the
Gravettian culture that
entered Europe from
the Middle East
20,000 to 25,000
years ago, respectively.



III. THE KURGAN HYPOTHESIS AND THE THREE-STAGE THEORY

ARCHAEOLOGY (Kurgan Hypothesis)	LINGUISTICS (Three-Stage Theory)
<i>ca. 4500-4000 BC. Sredny Stog, Dnieper-Donets and Sarama cultures, domestication of the horse.</i>	<i>Early PIE spoken, probably somewhere in the Pontic-Caspian Steppe.</i>
<i>ca. 4000-3500 BC. The Yamna culture, the kurgan builders, emerges in the steppe, and the Maykop culture in northern Caucasus.</i>	<i>Middle PIE. Pre-IE III and Pre-Proto-Anatolian dialects evolve in different communities but presumably still in contact</i>
<i>ca. 3500-3000 BC. Yamna culture at its peak: stone idols, two-wheeled proto-chariots, animal husbandry, permanent settlements and hillforts, subsisting on agriculture and fishing, along rivers. Contact of the Yamna culture with late Neolithic Europe cultures results in kurganized Globular Amphora and Baden cultures. Maykop culture shows earliest evidence of the beginning Bronze Age; bronze weapons and artifacts introduced.</i>	<i>Proto-Anatolian becomes isolated south of the Caucasus, and has no more contacts with the linguistic innovations of the common Late PIE language.</i>
<i>ca. 3000-2500 BC. The Yamna culture extends over the entire Pontic steppe. The Corded Ware culture extends from the Rhine to the Volga, corresponding to the latest phase of IE unity. Different cultures disintegrate, still in loose contact, enabling the spread of technology.</i>	<i>Late PIE evolves into dialects, at least a Southern and a Northern one. Dialectal communities remain still in contact, enabling the spread of phonetic and morphological innovations, and loan words. Pan, spoken in Asia Minor, evolves into Common Anatolian.</i>
<i>ca. 2500-2000 BC. The Bronze Age reaches Central Europe with the Beaker culture of Northern Indo-Europeans. Indo-Iranians settle north of the Caspian in the Sintashta-Petrovka and later the Andronovo culture.</i>	<i>The breakup of the southern IE dialects is complete. Proto-Greek spoken in the Balkans; Proto-Indo-Iranian in Central Asia; North-West Indo-European in Northern Europe; Common Anatolian dialects in Anatolia.</i>
<i>ca. 2000-1500 BC. The chariot is invented, leading to the split and rapid spread of Iranians and other peoples from the Andronovo culture and the Bactria-Margiana Complex over much of Central Asia, Northern India, Iran and Eastern Anatolia. Greek Darg Ages and flourishing of the Hittite Empire. Pre-Celtic Unetice culture.</i>	<i>Indo-Iranian splits up in two main dialects, Indo-Aryan and Iranian. European proto-dialects like Germanic, Celtic, Italic, and Balto-Slavic differentiate from each other. Anatolian languages like Hittite and Luwian are written down; Indo-Iranian attested through Mitanni; a Greek dialect, Mycenaean, is already spoken.</i>
<i>ca. 1500-1000 BC. The Nordic Bronze Age sees the rise of the Germanic Urnfield and the Celtic Hallstatt cultures in Central Europe, introducing the Iron Age. Italic peoples move to the Italian Peninsula. Rigveda is composed. The Hittite Kingdoms and the Mycenaean civilization decline.</i>	<i>Germanic, Celtic, Italic, Baltic and Slavic are already different proto-languages, developing in turn different dialects. Iranian and other related southern dialects expand through military conquest, and Indo-Aryan spreads in the form of its sacred language, Sanskrit.</i>
<i>ca. 1000-500 BC. Northern Europe enters the Pre-Roman Iron Age. Early Indo-European Kingdoms and Empires in Eurasia. In Europe, Classical Antiquity begins with the flourishing of the Greek peoples. Foundation of Rome.</i>	<i>Celtic dialects spread over Western Europe, German dialects to the south of Jutland. Italic languages in the Italian Peninsula. Greek and Old Italic alphabets appear. Late Anatolian dialects. Cimmerian, Scythian and Sarmatian in Asia, Palaeo-Balkan languages in the Balkans.</i>

1.5. OTHER LINGUISTIC AND ARCHAEOLOGICAL THEORIES

1.5.1. A common development of new hypotheses has been to revise the Three-Stage assumption. It is actually not something new, but the come back to more traditional views, reinterpreting the new findings of the Hittite scripts, trying to insert Anatolian into the old, static PIE concept.

1.5.2. The most known new alternative theory concerning PIE is the Glottalic theory. It assumes that Proto-Indo-European was pronounced more or less like Armenian, i.e. instead of PIE **p*, **b*, **b^h*, the pronunciation would have been **p'*, **p*, **b*, and the same with the other two voiceless-voiced-voiced aspirated series of consonants. The IE *Urheimat* would have been then located in the surroundings of Anatolia, especially near Lake Urmia, in northern Iran, hence the archaism of Anatolian dialects and the glottalics found in Armenian.

NOTE. Those linguistic and archaeological findings are supported by Th. Gamkredlize-V. Ivanov (1990: “*The early history of Indo-European languages*”, *Scientific American*, where early Indo-European vocabulary deemed “of southern regions” is examined, and similarities with Semitic and Kartvelian languages are also brought to light. This theory has been criticized by Meid (1989)

1.5.3. Alternative theories include:

I. The *European Homeland thesis* maintains that the common origin of the IE languages lies in Europe. These theses are more or less driven by Archeological. A. Häusler (1981, 1986, 1992) continues to defend the hypothesis that places Indo-European origins in Europe, stating that all the known differentiation emerged in the *continuum* from the Rhin to the Urals.

NOTE. It has been traditionally located in 1) *Lithuania* and the surrounding areas, by R.G. Latham (1851) and Th. Poesche (1878: *Die Arier. Ein Beitrag zur historischen Anthropologie*, Jena); 2) *Scandinavia*, by K.Penka (1883: *Origines ariacae*, Viena); 3) *Central Europe*, by G. Kossinna (1902: “*Die Indogermanische Frage archäologisch beantwortet*”, *Zeitschrift für Ethnologie*, 34, pp. 161-222), P.Giles (1922: *The Aryans*, New York), and by linguist/archaeologist G. Childe (1926: *The Aryans. A Study of Indo-European Origins*, London).

a. The *Old European* or *Alteuropäisch Theory* compares some old European vocabulary (especially river names), which would be older than the spread of Late PIE dialects through Northern Europe. It points out the possibility of an older, pre-IE III

spread of IE, either of IE II or I or maybe some other Pre-IE dialect. It is usually related to the PCT and Renfrew's NDT.

b. The *Paleolithic Continuity Theory* posits that the advent of IE languages should be linked to the arrival of *Homo sapiens* in Europe and Asia from Africa in the Upper Paleolithic. The PCT proposes a continued presence of Pre-IE and non-IE peoples and languages in Europe from Paleolithic times and allowing for minor invasions and infiltrations of local scope, mainly during the last three millennia.

NOTE. There are some research papers concerning the PCT available at <<http://www.continuitas.com/>>. Also, the PCT could in turn be connected with Frederik Kortlandt's Indo-Uralic and Altaic studies <<http://kortlandt.nl/publications/>> – although they could also be inserted in Gimbutas' early framework.

On the temporal relationship question, Mallory & Adams (2006): "How early a solution is admitted depends on individual decisions regarding the temporally most diagnostic vocabulary. That the vocabulary is clearly one reflecting at least a Neolithic economy and technology, i.e. domesticated plants and animals, ceramics, means that it cannot be set anywhere on this planet prior to c. 8000 BC. Although there are still those who propose solutions dating back to the Palaeolithic, these cannot be reconciled with the cultural vocabulary of the Indo-European languages. The later vocabulary of Proto-Indo-European hinges on such items as wheeled vehicles, the plough, wool, which are attested in Proto-Indo-European, including Anatolian. It is unlikely then that words for these items entered the Proto-Indo-European lexicon prior to about 4000 BC. This is not necessarily a date for the expansion of Indo-European since the area of Proto-Indo-European speech could have already been in motion by then and new items with their words might still have passed through the continuum undetected, i.e. treated as inheritances rather than borrowings. All that can be concluded is that if one wishes to propose a homeland earlier than about 4000 bc, the harder it is to explain these items of vocabulary".

c. The PCT is, in turn, related to the theories of a *Neolithic revolution* causing the peacefully spreading of an older pre-IE language into Europe from Asia Minor from around 7000 BC, with the advance of farming. It proposes that the dispersal (discontinuity) of Proto-Indo-Europeans originated in Neolithic Anatolia.

NOTE. Reacting to criticism, Renfrew by 1999 revised his proposal to the effect of taking a pronounced Indo-Hittite position. Renfrew's revised views place only Pre-Proto-Indo-European in 7th millennium BC Anatolia, proposing as the homeland of Proto-Indo-European proper the Balkans around 5000 BC, explicitly identified as the "Old European culture" proposed by Gimbutas.

1. Introduction

As of 2005, Colin Renfrew seems to support the PCT designs and the usefulness of the Paleolithic assumptions. He co-authored a paper concluding: *Our finding lends weight to a proposed Paleolithic ancestry for modern Europeans* The above quotation coming as results of archaeogenetic research on mtDNA where 150 x greater N1a frequency was found. The first European farmers are descended from a European population who were present in Europe since the Paleolithic and not coming as a wave of Neolithic migration as proposed in Renfrew's NDT.

Talking about these new (old) theories, Adrados (1998) makes an interesting remark about the relevance that is – wrongly – given to each new personal archaeological 'revolutionary' theory: "[The hypothesis of Colin Renfrew (1987)] is based on ideas about the diffusion of agriculture from Asia to Europe in [the 5th millennium Neolithic Asia Minor], diffusion that would be united to that of Indo-Europeans; it doesn't pay attention at all to linguistic data. The [hypothesis of Gamkrelidze-Ivanov (1980, etc.)], which places the Homeland in the contact zone between Caucasian and Semitic peoples, south of the Caucasus, is based on real or supposed lexical loans; it disregards morphological data altogether, too. Criticism of these ideas – to which people have paid too much attention – are found, among others, in Meid (1989), Villar (1991), etc."

II. Another hypothesis, contrary to the European ones, also mainly driven today by a nationalistic view, traces back the origin of PIE to Vedic Sanskrit, postulating that it is very *pure*, and that the origin of common Proto-Indo-European can thus be traced back to the Indus Valley Civilization of ca. 3000 BC.

NOTE. Such Pan-Sanskritism was common among early Indo-Europeanists, as Schlegel, Young, A. Pictet (1877: *Les origines indoeuropéens*, Paris) or Schmidt (who preferred Babylonia), but are now mainly supported by those who consider Sanskrit almost equal to Late Proto-Indo-European. For more on this, see S. Misra (1992: *The Aryan Problem: A Linguistic Approach*, Delhi), Elst's *Update on the Aryan Invasion Debate* (1999), followed up by S.G. Talageri's *The Rigveda: A Historical Analysis* (2000), both part of "Indigenous Indo-Aryan" viewpoint by N. Kazanas, the "Out of India" theory, with a framework dating back to the times of the Indus Valley Civilization.

III. The Black Sea deluge theory dates the origin of the expansion of IE dialects in the genesis of the Sea of Azov, ca. 5600 BC, which would in turn be related to the deluge myth, which would have remained in oral tails until its description in the biblical story of Noah's Ark, the Hindu Puranic story of Manu, through Deucalion in Greek mythology or Utnapishtim in the Epic of Gilgamesh. This date is generally considered as rather early for the PIE spread under frameworks which include the *Urheimat* near the Black Sea.

NOTE. W.Ryan and W.Pitman published evidence that a massive flood through the Bosphorus occurred about 5600 BC, when the rising Mediterranean spilled over a rocky sill at the Bosphorus. The event flooded 155,000 km² of land and significantly expanded the Black Sea shoreline to the north and west. This has been connected with the fact that some Early Modern scholars based on Genesis 10:5 had assumed that the 'Japhetite' languages (instead of the 'Semitic' ones) are rather the direct descendants of the Adamic language, having separated before the confusion of tongues, by which also Hebrew was affected. That was claimed by *Blessed* Anne Catherine Emmerich (18th c.), who stated in her private revelations that the purest descendants of the Adamic language were the main Proto-Indo-European dialects, *v.i.*

1.6. RELATIONSHIP TO OTHER LANGUAGES

1.6.1. Many higher-level relationships between PIE and other language families have been proposed. But these speculative connections are highly controversial. Perhaps the most widely accepted proposal is of an Indo-Uralic family, encompassing PIE and Proto-Uralic, a language from which Hunarian, Finnish, Estonian, Saami and a number of other languages belong. The evidence usually cited in favor of this is the proximity of the proposed *Urheimaten* for both of them, the typological similarity between the two languages, and a number of apparent shared morphemes.

NOTE. Other proposals, further back in time (and correspondingly less accepted), model PIE as a branch of Indo-Uralic with a Caucasian substratum; link PIE and Uralic with Altaic and certain other families in Asia, such as Korean, Japanese, Chukotko-Kamchatkan and Eskimo-Aleut (representative proposals are Nostratic and Joseph Greenberg's Eurasiatic); etc.

1.6.2. Indo-Uralic or Uralo-Indo-European is therefore a hypothetical language family consisting of Indo-European and Uralic (i.e. Finno-Ugric and Samoyedic). Most linguists still consider this theory speculative and its evidence insufficient to conclusively prove genetic affiliation.

NOTE. Dutch linguist Frederik Kortlandt supports a model of Indo-Uralic in which its speakers lived north of the Caspian Sea, and Proto-Indo-Europeans began as a group that branched off westward from there to come into geographic proximity with the Northwest Caucasian languages, absorbing a Northwest Caucasian lexical blending before moving farther westward to a region north of the Black Sea where their language settled into canonical Proto-Indo-European.

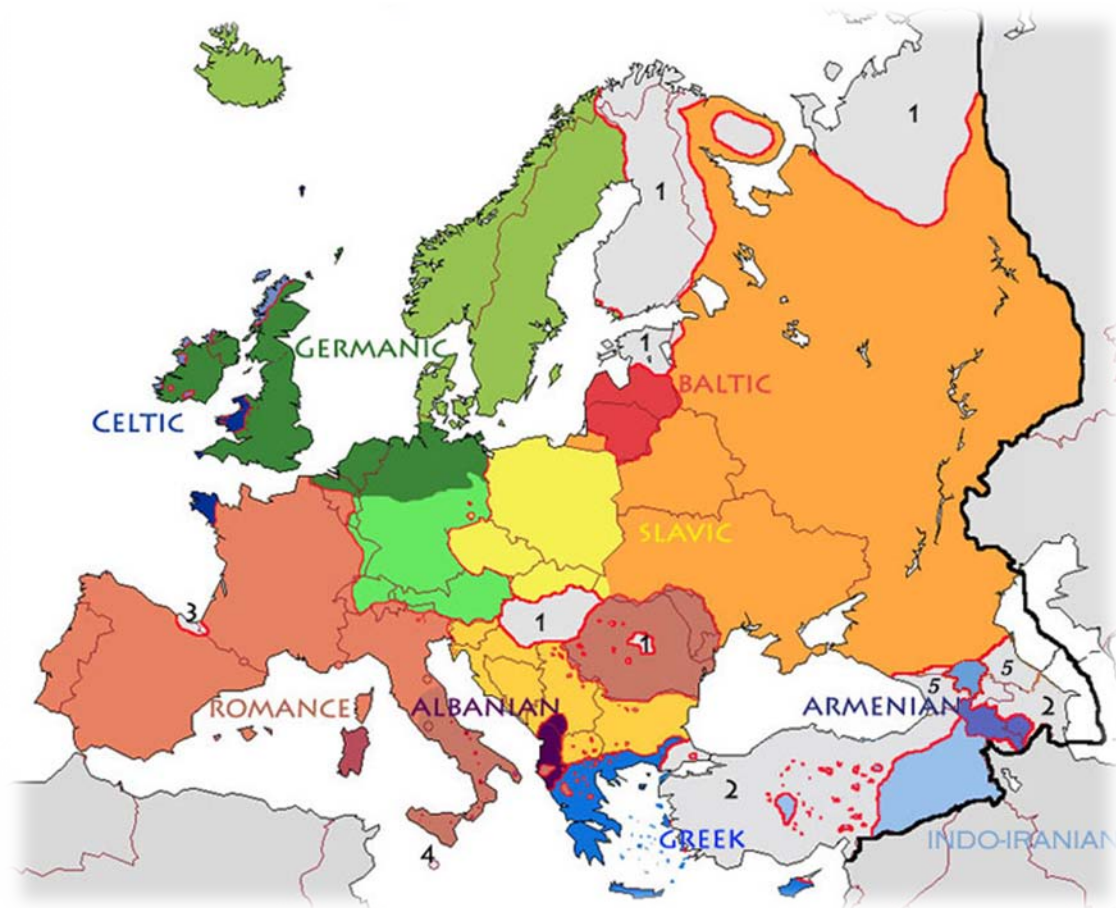
1. Introduction

The problem with lexical evidence is to weed out words due to borrowing, because Uralic languages have been in contact with Indo-European languages for millennia, and consequently borrowed many words from them.

1.6.3. The most common arguments in favour of a relationship between Early PIE and Uralic are based on seemingly common elements of morphology, such as:

Meaning	Early PIE	Proto-Uralic
"I, me"	* <i>me</i> , "me" (Acc.), * <i>mene</i> , "my" (Gen.)	* <i>mun</i> , * <i>mina</i> , "I"
"you" (sg)	* <i>tu</i> (Nom.), * <i>twe</i> (Acc.), * <i>tewe</i> "your" (Gen.)	* <i>tun</i> , * <i>tina</i>
1st P. singular	*- <i>m</i>	*- <i>m</i>
1st P. plural	*- <i>me</i>	*- <i>me</i>
2nd P. singular	*- <i>s</i> (active), *- <i>tHa</i> (perfect)	*- <i>t</i>
2nd P. plural	*- <i>te</i>	*- <i>te</i>
Demonstrative	* <i>so</i> , "this, he/she" (animate nom)	* <i>ša</i> (3rd person singular)
Interr. pron. (An.)	* <i>kwi-</i> , "who?, what?"; * <i>kwo-</i> , "who?, what?"	* <i>ken</i> , "who?", * <i>ku-</i> , "who?"
Relative pronoun	* <i>jo-</i>	*- <i>ja</i> (nomen agentis)
Accusative	*- <i>m</i>	*- <i>m</i>
Ablative/partitive	*- <i>od</i>	*- <i>ta</i>
Nom./Acc. plural	*- <i>es</i> (Nom. pl.), *- <i>m̥-s</i> (Acc. pl.)	*- <i>t</i>
Oblique plural	*- <i>i</i> (pronominal pl., cf. we-i- "we", to-i- "those")	*- <i>i</i>
Dual	*- <i>H₁</i>	*- <i>k</i>
Stative	*- <i>s-</i> (aorist); *- <i>es-</i> , *- <i>t</i> (stative substantive)	*- <i>ta</i>
Negative particle	* <i>nei</i> , * <i>ne</i>	* <i>ei-</i> [negative verb] , * <i>ne</i>
"to give"	* <i>deh₃-</i>	* <i>toHe-</i>
"to wet", "water"	* <i>wed-</i> , "to wet", * <i>wod_ṛ-</i> , "water"	* <i>weti</i> , "water"
"water"	* <i>mesg-</i> , "dip under water, dive"	* <i>muške-</i> , "wash"
"to assign", "name"	* <i>nem-</i> , "to assign, to allot", * <i>h₁nom_ṛ-</i> , "name"	* <i>nimi</i> , "name"
"metal"	* <i>h₂weseh₂-</i> , "gold"	* <i>waške</i> , "some metal"
"trade"	* <i>mei-</i> , "exchange"	* <i>miHe-</i> , "give, sell"
"fish"	* <i>(s)k^walo-</i> , "large fish"	* <i>kala</i> , "fish"
"sister-in-law"	* <i>galou-</i> , "husband's sister"	* <i>käl₃</i> , "sister-in-law"
"much"	* <i>polu-</i> , "much"	* <i>palj₃</i> , "thick, much"

1.7. INDO-EUROPEAN DIALECTS



Languages of Europe. The black line divides the zones traditionally (or politically) considered inside the European subcontinent. Northern dialects are all but Greek and Kurdish (Iranian); Armenian is usually considered a Graeco-Aryan dialect, while Albanian is usually classified as a Northern one. Numbered inside the map, non-Indo-European languages: 1) Uralic languages; 2) Turkic languages; 3) Basque; 4) Maltese; 5) Caucasian languages.

SCHLEICHER'S FABLE: FROM PIE TO MODERN ENGLISH

The so-called *Schleicher's fable* is a poem composed in PIE, published by August Schleicher in 1868, originally named "*The Sheep and the Horses*". It is written here in the different reconstructible IE dialects for comparison.

The immediate parent dialect of each proto-language is enclosed in parentheses.

1. Introduction

A Common PIE version (ca. 3500 BC?): H_3owis $h_1ekw\tilde{o}s$ - k^we . • H_3owis , k^wesjo $w\tilde{h}_1neh_2$ ne h_1est , • $h_1ekwoms$ $spek\acute{e}t$, • h_1oinom $g^w\tilde{r}h_3\acute{u}m$ $wogh^om$ $w\acute{e}g^hontm$, • h_1oinom - k^we $megeh_2m$ $b^h\acute{o}rom$, • h_1oinom - k^we $d^h\tilde{h}_1g^h\acute{o}monm$ h_1oh_1ku $b^h\acute{e}rontm$. • H_3owis nu $h_1\acute{e}kwob^hjos$ $weuk^w\acute{e}t$: • “ $K\tilde{r}d$ $h_2\acute{e}g^hnutoi$ h_1moi , • $h_1ekwoms$ $h_2\acute{e}gontm$ $wih_1r\acute{o}m$ $w\acute{id}nt\acute{e}i$ ”. • $H_1ekw\tilde{o}s$ tu $weuk^w\acute{o}nt$: “ $Klud^hi$, h_3owi ! • $k\tilde{r}d$ $h_2\acute{e}g^hnutoi$ $\eta sm\acute{e}i$ $w\acute{id}ntb^hjos$: • h_2ner , $potis$, h_3owjom - r $w\tilde{h}_1neh_2m$ • $sweb^hei$ $g^whermom$ $westrom$ $k^w\tilde{r}neuti$ ”. • H_3owjom - k^we $w\tilde{h}hneh_2$ ne h_1esti . • Tod $k\acute{e}kluwos$ h_3owis h_2egrom $b^hug\acute{e}t$.

Common Anatolian (PAN), 2500 BC	Europe's IE (IE IIb), ca. 2500 BC
Howis ekwōs-k ^w e.	Owis ekwōs-k ^w e.
Howis, k ^w esjo w ^l neh ne est,	Owis, k ^w esjo w ^l nā ne est,
ekwons spekét,	ekwons spekét,
oikom g ^w rrúm wogom wégontm,	oinom g ^w rum wogh ^o m wég ^h ontm,
oikom-k ^w e megeh ^m borom,	oinom-k ^w e megām b ^h orom,
oikom-k ^w e dgomonm oku bérontm.	oinom-k ^w e d ^h ghomonm ōkú b ^h érontm.
Howis nu ékwobos wūk ^w ét:	Owis nu ékwob ^h os weuk ^w ét:
“K ^l rdi xég ⁿ utor moi,	“K ^l rdi ág ^h nutoi moi,
ekwons xégontm wiróm wídntę”.	ekwons ágontm wíróm wídnt ^{ei} ”.
Ekwōs tu weuk ^w ónt: “Kludí, howi!	Ekwōs tu weuk ^w ónt: “Klud ^{hi} , owi!
kr ^d i heg ⁿ utor nsme wídntbos:	kr ^d i ág ^h nutoi ns ^m éi wídntb ^h jos:
hner, potis, howjom-r w ^l nehm	ner, potis, owjom-r w ^l nām
swebę g ^w ermom wéstrom k ^w rnūdi”.	seb ^h ei g ^{wh} ormom westrom k ^w rneuti”.
Howjom-k ^w e w ^l neh ne esti.	Owjom-k ^w e w ^l nā ne esti.
Tod kékluwos howis hegrom bugét.	Tod kékluwos owis agrom b ^h ugét.

Proto-Aryan (IE IIIa), ca. 2500 BC	Proto-Greek (IE IIIa), ca. 2500 BC
Awis akwās-ka.	Owis ekwoi-k ^w e.
Awis, kasja w ^l nā na āst,	Ówis, k ^w eho w ^l nā ne ēst,
akwans spa ^k át,	ekwons spekét,
aikam grúm wag ^h am wág ^h antm,	oiwom k ^{wh} rum wok ^h om wek ^h ontm,
aikam-ka mag ^h am b ^h aram,	oiwom-k ^w e megām p ^h orom,
aikam-ka d ^h ghámanm āku b ^h arantm.	oiwom-k ^w e k ^h thómonm ōku p ^h érontm.
Awis nu ákwab ^h jas áwaukat:	Ówis nu ékwop ^h os éweuk ^w et:
“K ^l rdi ág ^h nutai mai,	“K ^l rdi ág ^h nutoi moi,
akwans a ^g antam wírám wídntai”.	ekwons ágontm wíróm wídnt ^{ei} ”.
Ákwās tu áwawkant: “K ^l rud ^{hi} avi!	Ékwoi tu éwewek ^w ont: “Klut ^{hi} , owi!
kr ^d ág ^h nutai ns ^m ái wídntb ^h jas:	kr ^d ág ⁿ utoi ns ^m éi wídntp ^h os:
nar, patis, awjam-r w ^l nām	anér, potis, owjom-r w ^l nām
swab ^h i g ^h armam wastram kr ⁿ nauti”.	sep ^h ei k ^{wh} ermom westrom k ^w rneuti”.
Awjam-ka w ^l nā na asti.	Owjom-k ^w e w ^l nā ne esti.
Tat kákr ^u was awis a ^g ram áb ^h ugat.	Tot kékluwos owis agrom ép ^h uget.

Proto-Celtic (ca. 1000 BC)	Proto-Italic (ca. 1000 BC)
Owis ek ^w oi-k ^w e.	Owis ekwoi-k ^w e.
Owis, k ^w esjo wlānā ne est,	Owis, k ^w esjo wlānā ne est,
ek ^w ōs spekét,	ekwōs spekét,
oinom barúm woxom wéxontam,	oinom grāwúm woxom wéxontem,
oinom-k ^w e megam borom,	oinom-k ^w e megam φorom,
oinom-k ^w e dxonom āku berontam.	oinom-k ^w e xomonem ōku φerontem.
Owis nu ék ^w obos weuk ^w ét:	Owis nu ékwoφos weuk ^w ét:
“Kridi áxnutor mai,	“Kordi axnutor mei,
ek ^w ōs ágontom wíróm wídanti”.	ekwōs ágontom wíróm wídensei”.
Ek ^w oi tu wewk ^w ónt: “Kludi, owi!	Ekwoi tu wewk ^w ónt: “Klupi, owi!
kridi áxnutor ansméi wídanbjos:	kordi axnutor ensméi wídenseφos:
ner, φotis, owjom-ar wlānām	ner, potis, owjom-or wlānām
sebi g ^w ormom westrom k ^w arneuti”.	sepei g ^h ormom westrom k ^w orneuti”.
Owjom-k ^w e wlānā ne esti.	Owjom-k ^w e wlānā ne esti.
Tod kéklowos owis agrom bugét.	Tud kékluwos owis agrom φugít.

Pre-Proto-Germanic (ca. 1000 BC)	Proto-Balto-Slavic (ca. 1000 BC)
Awiz exwaz-x ^w e.	Awis ekwōs-ke.
Awiz, h ^w es wulnō ne est,	Awis, kesja wilnā ne est,
ehwanz spexét,	ekwas spekét,
ainan karún wagan wéganðun,	ainan grun wağan wégantun,
ainan-x ^w e mekon baran,	ainan-ke meğan baran,
ainan-x ^w e gúmanan āxu bérandūn.	ainan-ke ġumanan ōķu bérantun
Awiz nu éxwamaz weux ^w éd:	Awis nu ekwamas wjaukét:
“Hurti ágnuðai mei,	“Kirdi ágnutei mei,
exwanz ákanðun werán wítanðī”.	ekwans ágantun wirán wíduntei”.
Exwaz tu wewx ^w ant: “Hludi, awi!	Ekwōs tu wjaukunt: “Kludi, awi!
hurti áknuðai unsmí wítunðmaz:	kirdi ágnutei insméi wídūntmas:
ner, fapiz, awjan-aur wulnōn	ner, patis, awjam-ir wilnān
sibī warman wespran h ^w urneupi”.	sebi gormom westran kirnjautī”.
Awjan-x ^w e wulnō ne isti.	Áwjam-ke wilnā ne esti.
Pat héxluwaz awiz akran bukép.	Ta kéķluwas awis agram bugít.

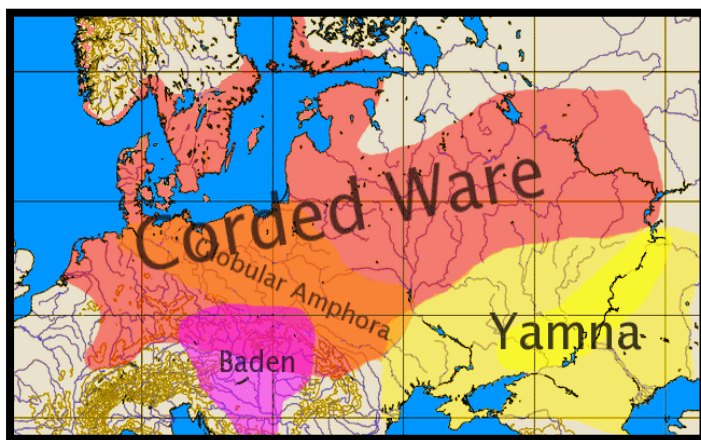
Translation: « *The Sheep and the Horses*. • A sheep that had no wool • saw horses, • one pulling a heavy wagon, • one carrying a big load, • and one carrying a man quickly. • The sheep said to the horses: “My heart pains me, • seeing a man driving horses”. • The horses said: “Listen, sheep, • our hearts pain us when we see this: • a man, the master, makes the wool of the sheep • into a warm garment for himself. • And the sheep has no wool”. • Having heard this, the sheep fled into the plain. »

1.7.1. NORTHERN INDO-EUROPEAN DIALECTS

I. NORTH-WEST OR EUROPE'S INDO-EUROPEAN

The North-West Indo-European dialect *continuum*, also Europe's Indo-European, was spoken in the European Subcontinent in the centuries on either side of 2500 BC, evolving into the Pre-Celtic, Pre-Italic, Pre-Latin (probably within Pre-Italic), Pre-Germanic, Pre-Baltic, Pre-Slavic (or Pre-Balto-Slavic) IE dialects, among others. Its original common location is usually traced back to some place to the East of the Rhine, to the North of the Alps and the Carpathian Mountains, to the South of Scandinavia and to the East of the Eastern European Lowlands or Russian Plain, not beyond Moscow.

The Corded Ware complex of cultures traditionally represents for many scholars the arrival of the first speakers of Northern Dialects in central Europe, coming from the Yamna culture. The complex dates from about 3200-2300 BC. The Globular Amphorae culture may be slightly earlier, but the relation between these cultures remains unclear.



Europe ca. 3200-2300 BC. The Germanic homeland is usually traced back to Jutland and southern Scandinavia; present-day Germany was the homeland for Celtic and Italic; the Eastern zone corresponds to Balto-Slavic. Beekes (1995).

NOTE. According to Adrados (1998), “[o]ne has to distinguish, in this huge geographical space, different locations. We have already talked about the situation of Germans to the West, and by their side, Celtic, Latin and Italic speakers; Balts and Slavs to the East, the former to the North of the later. See, among others, works by Bonfante (1983, 1984), about the old location of Baltic and Slavic-speaking communities. Isoglosses of different chronology let us partially reconstruct the language history. Note that the output obtained with Phonetics and Morphology match up essentially those of Porzig, who worked with Lexica”.

Kortlandt (1989), also considers that “[i]t is possible that the speakers of Italo-Celtic must be assigned to the Globular Amphora culture, and that Germanic grew out of a later component of the Corded Ware horizon (...) The Indo-Europeans who remained after the migrations became speakers of Balto-Slavic. If the speakers of the other *satem* languages can be assigned to the Yamnaya horizon and the western Indo-Europeans to the Corded Ware horizon, it is attractive to assign the ancestors of the Balts and the Slavs to the Middle Dnieper culture [an eastern extension of the Corded Ware culture, of northern Ukraine and Belarus]. If the origin of this culture “is to be sought in the Sredny Stog, Yamnaya and Late Tripolye cultures” and this phase is “followed by a middle period where the classic Corded Ware amphorae and beakers appear” (Mallory 1989: 248), the course of events corresponds nicely with the development of a *satem* language which was drawn into the western Indo-European sphere of influence”. Similarly, Adrados (1980) about the dialectal situation of Slavic (under a linguistic point of view): “To a layer of archaisms, shared or not with other languages (...) Slavic added different innovations, some common to Baltic. Some of them are shared with Germanic, as the oblique cases in -m and feminine participle; others with Indo-Iranian, so *satemization*, *Ruki* sound law (more present in Slavic than in Baltic) (...) Most probably, those common characteristics come from a recent time, from secondary contacts between IE III B [=Northern IE] (whose rearguard was formed by Balto-Slavs) and A [=Southern IE] (in a time when Greeks were not in contact anymore, they had already migrated to Greece)”.

On the archaeological quest for the *Urheimat*, Mallory & Adams (2006) make a complete summary of the different frameworks and models used. About the Retrospective Method, still favoured by many linguists, it is the “method where one examines those archaeological cultures that must have been associated with different Indo-European language groups and attempts to work backwards to the ‘proto-culture’. The unit of analysis here is the so-called ‘archaeological culture’, a classification device employed by archaeologists to deal with similar and geographically confined material culture and behaviour (...) Many of the language groups of Europe, i.e. Celtic, Germanic, Baltic, and Slavic, may possibly be traced back to the Corded Ware horizon of northern, central, and eastern Europe that flourished c. 3200-2300 BC. Some would say that the Iron Age cultures of Italy might also be derived from this cultural tradition. For this reason the Corded Ware culture is frequently discussed as a prime candidate for early Indo-European”.

Italic (with Latin), Celtic and Germanic are usually classified within a common West Indo-European *nucleus*. Balto-Slavic, on the other hand, is usually placed somewhere outside that West IE core, but always in close contact with it, as a North-West Indo-European dialect. Linguists have pointed out language contacts of Italic with Celtic,

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Celtic with Germanic, and Germanic with Balto-Slavic. Southern dialectal isoglosses affect Balto-Slavic and Tocharian, and only partially Germanic and Latin.

NOTE 1. Celtic too shares isoglosses with Southern dialects, according to Meier-Brügger (2003): “Celtic contacts with eastern Indo-Europe are ancient. Compare the case, among others, of relative pronouns, which in Celtic, contrarily to the Italic **kwo-/kwi-*, is represented by **Hio-*, a characteristic that it shares with Greek, Phrygian, Indo-Iranian and Slavic”. Even though classifications of early proto-languages may vary depending on different criteria, they all have a known common origin, which is generally easier to reconstruct than their dialectal groupings. For example, if we had only some texts of Old French, Old Spanish and Old Portuguese, Mediaeval Italian and Modern Romanian and Catalan, then Vulgar Latin (ca. 200 AD) – i.e. the features of the common language spoken by all Romance speakers, not the older, artificial, literary Classical Latin (ca. 100 BC) still less Old Latin (ca. 700 BC) – could be easily reconstructed, but the dialectal groups not. In fact, the actual groupings of the Romance languages are controversial, even knowing well enough Archaic, Classic and Vulgar Latin, and the history of Romance languages. Hence the difficulties in reconstructing and grouping individual North-West IE dialects, but the certainty in reconstructing a common North-West or Europe’s Indo-European language using raw linguistics, better explained if combined with archaeological data.

NOTE 2. On the inclusion of Pre-Latin IE within West Indo-Europe, against it there are some archaeological and linguistic theories (see Szemerényi, Colin Renfrew; v.s. for J.P. Mallory); Polomé (1983) & Schmidt (1984) say innovations common to Celtic and Germanic (later than those common to Celtic, Latin and Germanic), come from a time when Latin peoples had already migrated to the Italian peninsula. On the unity of Proto-Italic and Proto-Latin, Adrados (1998): “dubious is the old unity scheme, no doubt only partial, between Latin and Osco-Umbrian, which has been rejected by famous Italian linguists, relating every coincidence to recent contacts. I am not so sure about that, as the common innovations are big; cf. Beeler 1966, who doesn’t however dispel the doubts. Obviously, according to the decision taken, there are different historical consequences. If one thinks that both linguistic groups come from the North, through the Alps (cf. Tovar 1950), from the end of the 2nd millennium, a previous unity can be proposed. But authors like Devoto (1962) or Szemerényi (1962) made Latin peoples come from the East, through Apulia”. There has been a continued archaeological and (especially) linguistic support by mainstream IE studies to the derivation of Italic (and Latin) from a West Indo-European core, even after critics to the old Italo-Celtic concept (C. Watkins *Italo-Celtic Revisited*, 1963, K.H. Schmidt *Latein und Keltisch*, 1986); see Porzig (1954), Dressler (1971), Tovar (1970), Pisani (1974), Lehmann (1974), Bonfante (1983, 1984), Beekes (1995), Adrados, Bernabé, Mendoza (1998), etc.; on the archaeological question, see Ghirshman (1977), Thomas (1984), Gimbutas (1985), Harall (1995),...

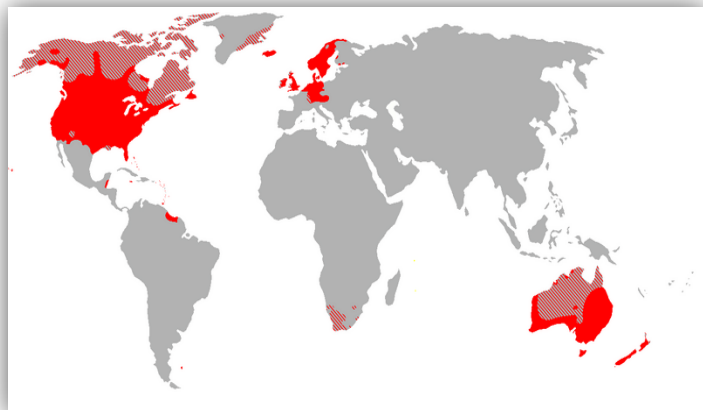
Evolution of the reconstructed laryngeals of Proto-Indo-European in Europe's Indo-European include these vowel colourizations and compensatory lengthenings:

- PIE *H₁, the neutral laryngeal: *h₁a→**a**, *h₁e→**e**, *h₁o→**o**; *ah₁→**ā**, *eh₁→**ē**, *oh₁→**ō**.
- PIE *H₂, the a-colouring laryngeal: *h₂a→**a**, *h₂e→**a**, *h₂o→**a**; *ah₂→**ā**, *eh₂→**ā**.
- PIE *H₃, the o-colouring laryngeal: h₃e→**o**, h₃o→**o**; eh₃→**ō**, oh₃→**ō**.
- Often, but not always, interconsonantal H → **a**; as, *ph₂tér → **patér** (cf. PII pitár).
- PIH *_rH→**ṛ**, *_lH→**ḷ**, *_nH→**ṇ**, *_mH→**m̃**; also, iH→**ī**, uH→**ū**.
- PIH *H before consonants → EIE Ø; cf. PIE *h₁dent-, EIE **dentis** (cf. PGk odōnts), “tooth”; PIE *h₂stér-, EIE **stér** (cf. PGk astér), etc.

NOTE. The question is often made the other way round in IE studies, i.e. “according to these vowels reconstructed for North-West Indo-European, Proto-Greek and Proto-Indo-Iranian, which combination of *laryngeal+vowel* or *vowel+laryngeal* could make them all fit into a common mother-language?” For clarity purposes, Common PIE is taken in this book as example for the phonology of early dialects, but enough certainty in vocalism (for language revival purposes) is to be found only in EIE, PGk and PII; exact regularity or congruence of a common Proto-Indo-European phonology is neither necessary nor searched for, as there are many variations in the laryngeal theories proposed by scholars, who reconstruct from just one (Szemerényi) to eight (Puhvel) or nine (Adrados); a general reconstruction of three laryngeals is used here for its simplicity and wide acceptance today. For more on this see Appendix II.3, The Laryngeal Theory.

A. GERMANIC

The Germanic languages form one of the branches of the Indo-European language family. The largest Germanic languages are English and German, with ca. 340 and some 120 million native speakers, respectively.



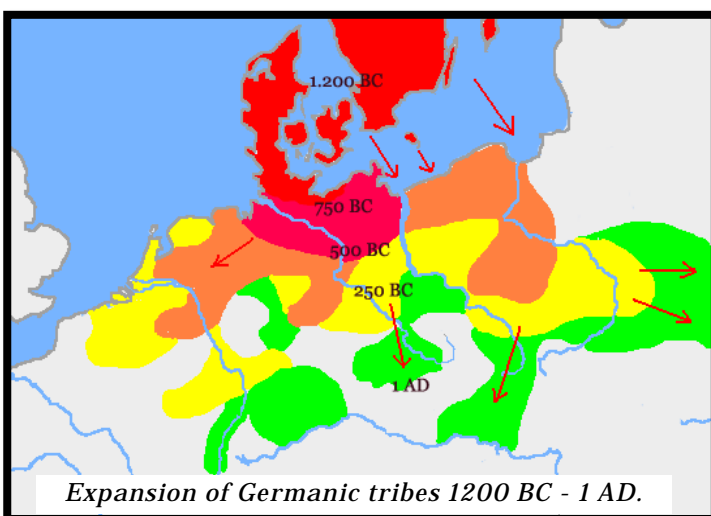
Other significant languages include Low Germanic dialects (like Dutch) and the Scandinavian languages.

Spread of Germanic languages today.

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Their common ancestor is Proto-Germanic, probably still spoken in the mid-1st millennium B.C. in Iron Age Northern Europe, since its separation from an earlier Pre-Proto-Germanic, a dialect of Europe's Indo-European branch dated ca. 1500-500 BC. The succession of archaeological horizons suggests that before their language differentiated into the individual Germanic branches the Proto-Germanic speakers lived in southern Scandinavia and along the coast from the Netherlands in the west to the Vistula in the east around 750 BC. Early Germanic dialects enter history with the Germanic peoples who settled in northern Europe along the borders of the Roman Empire from the 2nd century.

NOTE. A few surviving inscriptions in a runic script from Scandinavia dated to ca. 200 are thought to represent a later stage of Proto-Norse; according to Bernard Comrie, it represents a *Late Common Germanic* which followed the "Proto-Germanic" stage. Several historical linguists have pointed towards the apparent material



and social continuity connecting the cultures of the Nordic Bronze Age (1800-500 BCE) and the Pre-Roman Iron Age (500 BCE - 1 CE) as having implications in regard to the stability and later development of the Germanic language group. Lehmann (1977) writes "Possibly the most important conclusion based on archeological evidence with relevance for linguistic purposes is the assumption of 'one huge cultural area' which was undisturbed for approximately a thousand years, roughly from 1500-500 BC. Such a conclusion in a stable culture permits inferences concerning linguistic stability, which are important for an interpretation of the Germanic linguistic data". Also, on setting the upper boundary of a comprehensive description of Proto-Germanic grammar, Lehmann (2005) wrote: "a grammar of Proto-Germanic must be a description of the language from approximately 2500 BC to the beginning of the common era".

The earliest evidence of the Germanic branch is recorded from names in the 1st century by Tacitus, and in a single instance in the 2nd century BC, on the *Negau helmet*. From roughly the 2nd century AD, some speakers of early Germanic dialects developed the *Elder Futhark*. Early runic inscriptions are also largely limited to personal names, and

difficult to interpret. The Gothic language was written in the Gothic alphabet developed by Bishop Ulfilas for his translation of the Bible in the 4th century. Later, Christian priests and monks who spoke and read Latin in addition to their native Germanic tongue began writing the Germanic languages with slightly modified Latin letters, but in Scandinavia, runic alphabets remained in common use throughout the Viking Age.

The so-called Grimm's law is a set of statements describing the inherited Europe's Indo-European stops as they developed in Pre-Proto-Germanic. As it is presently formulated, Grimm's Law consists of three parts, which must be thought of as three consecutive phases in the sense of a chain shift:



Negau helmet. It reads (from right to left): harikastiteiva\\ip, "Harigast the priest".

- PIE voiceless stops change into PGmc. voiceless fricatives: **p**→*f*, **t**→*θ*, **k**→*x*, **k^w**→*x^w*.
- PIE voiced stops become PGmc. voiceless stops: **b**→*p*, **d**→*t*, **g**→*k*, **g^w**→*k^w*.
- PIE voiced aspirated stops lose their aspiration and change into plain voiced stops: **b^h**→*b*, **d^h**→*d*, **g^h**→*g*, **g^{wh}**→*g^w*, *g*, *w*.

Verner's Law addresses a category of exceptions, stating that unvoiced fricatives are voiced when preceded by an unaccented syllable: PGmc. *s*→*z*, *f*→*v*, *θ*→*ð*; as, EIE **b^hratēr** → PGmc. *brōþēr*, "brother", but EIE **mātér** → PGmc. *mōðēr* "mother".

NOTE 1. W. P. Lehmann (1961) considered that Jacob Grimm's "First Germanic Sound Shift", or Grimm's Law and Verner's Law, which pertained mainly to consonants and were considered for a good many decades to have generated Proto-Germanic, were Pre-Proto-Germanic, and that the "upper boundary" was the fixing of the accent, or stress, on the root syllable of a word, typically the first. Proto-Indo-European had featured a moveable pitch accent comprising "an alternation of high and low tones" as well as stress of position determined by a set of rules based on the lengths of the word's syllables.

The fixation of the stress led to sound changes in unstressed syllables. For Lehmann, the "lower boundary" was the dropping of final -a or -e in unstressed syllables; for example, PIE **woi^d-á** >, Goth. *wait*, "knows" (the > and < signs in linguistics indicate a genetic descent). Antonsen (1965) agreed with Lehmann about the upper boundary but later found runic evidence that the -**a** was not

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dropped: Gmc. *ékwakraz ... wraitā*, “*I wakraz ... wrote (this)*”. He says: “We must therefore search for a new lower boundary for Proto-Germanic”.

NOTE 2. Sometimes the shift produced allophones (consonants that were pronounced differently) depending on the context of the original. With regard to original PIE **k** and **k^w**, Trask (2000) says that the resulting PGmc. *x* and *x^w* were reduced to *h* and *h^w* in word-initial position. Consonants were lengthened or prolonged under some circumstances, appearing in some daughter languages as geminated graphemes. Kraehenmann (2003) states that Proto-Germanic already had long consonants, but they contrasted with short ones only word-medially. Moreover, they were not very frequent and occurred only intervocally almost exclusively after short vowels. The phonemes *b*, *d*, *g* and *g^w*, says Ringe (2006) were stops in some environments and fricatives in others.

Effects of the aforementioned sound laws include the following examples:

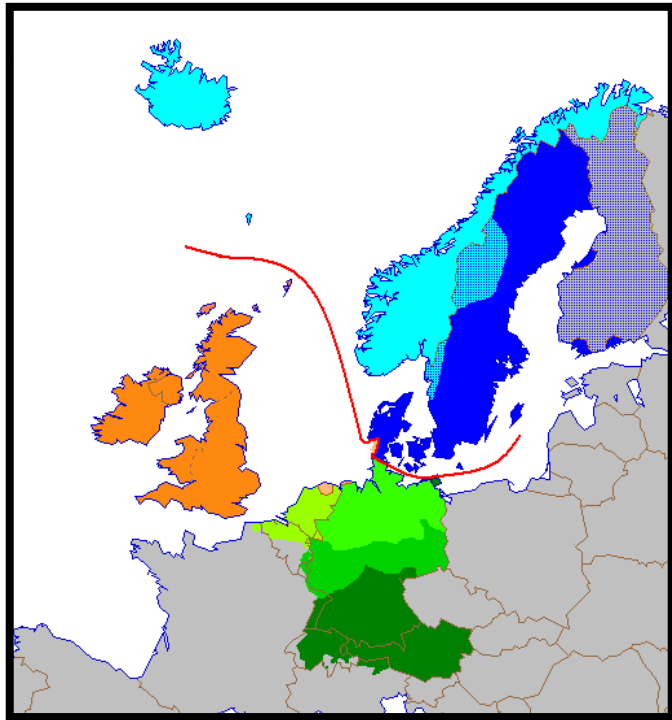
- **p**→*f*: EIE **pods** “*foot*”, PGmc. *fōts*; cf. Goth. *fōtus*, O.N. *fōtr*, O.E. *fōt*, O.H.G. *fuoz*.
- **t**→*p, ð*: EIE **tritjós** “*third*”, PGmc. *þriðjaz*; cf. Goth. *þridja*, O.N. *þriðe*, OE. *þrida*, O.H.G. *dritto*.
- **k**→*x, h*: EIE **kwon** “*dog*”, PGmc. *xunðaz*; cf. Goth. *hunds*, O.N. *hundr*, O.E. *hund*, O.H.G. *hunt*.
- **k^w**→*x^w, h^w*: EIE **kwos** “*what, who*”, Gmc. *h^woz*; cf. Goth. *hwas*, O.N. *hverr*, O.S. *hwe*, O.E. *hwā*, O.Fris. *hwa*, O.H.G. *hwēr*.
- **b**→*p*: EIE **werbō** “*throw*”, Gmc. *werpō*; cf. Goth. *wairpan*, O.S. *werpan*, O.N. *verpa*, O.E. *weorpan*, M.L.G., Du. *werpen*, Ger. *werfen*.
- **d**→*t*: EIE **dekm** “*ten*”, Gmc. *tehun*; cf. Goth. *taihun*, O.S. *tehan*, O.N. *tiu*, O.Fris. *tian*, O.Du. *ten*, O.H.G. *zehan*.
- **g**→*k*: EIE **gelu** “*ice*”, Gmc. *kaldaz*; cf. Goth. *kalds*, O.N. *kaldr*, O.E. *cald*, O.H.G. *kalt*.
- **g^w**→*kw*: EIE **g^wi^wós** “*alive*”, Gmc. *k^wi(k)waz*; cf. Goth. *k^wius*, O.N. *kvikr*, O.E. *cwic*, O.H.G. *quec*.
- **b^h**→*b*: EIE **b^hrātēr** “*brother*”, Gmc. *brōpēr*; cf. Goth. *bróþar*, O.N. *brōþir*, O.E. *brōþor*, O.H.G. *bruoder*.
- **d^h**→*d*: EIE **d^hworis** “*door*”, Gmc. *duriz*; cf. Goth. *daúr*, O.N. *dyrr*, O.E. *duru*, O.H.G. *turi*.

- **g^h→g**: EIE **g^hansis** “goose”, Gmc. *gansiz*; cf. Goth *gansus*, O.N. *gās*, O.E. *gōs*, O.H.G. *gans*.
- **g^{wh}→gw/g/w**: EIE **g^{wh}ormos** “warm”, Gmc. *warmaz*; cf. O.N. *varmr*, O.E. *wearm*, O.H.G. *warm*. EIE **g^{wh}ondos** “fight”, Gmc. *gandaz*; cf. Goth. *gunps*, O.N. *gandr*, O.E. *gūp*, O.H.G. *gund*.

A known exception is that the voiceless stops did not become fricatives if they were preceded by PIE **s**., i.e. **sp**, **st**, **sk**, **sk^w**. Similarly, PIE **t** did not become a fricative if it was preceded by **p**, **k**, or **k^w**. This is sometimes treated separately under the Germanic *spirant law*.

EIE vowels: **a, o**→**a**; EIE **ā, ō**→**ō**. PGmc. had then short *i*, *u*, *e*, *a*, and long *ī*, *ū*, *ē*, *ō*, *ǣ*?

NOTE 1. Similar mergers happened in the Slavic languages, but in the opposite direction. At the time of the merge, the vowels probably were [ɔ] and [ɔ:] before their timbres differentiated into maybe [α] and [ɔ:].

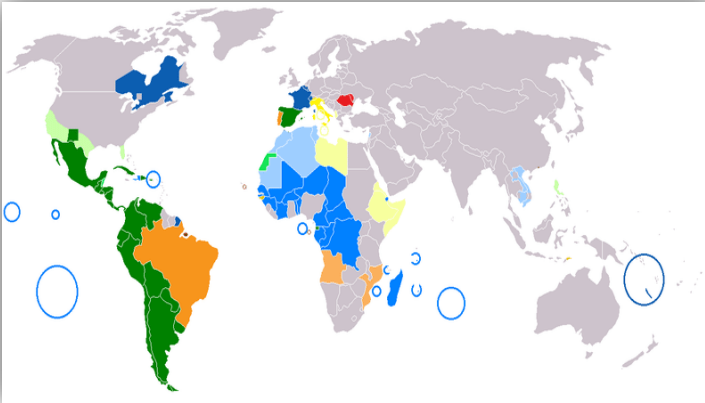


Germanic dialects in Europe. The line divides Western from Northern dialects.

NOTE 2. PGmc. *ǣ* and *ē* are also transcribed as *ē¹* and *ē²*; *ē²* is uncertain as a phoneme, and only reconstructed from a small number of words; it is posited by the comparative method because whereas all probable instances of inherited EIE *ē* (PGmc. **ē¹*) are distributed in Gothic as *ē* and the other Germanic languages as *ā*, all the Germanic languages agree on some occasions of *ē* (e.g. PGmc. *hē²r* → Goth., O.E., O.N. *hēr*, “here”). Krahe treats *ē²* (secondary *ē*) as identical with *ī*. It probably continues EIE **ei** or **ēi**, and it may have been in the process of transition from a diphthong to a long simple vowel in the Proto-Germanic period. Gothic makes no orthographic and therefore presumably no phonetic distinction between *ē¹* and *ē²*. The existence of two Proto-Germanic [e:]‑like phonemes is supported by the existence of two e-like Elder Futhark runes, *Ehwaz* and *Eihwaz*.

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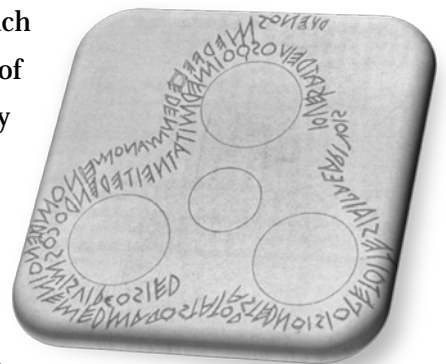
B. LATIN



Regions where Romance languages are spoken, either as mother tongue or as second language.

The Romance languages, a major branch of the Indo-European language family, comprise all languages that descended from Latin, the language of the Roman Empire. Romance languages have some 800 million native speakers worldwide, mainly in the Americas, Europe, and

Africa, as well as in many smaller regions scattered through the world. The largest languages are Spanish and Portuguese, with about 400 and 200 million mother tongue speakers respectively, most of them outside Europe. Within Europe, French (with 80 million) and Italian (70 million) are the largest ones. All Romance languages descend from Vulgar Latin, the language of soldiers, settlers, and slaves of the Roman Empire, which was substantially different from the Classical Latin of the Roman *literati*. Between 200 BC and 100 AD, the expansion of the Empire, coupled with administrative and educational policies of Rome, made Vulgar Latin the dominant native language over a wide area spanning from the Iberian Peninsula to the Western coast of the Black Sea. During the Empire's decadence and after its collapse and fragmentation in the 5th century, Vulgar Latin evolved independently within each local area, and eventually diverged into dozens of distinct languages. The overseas empires established by Spain, Portugal and France after the 15th century then spread Romance to the other continents — to such an extent that about two thirds of all Romance speakers are now outside Europe.



The Duenos (O.Lat. duenus, Lat. buenus) Inscription in Old Latin, ca. 6th century BC.

Latin is usually classified, along with Faliscan, as an Italic dialect. The Italic speakers were not native to

Italy, but migrated into the Italian Peninsula in the course of the 2nd millennium BC, and were apparently related to the Celtic tribes that roamed over a large part of Western Europe at the time. Archaeologically, the Apennine culture of inhumations enters the Italian Peninsula from ca. 1350 BC, east to west; the Iron Age reaches Italy from ca. 1100 BC, with the Villanovan culture (cremating), intruding north to south. Before the Italic arrival, Italy was populated primarily by non-Indo-European groups (perhaps including the Etruscans). The first settlement on the Palatine hill dates to ca. 750 BC, settlements on the Quirinal to 720 BC, both related to the Founding of Rome. As Rome extended its political dominion over Italy, Latin became dominant over the other Italic languages, which ceased to be spoken perhaps sometime in the 1st century AD.

Italic is usually divided into:

- Sabellic, including:
 - Oscan, spoken in south-central Italy.
 - Umbrian group:
 - *Umbrian*.
 - *Volscian*.
 - *Aequian*.
 - *Marsian*.
 - *South Picene*.
- Latino-Faliscan, including:
 - Faliscan, spoken in the area around *Falerii Veteres*, north of the city of Rome.
 - Latin, spoken in west-central Italy. The Roman conquests eventually spread it throughout the Roman Empire and beyond.



Iron Age Italy, ca 800 BC. In central Italy, Italic languages. In southern and north-western Italy, other Indo-European languages. Venetic, Sicanian and Sicel were possibly IE.

The ancient Venetic language, as revealed by its inscriptions (including complete sentences), was also closely related to the Italic languages and is sometimes even

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classified as Italic. However, since it also shares similarities with other Western Indo-European branches (particularly Germanic), some linguists prefer to consider it an independent IE language.

Phonetic changes from EIE to Latin include: **b^h**→*f/b*, **d^h**→*f/b*, **g^h**→*h/f*, **g^w**→*w/g*, **k^w**→*kw/k*, **p**→*p/kw*.

The Italic languages are first attested in writing from Umbrian and Faliscan inscriptions dating to the 7th century BC. The alphabets used are based on the Old Italic alphabet, which is itself based on the Greek alphabet. The Italic languages themselves show minor influence from the Etruscan and somewhat more from the Ancient Greek languages.

Oscan had much in common with Latin, though there are also some differences, and many common word-groups in Latin were represented by different forms; as, Lat. *uolo*, *uelle*, *uolui*, and other such forms from PIE **wel-**, *will*, were represented by words derived from **g^{her}-**, *desire*, cf. Osc. *herest*, “*he wants, desires*” as opposed to Lat. *uult* (id.). Lat. *locus*, “*place*” was absent and represented by Osc. *slaagid*.

In phonology, Oscan also shows a different evolution, as EIE **k^w**→ Osc. *p* instead of Lat. *kw* (cf. Osc. *pis*, Lat. *quis*); EIE **g^w**→ Osc. *b* instead of Latin *w*; EIE medial **b^h**, **d^h**→ Osc. *f*, in contrast to Lat. *b* or *d* (cf. Osc. *mefiai*, Lat. *mediae*); etc.

NOTE. A specimen of Faliscan appears written round the edge of a picture on a patera: “*foied vino pipafo, cra carefo*”, which in Old Latin would have been “*hodie vinom bibabo, cras carebo*”, translated as “*today I will drink wine; tomorrow I won't have any*” (R. S. Conway, *Italic Dialects*). Among other distinctive features, it shows the retention of medial *f* which in Latin became *b*, and evolution of EIE **g^h**→*f* (*fo-*, contrast Lat. *ho-*).

Hence the reconstructed changes of North-West Indo-European into Proto-Italic:

- Voiced labiovelars unround or lenite: **g^w**→*g/w*, **g^{wh}**→*g^h*.



Forum inscription in Latin, written boustrophedon.

- Voiced aspirates become first unvoiced, then fricativize: **b^h** → **p^h** → **ϕ** → **f**; **d^h** → **t^h** → **θ**; **g^h** → **k^h** → **x**.

NOTE. About PIE intervocalic **g^h** → Ita. **x**, linguists (see Joseph & Wallace 1991) generally propose that it evolves as Faliscan **g** or **k**, while in Latin it becomes glottal **h**, without a change of manner of articulation. Picard (1993) rejects that proposal citing abstract phonetic principles, which Chela-Flores (1999) argues citing examples of Spanish phonology.

- EIE **s** → Ita. **θ** before **r** (cf. Ita. *kereθrom*, Lat. *cerebrum*); unchanged elsewhere.

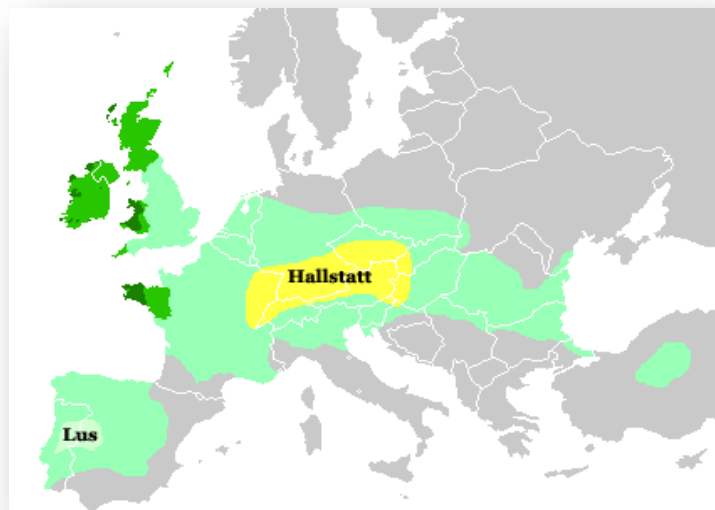
Up to 8 cases are found; apart from the 6 cases of Classic Latin (i.e. N-V-A-G-D-Ab), there was a Locative (cf. Lat. *proximae viciniae, domī, carthaginī*; Osc. *aasai*, Lat. “*in ārā*” etc.) and an Instrumental (cf. Columna Rostrata Lat. *pugnandod, marid, naualid*, etc; Osc. *cadeis amnud*, Lat. “*inimicitiae causae*”; Osc. *preiutatud*, Lat. “*prīuātō*”, etc.).

About forms different from original Genitives and Datives, compare Genitive (Lapis Satricanus:) *Popliosio Valesiosio* (the type in *-ī* is also very old, Segomaros *-ī*), and Dative (Praeneste Fibula:) *numasioi*, (Lucius Cornelius Scipio Epitaph:) *quoiei*.

C. CELTIC

The Celtic languages are the languages descended from Proto-Celtic, or “Common Celtic”, an Indo-European proto-language.

During the 1st millennium BC, especially between the 5th and 2nd centuries BC they were spoken across Europe, from the southwest of the Iberian Peninsula



Diachronic distribution of Celtic peoples: maximal expansion (ca. 200 BC) and modern “Celtic nations” and Celtic-speaking territories.

and the North Sea, up the Rhine and down the Danube to the Black Sea and the Upper

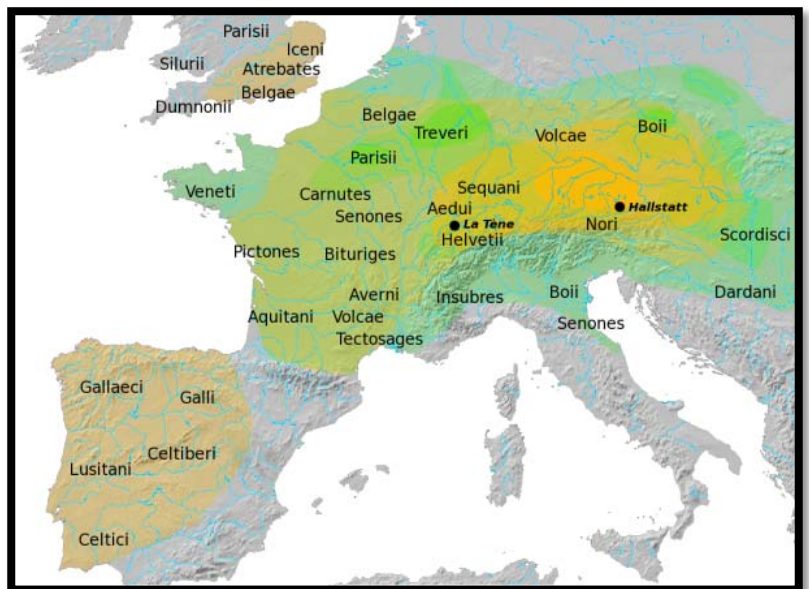
1. Introduction

Balkan Peninsula, and into Asia Minor (Galatia). Today, Celtic languages are now limited to a few enclaves in the British Isles and on the peninsula of Brittany in France.

The distinction of Celtic into different sub-families probably occurred about 1000 BC. The early Celts are commonly associated with the archaeological Urnfield culture, the La Tène culture, and the Hallstatt culture.

Some scholars distinguish Continental and Insular Celtic, arguing that the differences between the Goidelic and Brythonic languages arose after these split off from the Continental Celtic languages. Other scholars distinguish P-Celtic from Q-Celtic, putting most of the Continental Celtic languages in the former group – except for Celtiberian, which is Q-Celtic.

NOTE. There are two competing schemata of categorization. One scheme, argued for by Schmidt (1988) among others, links Gaulish with Brythonic in a P-Celtic node, leaving Goidelic as Q-Celtic. The difference between P and Q languages is the treatment of EIE k^w , which became $*p$ in the P-Celtic languages but $*k$ in Goidelic. An



Hallstatt core territory (ca. 800 BC) and its influence (ca. 500 BC); and La Tène culture (ca. 450 BC) and its influence (ca. 50 BC). Some major Celtic tribes have been labeled.

example is the Cel. verbal root k^wrin - “to buy”, which became Welsh *pryn*-, but O.Ir. *cren*-.

The other scheme links Goidelic and Brythonic together as an Insular Celtic branch, while Gaulish and Celtiberian are referred to as Continental Celtic. According to this theory, the ‘P-Celtic’ sound change of $[k^w]$ to $[p]$ occurred independently or regionally. The proponents of the Insular Celtic hypothesis point to other shared innovations among Insular Celtic languages, including inflected prepositions, VSO word order, and the lenition of intervocalic $[m]$ to $[\beta]$, a nasalized voiced bilabial fricative (an extremely rare sound), etc. There is, however, no assumption that the Continental Celtic languages descend from a common “Proto-Continental Celtic” ancestor.

Rather, the Insular/Continental schemata usually consider Celtiberian the first branch to split from Proto-Celtic, and the remaining group would later have split into Gaulish and Insular Celtic.

Known PIE evolutions into Proto-Celtic include:

- Consonants: **p** → ϕ → *h* → \emptyset in initial and intervocalic positions. Cel. ϕs → *xs*, ϕt → *xt*

NOTE. EIE **p** was lost in Proto-Celtic, apparently going through the stages ϕ (perhaps in Lus. *porcos*, *v.i.*) and *h* (perhaps attested by the toponym *Hercynia* if this is of Celtic origin) before being lost completely word-initially and between vowels. EIE **sp-** became Old Irish *s* and Brythonic *f*, while Schrijver (1995) argues there was an intermediate stage *sφ-* (in which ϕ remained an independent phoneme until after Proto-Insular Celtic had diverged into Goidelic and Brythonic), McCone (1996) finds it more economical to believe that **sp-** remained unchanged in PC, that is, the change **p** to ϕ did not happen when **s** preceded.

- Aspirated: **d^h** → *d*, **b^h** → *b*, **g^h** → *x*, **g^{wh}** → *g^w*; but **g^w** → *b*.
- Vowels: **ō** → *ā*, *ū* (in final syllable); **ē** → *ī*; EIE **u-w** → Cel. *o-w*.
- Diphthongs: **āi** → *ai*, **ēi** → *ei*, **ōi** → *oi*; **āu** → *au*, **ēu**, **ōu** → *ou*.
- Sonorants: **l̥** → *la*, *li* (before stops); **r̥** → *ar*, *ri* (before stops); **m̥** → *am*; **n̥** → *an*.

Italo-Celtic refers to the hypothesis that Italic and Celtic dialects are descended from a common ancestor, Proto-Italo-Celtic, at a stage post-dating Proto-Indo-European. Since both Proto-Celtic and Proto-Italic date to the early Iron Age (say, the centuries on either side of 1000 BC), a probable time frame for the assumed period of language contact would be the late Bronze Age, the early to mid 2nd millennium BC. Such grouping is supported among others by Meillet (1890), and Kortlandt (2007).

NOTE. One argument for Italo-Celtic was the thematic Genitive in *i* (*dominus*, *domini*). Both in Italic (*Popliosio Valesiosio*, Lapis Satricanus) and in Celtic (Leponitic, Celtiberian *-o*), however, traces of PIE gentvie **-osjo** have been discovered, so that the spread of the *i*-Genitive could have occurred in the two groups independently, or by areal diffusion. The community of *-ī* in Italic and Celtic may be then attributable to early contact, rather than to an original unity. The *i*-Genitive has been compared to the so-called Cvi formation in Sanskrit, but that too is probably a comparatively late development.

Other arguments include that both Celtic and Italic have collapsed the PIE Aorist and Perfect into a single past tense, and the *ā*-subjunctive, because both Italic and Celtic have a subjunctive descended from an earlier optative in *-ā-*. Such an optative is not known from other languages, but the suffix occurs in Balto-Slavic and Tocharian past tense formations, and possibly in Hitt. *-ahh-*.

1. Introduction

D. SLAVIC

The Slavic languages (also called Slavonic languages), a group of closely related languages of the Slavic peoples and a subgroup of the Indo-European language family, have speakers in most of Eastern Europe, in much of the Balkans, in parts of Central Europe, and in the northern part of Asia. The largest languages are Russian and Polish, with 165 and some 47 million speakers, respectively. The oldest Slavic literary language was Old Church Slavonic, which later evolved into Church Slavonic.

There is much debate whether Pre-Proto-Slavic branched off directly from Europe's Indo-European in 2000 BC, or whether it passed through a common *Proto-Balto-Slavic* stage which had necessarily split apart before 1000 BC in its two main sub-branches.

The original homeland of the speakers of Proto-Slavic remains controversial too. The most ancient recognizably Slavic hydronyms (river names) are to be found in northern and western Ukraine and southern Belarus. It has also been noted that Proto-Slavic seemingly lacked a maritime vocabulary.

The Proto-Slavic language secession from a common Proto-Balto-Slavic is estimated on archaeological and glottochronological criteria to have occurred between 1500-1000 BC. Common Slavic is usually reconstructible to around 600 AD.



Historical distribution of the Slavic languages. The larger shaded area is the Prague-Penkov-Kolochin complex of cultures of the 6th to 7th centuries, likely corresponding to the spread of Slavic-speaking tribes of the time. The smaller shaded area indicates the core area of Slavic river names, dated ca. 500 AD.

By the 7th century, Common Slavic had broken apart into large dialectal zones. Linguistic differentiation received impetus from the dispersion of the Slavic peoples over a large territory – which in Central Europe exceeded the current extent of Slavic-speaking territories. Written documents of the 9th, 10th & 11th centuries already show some local linguistic features.

NOTE. For example the Freising monuments show a language which contains some phonetic and lexical elements peculiar to Slovenian dialects (e.g. rhotacism, the word *krilatec*).

In the second half of the ninth century, the dialect spoken north of Thessaloniki became the basis for the first written Slavic language, created by the brothers Cyril and Methodius who translated portions of the Bible and other church books. The language they recorded is known as Old Church Slavonic. Old Church Slavonic is not identical to Proto-Slavic, having been recorded at least two centuries after the breakup of Proto-Slavic, and it shows features that clearly distinguish it from Proto-Slavic. However, it is still reasonably close, and the mutual intelligibility between Old Church Slavonic and other Slavic dialects of those days was proved by Cyril's and Methodius' mission to Great Moravia and Pannonia. There, their early South Slavic dialect used for the translations was clearly understandable to the local population which spoke an early West Slavic dialect.



Page from Codex Zographensis (10th 11th c. AD) in Old Church Slavonic.

As part of the preparation for the mission, the Glagolitic alphabet was created in 862 and the most important prayers and liturgical books, including the Aprakos Evangeliar – a Gospel Book lectionary containing only feast-day and Sunday readings – , the Psalter, and Acts of the Apostles, were translated. The language and the alphabet were taught at the Great Moravian Academy (O.C.S. *Vel'komoravské učilište*) and were used for government and religious documents and books. In 885, the use of the O.C.S. in Great Moravia was prohibited by the Pope in favour of Latin. Students of the two apostles, who were expelled from Great Moravia in 886, brought the Glagolitic alphabet and the Old

Church Slavonic language to the Bulgarian Empire, where it was taught and Cyrillic alphabet developed in the Preslav Literary School.

Vowel changes from North-West Indo-European to Proto-Slavic:

- EIE **ī**, **ei** → Sla. *i₁*; EIE **i** → **i* → Sla. *i*; EIE **u** → **u* → Sla. *u*; EIE **ū** → Sla. *y*.
 - EIE **e** → Sla. *e*; EIE **ē** → Sla. *ě₁*;
 - EIE **en**, **em** → Sla. *e*; EIE **an**, **on**; **am**, **om** → **an*; **am* → Sla. *o*.
 - EIE **a**, **o** → **a* → Sla. *o*; EIE **ā**, **ō** → **ā* → Sla. *a*; EIE **ai**, **oi** → **ai* → Sla. *ě₂*.
- reduced **ai* (**āi*/**ui*) → Sla. *i₂*; EIE **au**, **ou** → **au* → Sla. *u*.

NOTE 1. Apart from this simplified equivalences, other evolutions appear (see Kortlandt's *From Proto-Indo-European to Slavic* at <<http://www.kortlandt.nl/publications/art066e.pdf>>):

- The vowels *i₂*, *ě₂* developed later than *i₁*, *ě₁*. In Late Proto-Slavic there were no differences in pronunciation between *i₁* and *i₂* as well as between *ě₁* and *ě₂*. They had caused, however, different changes of preceding velars, see below.
- Late Proto-Slavic yers *ь*, *ъ* < earlier *i*, *u* developed also from reduced EIE **e**, **o** respectively. The reduction was probably a morphologic process rather than phonetic.
- We can observe similar reduction of **ā** into **ū* (and finally *y*) in some endings, especially in closed syllables.
- The development of the Sla. *i₂* was also a morphologic phenomenon, originating only in some endings.
- Another source of the Proto-Slavic *y* is **ō* in Germanic loanwords – the borrowings took place when Proto-Slavic no longer had *ō* in native words, as EIE **ō** had already changed into **ā*.
- EIE **a** (from PIE **ǵ**) disappeared without traces when in a non-initial syllable.
- EIE **eu** probably developed into **jau* in Early Proto-Slavic (or during the Balto-Slavic epoch), and eventually into Proto-Slavic *ju*.
- According to some authors, EIE long diphthongs **ēi**, **āi**, **ōi**, **ēu**, **āu**, **ōu** had twofold development in Early Proto-Slavic, namely they shortened in endings into simple **ei*, **ai*, **oi*, **eu*, **au*, **ou* but they lost their second element elsewhere and changed into **ē*, **ā*, **ō* with further development like above.

NOTE 2. Other vocalic changes from Proto-Slavic include **jo*, **jь*, **jy* changed into **je*, **jь*, **ji*; **o*, **ь*, **y* also changed into **e*, **ь*, **i* after **c*, **ʒ*, **s* which developed as the result of the 3rd palatalization; **e*, **ě* changed into **o*, **a* after **č*, **ʒ*, **š*, **ž* in some contexts or words; a similar change of **ě* into **a* after **j* seems to have occurred in Proto-Slavic but next it can have been modified by analogy.

On the origin of Proto-Slavic consonants, the following relationships are found:

- EIE **p** → Sla. *p*; EIE **b**, **b^h** → Sla. *b*.
- EIE **t** → Sla. *t*; EIE **d**, **d^h** → Sla. *d*.
- EIE **k**, **k^w** → Sla. *K* (palatalized ***k^j** → Sla. *s*); EIE **g**, **g^h**, **g^w**, **g^{wh}** → Sla. *g* (palatalized (***g^j**, ***g^{jh}** → Sla. *z*)
- EIE **s** → Sla. *s*; before a voiced consonant EIE **[z]** → Sla. *z*; before a vowel when after **r**, **u**, **k**, **i**, probably also after **l** → Sla. *x*.
- EIE word-final **m** → Sla. *n* (<BSl. **n*).
- EIE **m̥** → Sla. *im*, *um*; EIE **n̥** → Sla. *in*, *un*; EIE **l̥** → Sla. *il*, *ul*; EIE **r̥** → Sla. *ir*, *ur*.
- EIE **w** → Sla. *v* (<BSl. **w*); EIE **j** → Sla. *j*.

In some words the Proto-Slavic *x* developed from other PIE phonemes, like **kH**, **ks**, **sk**.

E. BALTIC

The Baltic languages are a group of related languages belonging to the IE language family, spoken in areas extending east and southeast of the Baltic Sea in Northern Europe.

The language group is often divided into two sub-groups: Western Baltic, containing only extinct languages as Prussian or Galindan, and Eastern Baltic, containing both extinct and the two living languages in the group, Lithuanian and Latvian.



While related, Lithuanian, Latvian, and particularly Old Prussian differ substantially from each other and are not mutually intelligible.

The oldest Baltic linguistic record is the Elbinger lexicon of the beginning of the 14th century AD. It contains 802 Old Prussian equivalents of Old Middle German words. The oldest Baltic text is Old Prussian as well; it comes from the middle of the 14th century AD and includes only eleven words. The first Old Lithuanian and Old Latvian texts come from the 16th century and appear already in book form, and were translations of a catechism and the Lord's Prayer.

Baltic and Slavic share so many similarities that many linguists, following the lead of such notable Indo-Europeanists as August Schleicher and Oswald Szemerényi, take these to indicate that the two groups separated from a common ancestor, the Proto-Balto-Slavic language, dated ca. 1500-500 BC, depending on the different guesstimates.

NOTE 1. For those guesstimates, "Classical glottochronology" conducted by Czech Slavist M. Čejka in 1974 dates the Balto-Slavic split to -910±340 BCE, Sergei Starostin in 1994 dates it to 1210 BCE, and "recalibrated glottochronology" conducted by Novotná & Blažek dates it to 1400-1340 BCE. This agrees well with Trziniec-Komarov culture, localized from Silesia to Central Ukraine and dated to the period 1500–1200 BCE.

NOTE 2. Until Meillet's *Dialectes indo-européens* of 1908, Balto-Slavic unity was undisputed among linguists – as he notes himself at the beginning of the *Le Balto-Slave* chapter, "*L'unité linguistique balto-slave est l'une de celles que personne ne conteste*". Meillet's critique of Balto-Slavic confined itself to the seven characteristics listed by Karl Brugmann in 1903, attempting to show that no single one of these is sufficient to prove genetic unity. Szemerényi in his 1957 re-examination of Meillet's results concludes that the Balts and Slavs did, in fact, share a "*period of common language and life*", and were probably separated due to the incursion of Germanic tribes along the Vistula and the Dnepr roughly at the beginning of the Common Era.

A new theory was proposed in the 1960s by V. Ivanov and V. Toporov: that the Balto-Slavic proto-language split from the start into West Baltic, East Baltic and Proto-Slavic. In their framework, Proto-Slavic is a peripheral and innovative Balto-Slavic dialect which suddenly expanded, due to a conjunction of historical circumstances. Onomastic evidence shows that Baltic languages were once spoken in much wider territory than the one they cover today, and were later replaced by Slavic.

NOTE. The most important of these common Balto-Slavic isoglosses are:

- Winter's law: lengthening of a short vowel before a voiced plosive, usually in a closed syllable.
- Identical reflexes of PIE syllabic sonorants, usually developing *i* and *u* before them. Kuryłowicz thought that *uR reflexes arose after PIE velars, and also notable is also older opinion of J. Endzelīns and R. Trautmann according to whom *uR reflexes are the result of zero-grade of morphemes that had EIE o → BSl. *a in normal-grade. Matasović (2008) proposes following internal rules after EIE syllabic R → BSl. *əR: 1) *ə → *i in a final syllable; 2) *ə → *u after velars and before nasals; 3) *ə → *i otherwise.
- Hirt's law: retraction of PIE accent to the preceding syllable closed by a laryngeal.
- Rise of the Balto-Slavic acute before PIE laryngeals in a closed syllable.
- Replacement of PIE genitive singular of thematic nouns with ablative.
- Formation of past tense in *-ē (cf. Lith. pret. *dāvė*, "he gave", O.C.S. imperfect *bě*, "he was")
- Generalization of the IE neuter **to-** stem to the nominative singular of masculine and feminine demonstratives instead of IE **so-** pronoun, **so**, **sā**, **tod** → BSl. *tos*, *tā*, *tod*.
- Formation of *definite adjectives* with a construction of adjective and relative pronoun; cf. Lith. *geràsis*, "the good", vs. *gėras*, "good"; O.C.S. *dobrǫjb*, "the good", vs. *dobro*, "good".

Common Balto-Slavic innovations include several other prominent, but non-exclusive isoglosses, such as the satemization, Ruki, change of PIE **o** → BSl. **a* (shared with Germanic, Indo-Iranian and Anatolian) and the loss of labialization in PIE labiovelars (shared with Indo-Iranian, Armenian and Tocharian). Among Balto-Slavic archaisms notable is the retention of traces of an older PIE accent. 'Ruki' is the term for a sound law which is followed especially in BSl. and Aryan dialects. The name of the term comes from the sounds which cause the phonetic change, i.e. PIE **s** → *š* / *r*, *u*, *K*, *i* (it associates with a Slavic word which means 'hands' or 'arms'). A sibilant [s] is retracted to [ʃ] after *i, u, r*, and after velars (i.e. *k* which may have developed from earlier **k**, **g**, **g^h**). Due to the character of the retraction, it was probably an apical sibilant (as in Spanish), rather than the dorsal of English. The first phase (**s** → *š*) seems to be universal, the later retroflexion (in Sanskrit and probably in Proto-Slavic as well) is due to levelling of the sibilant system, and so is the third phase - the retraction to velar [x] in Slavic and also in some Middle Indian languages, with parallels in e.g. Spanish. This rule was first formulated for IE by Holger Pedersen.

Baltic and Slavic show a remarkable amount of correspondence in vocabulary too; there are at least 100 words exclusive to BSl., either being a common innovation or sharing the same semantic development from a PIE root; as, BSl. **lėipā*, "*tilia*" → Lith. *lėpa*, O.Prus. *līpa*, Ltv. *liēpa*; Sla. **lipa*; BSl. **rankā*, "*hand*" → Lith. *rankà*, O.Prus. *rānkan*, Ltv. *rūoka*; Sla. **rǫkà* (cf. O.C.S. *rǫka*). BSl. **galwǫ*, "*head*" → Lith. *galvà*, O.Prus. *galwo*, Ltv. *galva*; Sla. **golvà* (cf. O.C.S. *glava*).

F. FRAGMENTARY DIALECTS

MESSAPIAN

Messapian (also known as *Messapic*) is an extinct Indo-European language of south-eastern Italy, once spoken in the regions of Apulia and Calabria. It was spoken by the three Iapygian tribes of the region: the Messapians, the Daunii and the Peucetii. The language, a centum dialect, has been preserved in about 260 inscriptions dating from the 6th to the 1st century BC. It became extinct after the Roman Empire conquered the region and assimilated the inhabitants.

There is a hypothesis that Messapian was an Illyrian language. The Illyrian languages were spoken mainly on the other side of the Adriatic Sea. The link between Messapian and Illyrian is based mostly on personal names found on tomb inscriptions and on classical references, since hardly any traces of the Illyrian language are left.

NOTE. Some phonetic characteristics of the language may be regarded as quite certain:

- PIE short *o→a, as in the last syllable of the genitive *kalatoras*.
- PIE final *m→n, as in *aran*.
- PIE *nj→nn, as in the Messapian praenomen *Dazohannes* vs. the Illyrian praenomen *Dazonius*; the Messapian genitive *Dazohonnihi* vs. Illyrian genitive *Dasonii*, etc.
- PIE *tj→tth, as in the Messapian praenomen *Dazetthes* vs. Illyrian *Dazetius*; the Messapian genitive *Dazetthihi* vs. the Illyrian genitive *Dazetii*; from a *Dazet*- stem common in Illyrian and Messapian.
- PIE *sj→ss, as in Messapian *Vallasso* for *Vallasio*, a derivative from the shorter name *Valla*.
- The loss of final *-d, as in *tepise*, and probably of final *-t, as in *-des*, perhaps meaning “set”, from PIE *d^he-, “set, put”.
- The change of voiced aspirates in Proto-Indo-European to plain voiced consonants: PIE *d^h→d, as in Messapian *anda* (< PIE *en-d^ha- < PIE *en-, “in”, compare Gk. *entha*); and PIE *b^h→b, as in Messapian *beran* (< PIE *b^her-, “to bear”).
- PIE *au→ā before (at least some) consonants: *Bāsta*, from *Bausta*.
- The form *penkaheh* – which Torp very probably identifies with the Oscan stem *pompaio* – a derivative of the Proto-Indo-European numeral *penk^we, “five”.
- If this last identification be correct it would show, that in Messapian (just as in Venetic and Ligurian) the original labiovelars (*k^w, *g^w, *g^{wh}) were retained as gutturals and not converted

into labials. The change of *o* to *a* is exceedingly interesting, being associated with the northern branches of Indo-European such as Gothic, Albanian and Lithuanian, and not appearing in any other southern dialect hitherto known. The Greek *Aphrodite* appears in the form *Aprodita* (Dat. Sg., fem.).

- The use of double consonants which has been already pointed out in the Messapian inscriptions has been very acutely connected by Deecke with the tradition that the same practice was introduced at Rome by the poet Ennius who came from the Messapian town Rudiae (Festus, p. 293 M).

VENETIC

Venetic is an Indo-European language that was spoken in ancient times in the Veneto region of Italy, between the Po River delta and the southern fringe of the Alps. It was a *Centum* dialect.

The language is attested by over 300 short inscriptions dating between the 6th century BC and 1st century. Its speakers are identified with the ancient people called *Veneti* by the Romans and *Enetoi* by the Greek. The inscriptions use a variety of the Northern Italic alphabet, similar to the Old Italic alphabet. It became extinct around the 1st century when the local inhabitants were assimilated into the Roman sphere.

NOTE. The exact relationship of Venetic to other Indo-European languages is still being investigated, but the majority of scholars agree that Venetic, aside from Liburnian, was closest to the Italic languages. Venetic may also have been related to the Illyrian languages, though the theory that Illyrian and Venetic were closely related is debated by current scholarship.

Interesting parallels with Germanic have also been noted, especially in pronominal forms:

Ven. *ego*, “I”, acc. *meḡo*, “me”; Goth. *ik*, acc. *mik*; but cf. Lat. *ego*, acc. *me*.

Ven. *sselboisselboi*, “to oneself”; O.H.G. *selb selbo*; but cf. Lat. *sibi ipsi*.

Venetic had about six or even seven noun cases and four conjugations (similar to Latin). About 60 words are known, but some were borrowed from Latin (*liber.tos.* < *libertus*) or Etruscan. Many of them show a clear Indo-European origin, such as Ven. *vhraterei* (< PIE **b^hreh₂tereī*), “to the brother”.

In Venetic, PIE stops **b^h→f*, **d^h→f*, **g^h→h*, in word-initial position (as in Latin and Osco-Umbrian), but to **b^h→b*, **d^h→d*, **g^h→g*, in word-internal intervocalic position, as in Latin. For Venetic, at least the developments of **b^h* and **d^h* are clearly attested. Faliscan and Osco-Umbrian preserve internal **b^h→f*, **d^h→f*, **g^h→h*.

1. Introduction

There are also indications of the developments of PIE initial $*g^w \rightarrow w-$, PIE $*k^w \rightarrow kv$ and PIE initial $*g^{wh} \rightarrow f$ in Venetic, all of which are parallel to Latin, as well as the regressive assimilation of PIE sequence $p...k^w... \rightarrow kw...k^w...$ (e.g. **penkwe** $\rightarrow *k^wenk^we$, “five”, **perkwo** $\rightarrow *k^werk^wu$, “oak”), a feature also found in Italic and Celtic (Lejeune 1974).

LIGURIAN

The Ligurian language was spoken in pre-Roman times and into the Roman era by an ancient people of north-western Italy and south-eastern France known as the Ligures. Very little is known about this language (mainly place names and personal names remain) which is generally believed to have been Indo-European; it appears to have adopted significantly from other IE languages, primarily Celtic (Gaulish) and Latin.

Strabo states “*As for the Alps... Many tribes (éthnê) occupy these mountains, all Celtic (Keltikà) except the Ligurians; but while these Ligurians belong to a different people (hetero-ethneis), still they are similar to the Celts in their modes of life (biois).*”

LIBURNIAN

The Liburnian language is an extinct IE language which was spoken by the ancient Liburnians in the region of Liburnia (south of the Istrian peninsula) in classical times. It is usually classified as a *Centum* language. It appears to have been on the same Indo-European branch as the Venetic language; indeed, the Liburnian tongue may well have been a Venetic dialect.

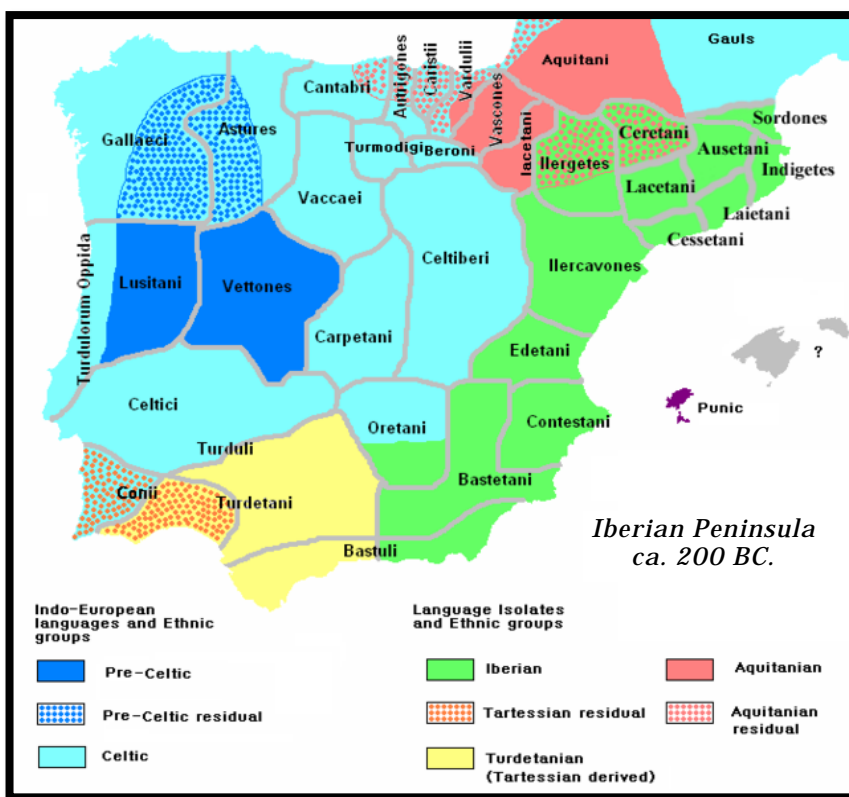
NOTE. No writings in Liburnian are known, though. The grouping of Liburnian with Venetic is based on the Liburnian onomastics. In particular, Liburnian anthroponyms show strong Venetic affinities, with many common or similar names and a number of common roots, such as *Vols-*, *Volt-*, and *Host-* (<PIE $*g^hos-ti-$, “stranger, guest, host”). Liburnian and Venetic names also share suffixes in common, such as *-icus* and *-ocus*.

These features set Liburnian and Venetic apart from the Illyrian onomastic province, though this does not preclude the possibility that Venetic-Liburnian and Illyrian may have been closely related, belonging to the same Indo-European branch. In fact, a number of linguists argue that this is the case, based on similar phonetic features and names in common between Venetic-Liburnian on the one hand and Illyrian on the other.

Liburnia was conquered by the Romans in 35 BC, and its language was eventually replaced by Latin, undergoing language death probably very early in the Common Era.

LUSITANIAN

Lusitanian or Lusatian (so named after the *Lusitani* or Lusitanians) was a Paleohispanic IE language known by only five inscriptions and numerous toponyms and theonyms. The language was spoken before the Roman conquest of Lusitania, in the territory



inhabited by Lusitanian tribes, from Douro to the Tagus river in the western area of the Iberian Peninsula, where they were established already before the 6th c. BC.

Their language is usually considered a Pre-Celtic (possibly Italo-Celtic) IE dialect, and it is sometimes associated with the language of the Vettones and with the linguistic substratum of the Gallaeci and Astures, based on archaeological findings and descriptions of ancient historians.

NOTE. The affiliation of the Lusitanian language within a Pre-Celtic (or Italo-Celtic) IE group is still debated. There are those who endorse that it is a Celtic language, a theory largely based upon the historical fact that the only Indo-European tribes that are known to have existed in Portugal at that time were Celtic tribes. The apparent Celtic character of most of the lexicon —anthroponyms and toponyms — may also support a Celtic affiliation. There is a substantial problem in the Celtic theory however: the preservation of PIE initial *p-, as in Lusitanian *pater* or *porcom*, meaning “father” and “pig”, respectively. The Celtic languages had lost that initial *p- in their evolution; compare Lat. *pater*, Gaul. *ater*, and Lat. *porcum*, O.Ir. *orc*. However, it does not necessarily

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preclude the possibility of Lusitanian being Celtic, because of the supposed evolution of PIE initial $*p \rightarrow *ϕ \rightarrow *h \rightarrow \text{Cel. } \emptyset$, so it might have been an early Proto-Celtic (or Italo-Celtic) dialect that split off before the loss of $p-$, or when $p-$ had become $*ϕ-$ (before shifting to $h-$ and then being lost); the letter p of the Latin alphabet could have been used to represent either sound.

F. Villar and R. Pedrero relate Lusitanian with the Italic languages. The theory is based on parallels in the names of deities, as Lat. *Consus*, Lus. *Cossue*, Lat. *Seia*, Lus. *Segia*, or Marrucinian *Iovia*, Lus. *Iovea(i)*, etc. and other lexical items, as Umb. *gomia*, Lus. *comaia*, with some other grammatical elements.

II. NORTHERN INDO-EUROPEAN IN ASIA: TOCHARIAN

Tocharian or Tokharian is one of the most obscure branches of the group of Indo-European languages. The name of the language is taken from people known to the Greek historians (Ptolemy VI, 11, 6) as the Tocharians (Greek Τόχαροι, “*Tokharoi*”).

NOTE. These are sometimes identified with the Yuezhi and the Kushans, while the term *Tokharistan* usually refers to 1st millennium Bactria. A Turkic text refers to the Turfanian language (Tocharian A) as *twqry*. F. W. K. Müller has associated this with the name of the Bactrian *Tokharoi*. In Tocharian, the language is referred to as *arish-kāna* and the Tocharians as *arya*.

Tocharian consisted of two languages; Tocharian A (Turfanian, Arsi, or East Tocharian) and Tocharian B (Kuchean or West Tocharian). These languages were spoken roughly from the 6th to 9th century centuries; before they became extinct, their speakers were absorbed into the expanding Uyghur tribes. Both languages were once spoken in the Tarim Basin in Central Asia, now the Xinjiang Autonomous Region of China.

Note. Properly speaking, based on the tentative interpretation of *twqry* as related to *Tokharoi*, only Tocharian A may be referred to as *Tocharian*, while Tocharian B could be called *Kuchean* (its native name may have been *kuśiññe*), but since their grammars are usually treated together in scholarly works, the terms A and B have proven useful.

Tocharian is documented in manuscript fragments, mostly from the 8th century (with a few earlier ones) that were written on palm leaves, wooden tablets and Chinese paper, preserved by the extremely dry climate of the Tarim Basin. Samples of the language have been discovered at sites in Kucha and Karasahr, including many mural inscriptions.

Tocharian A and B were not intercomprehensible. The common Proto-Tocharian language must have preceded the attested languages by several centuries, probably dating to the 1st millennium BC.

1.7.2. SOUTHERN INDO-EUROPEAN DIALECTS

I. GREEK



Greek is an Indo-European branch with a documented history of 3,500 years. Today, Modern Greek is spoken by 15 million people in Greece, Cyprus, the former Yugoslavia (especially in the FYROM), Bulgaria, Albania and Turkey.

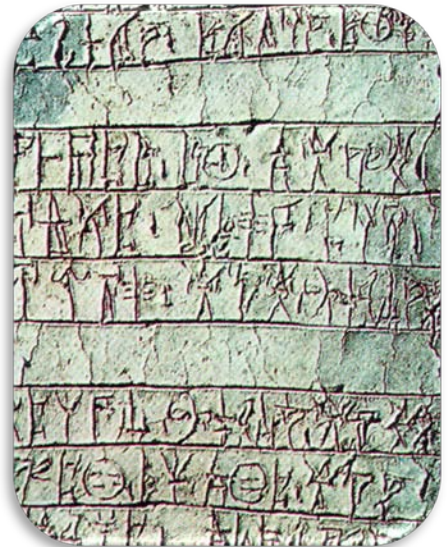
The major dialect groups of the Ancient Greek period can be assumed to have developed not later than 1120 BC, at the time of the Dorian invasions, and their first appearances as precise alphabetic writing began in the 8th century BC. The ancient Greeks themselves considered there to be three major divisions of the Greek people, into Dorians, Aeolians, and Ionians (including Athenians), each with their own defining and distinctive dialects. Allowing for their oversight of Arcadian, an obscure mountain dialect, and Cyprian, far from the center of Greek scholarship, this division of people and

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language is quite similar to the results of modern archaeological and linguistic investigation.

Greek has been spoken in the Balkan Peninsula since 2000 BC. The earliest evidence of this is found in the Linear B tablets dating from 1500 BC. The later Greek alphabet is unrelated to Linear B, and was derived from the Phoenician alphabet; with minor modifications, it is still used today.

Mycenaean is the most ancient attested form of the Greek branch, spoken on mainland Greece and on Crete in the 16th to 11th centuries BC, before the Dorian invasion. It is preserved in inscriptions in Linear B, a script invented on Crete before the 14th century BC. Most instances of these inscriptions are on clay tablets found in Knossos and in Pylos. The language is named after Mycenae, the first of the palaces to be excavated.



Linear B has roughly 200 signs, divided into syllabic signs with phonetic values and logograms with semantic values.

The tablets remained long undeciphered, and every conceivable language was suggested for them, until Michael Ventris deciphered the script in 1952 and proved the language to be an early form of Greek. The texts on the tablets are mostly lists and inventories. No prose narrative survives, much less myth or poetry. Still, much may be glimpsed from these records about the people who produced them, and about the Mycenaean period at the eve of the so-called Greek Dark Ages.

Unlike later varieties of Greek, Mycenaean probably had seven grammatical cases, the nominative, the genitive, the accusative, the dative, the instrumental, the locative, and the vocative. The instrumental and the locative however gradually fell out of use.

NOTE. For the Locative in **-ei*, compare *di-da-ka-re*, ‘*didaskaleĩ*’, *e-pi-ko-e*, ‘*Epikóheĩ*’, etc (in Greek there are syntactic compounds like *puloi-genēs*, ‘*born in Pylos*’); also, for remains of an Ablative case in **-ōd*, compare (months’ names) *ka-ra-e-ri-jo-me-no*, *wo-de-wi-jo-me-no*, etc.

Proto-Greek, a southern PIE dialect, was spoken in the late 3rd millennium BC, roughly at the same time as North-West Indo-European and Proto-Indo-Iranian, most probably in the Balkans. It was probably the ancestor of Phrygian too, and possibly that of Ancient

Macedonian, Dacian, Thracian, and arguably Armenian. The unity of Proto-Greek probably ended as Hellenic migrants, speaking the predecessor of the Mycenaean language, entered the Greek peninsula around the 21st century BC. They were then separated from the Dorian Greeks, who entered the peninsula roughly one millennium later, speaking a dialect that in some respects had remained more archaic.

NOTE. For Pelasgian and other Greek substrates as IE, some have cited different phonological developments in words like τυμβος (*tumbos* < PIE **d^hmb^hos*) or πυργος (*purgos* < PIE **b^hrg^hos*).

Proto-Greek was affected by a late *Satemization* trend, evidenced by the (post-Mycenaean) change of labiovelars into dentals before *e* (e.g. *k^we* → *te* “and”).

The primary sound changes from (laryngeal) PIE to Proto-Greek include:

- Aspiration of PIE intervocalic **s* → PGk *h*.

NOTE. The loss of PIE prevocalic **s*- was not completed entirely, famously evidenced by *sus* “sow”, *dasus* “dense”; *sun* “with”, sometimes considered contaminated with PIE **kom* (cf. Latin *cum*) to Homeric / Old Attic *ksun*, is possibly a consequence of Gk. psi-substrate (See Villar).

- De-voicing of voiced aspirates: **b^h* → *p^h*, **d^h* → *t^h*, **g^h* → *k^h*, **g^{wh}* → *k^{wh}*.
- Dissimilation of aspirates (Grassmann’s law), possibly post-Mycenaean.
- PIE word-initial **j*- (not **Hj*-) is strengthened to PGk *dj*- (later Gk. ζ-).
- Vocalization of laryngeals between vowels and initially before consonants, i.e. **h₁* → *e*, **h₂* → *a*, **h₃* → *o*.

NOTE. The evolution of Proto-Greek should be considered with the background of an early Palaeo-Balkan *Sprachbund* that makes it difficult to delineate exact boundaries between individual languages. The characteristically Greek representation of word-initial laryngeals by prosthetic vowels is shared by the Armenian language, which also shares other phonological and morphological peculiarities of Greek, *vide infra*.

- The sequence CRHC (where C = consonant, R = resonant, H = laryngeal) becomes PIE *CRh₁C* → PGk *CRēC*; PIE *CRh₂C* → PGk *CRāC*; PIE *CRh₃C* → PGk *CRōC*.
- The sequence PIE *CRHV* (where V = vowel) becomes PGk *CaRV*.

NOTE. It has also been proposed by Sihler (2000) that *Vk^w* → *uk^w*; cf. PIE **nok^wts*, “night” → PGk *nuk^wts* → Gk. *nuks/nuxt*-; cf. also **k^wek^wlos*, “circle” → PGk *k^wuk^wlos* → Gk. *kuklos*; etc.

Later sound changes between Proto-Greek and the attested Mycenaean include:

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- Loss of final stop consonants; final $m \rightarrow n$.
- Syllabic $m \rightarrow am$, and $n \rightarrow an$, before resonants; otherwise both were nasalized $m/\eta \rightarrow \tilde{a} \rightarrow a$.
- loss of s in consonant clusters, with supplementary lengthening, e.g. $esmi \rightarrow \tilde{e}mi$.
- creation of secondary s from clusters, $ntja \rightarrow nsa$. Assibilation $ti \rightarrow si$ only in southern dialects.
- Mycenaean i-vocalism and replacement of double-consonance $-kw-$ for $-k^wk^w-$.

NOTE. On the problematic case of common Greek ἵππος (*hippos*), *horse*, derived from PIE and PGK *ekwos*, Meier-Brügger (2003): “the i-vocalism of which is best understood as an inheritance from the Mycenaean period. At that time, *e* in a particular phonetic situation must have been pronounced in a more closed manner, cf. *di-pa* i.e. *dipas* neuter ‘lidded container for drinking’ vs. the later δῆρας (since Homer): Risch (1981), O. Panagl (1989). That the i-form extended to the entire Greek region may be explained in that the word, very central during Mycenaean rule of the entire region (2nd millennium BC), spread and suppressed the *e*-form that had certainly been present at one time. On the *-pp-*: The original double-consonance $-k_2-$ was likely replaced by $-k^wk^w-$ in the pre-Mycenaean period, and again, in turn by *-pp-* after the disappearance of the labiovelars. Suggestions of an ancient $-k^wk^w-$ are already given by the Mycenaean form as *i-qo* (a possible $*i-ko-wo$ does not appear) and the noted double-consonance in alphabetic Greek. The aspiration of the word at the beginning remains a riddle”.

Other features common to the earliest Greek dialects include:

- The PIE dative, instrumental and locative cases were syncretized into a single dative.
- Dialectal nominative plural in *-oi*, *-ai* fully replaces Late PIE common $*-\bar{o}s$, $*-\bar{a}s$.
- The superlative on *-tatos* (<PIE $*-t\eta-to-s$) becomes productive.
- The peculiar oblique stem *gunaik-* “women”, attested from the Thebes tablets is probably Proto-Greek; it appears, at least as *gunai-* also in Armenian.
- The pronouns *houtos*, *ekeinos* and *autos* are created. Use of *ho*, *hā*, *ton* as articles is post-Mycenaean.
- The first person middle verbal desinences *-mai*, *-mān* replace *-ai*, *-a*. The third singular *pherei* is an analogical innovation, replacing the expected PIE $*b^héreti$, i.e. Dor. $*pheretī$, Ion. $*pheresi$.
- The future tense is created, including a future passive, as well as an aorist passive.
- The suffix *-ka-* is attached to some perfects and aorists.

- Infinitives in *-ehen*, *-enai* and *-men* are also common to Greek dialects.

II. ARMENIAN

Armenian is an Indo-European language spoken in the Armenian Republic, as well as in the region of Nagorno-Karabakh, and also used by ethnic Armenians in the Diaspora.

Armenian has been traditionally regarded as a close relative of Phrygian, apparently closely related to Greek, sharing major isoglosses with it. The *Graeco-Armenian hypothesis* proposed a close relationship to the Greek language, putting both in the larger context of Paleo-Balkans languages – notably including Phrygian, which is widely accepted as an Indo-European language particularly close to Greek, and sometimes Ancient Macedonian –, consistent with Herodotus' recording of the Armenians as descending from colonists of the Phrygians.



Distribution of ethnic Armenians in the 20th c.

NOTE. That traditional linguistic theory, proposed by Pedersen (1924), establishes a close relationship between both original communities, Greek and Armenian, departing from a common subdialect of IE IIIa (Southern Dialect of Late PIE). That vision, accepted for a long time, was rejected by Clackson (1994) in *The linguistic relationship between Armenian and Greek*, which, supporting the *Graeco-Aryan* linguistic hypothesis, dismisses that the coincidences between Armenian and Greek represent more than those found in the comparison between any other IE language pair. Those findings are supported by Kortlandt in *Armeniaca* (2003), in which he proposes an old Central IE *continuum* Daco-Albanian / Graeco-Phrygian / Thraco-Armenian. Adrados (1998), considers an older Southern *continuum* Graeco-[Daco-]Thraco-Phrygian / Armenian / Indo-Iranian. Olteanu (2009) proposes a Graeco-Daco-Thracian language.

The earliest testimony of the Armenian language dates to the 5th century AD, the Bible translation of Mesrob Mashtots. The earlier history of the language is unclear and the

subject of much speculation. It is clear that Armenian is an Indo-European language, but its development is opaque.

NOTE. Proto-Armenian sound-laws are varied and eccentric, such as IE **dw-* yielding Arm. *k-*, and in many cases still uncertain. In fact, that phonetic development is usually seen as **dw-* to *erk-*, based on PIE numeral **dwo-*, “two”, a reconstruction Kortlandt (*ibidem*) dismisses, exposing alternative etymologies for the usual examples.

PIE voiceless stops are aspirated in Proto-Armenian, a circumstance that gave rise to the Glottalic theory, which postulates that this aspiration may have been sub-phonematic already in Proto-Indo-European. In certain contexts, these aspirated stops are further reduced to *w*, *h* or zero in Armenian – so e.g. PIE **p’ots*, into Arm. *otn*, Gk. *pous*, “foot”; PIE **t’reis*, Arm. *erek’*, Gk. *treis*, “three”.



Armenian manuscript, ca. 5th-6th c.

The reconstruction of Proto-Armenian being very uncertain, there is no general consensus on the date range when it might have been alive. If Herodotus is correct in deriving Armenians from Phrygian stock, the Armenian-Phrygian split would probably date to between roughly the 12th and 7th centuries BC, but the individual sound-laws leading to Proto-Armenian may have occurred at any time preceding the 5th century AD. The various layers of Persian and Greek loanwords were likely acquired over the course of centuries, during Urartian (pre-6th century BC) Achaemenid (6th to 4th c. BC; Old Persian), Hellenistic (4th to 2nd c. BC Koine Greek) and Parthian (2nd c. BC to 3rd c. AD; Middle Persian) times.

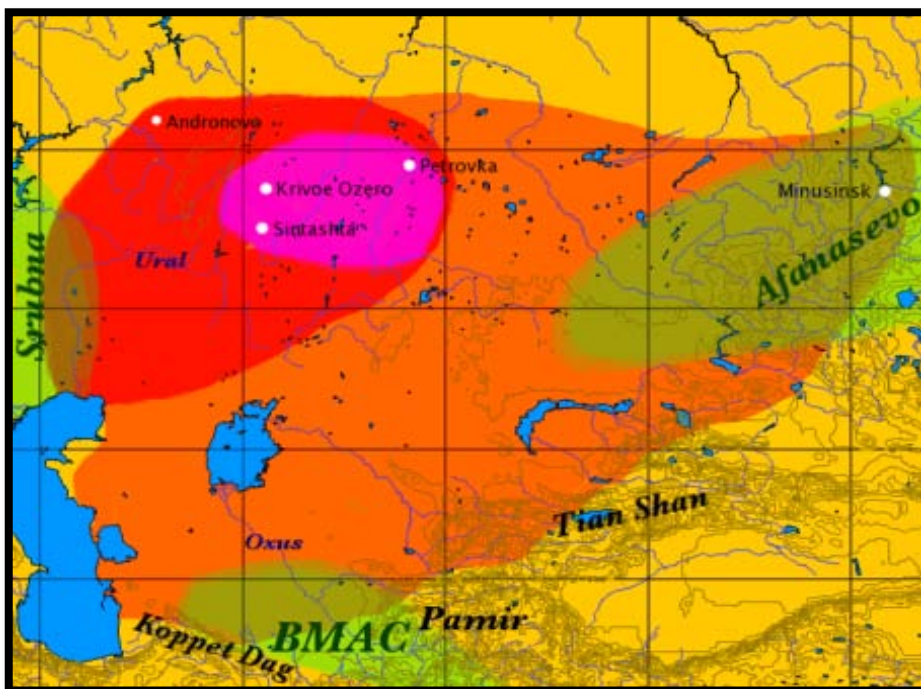
Grammatically, early forms of Armenian had much in common with classical Greek and Latin, but the modern language (like Modern Greek) has undergone many transformations. Interestingly enough, it shares with Italic dialects the secondary IE suffix **-tjōn*, extended from **-ti-*, cf. Arm թյուն (*t’youn*).

III. INDO-IRANIAN

The Indo-Iranian or Aryan language group constitutes the easternmost extant branch of the Indo-European family of languages. It consists of two main language groups, Indo-Aryan and Iranian, and probably Nuristani; Dardic is usually classified within the Indic subgroup.

The contemporary Indo-Iranian languages form therefore the second largest sub-branch of Indo-European (after North-West Indo-European), with more than one billion speakers in total, stretching from Europe (Romani) and the Caucasus (Ossetian) to East India (Bengali and Assamese). The largest in terms of native speakers are Hindustani (Hindi and Urdu, ca. 540 million), Bengali (ca. 200 million), Punjabi (ca. 100 million), Marathi and Persian (ca. 70 million each), Gujarati (ca. 45 million), Pashto (40 million), Oriya (ca. 30 million), Kurdish and Sindhi (ca. 20 million each).

Map of the Sintashta-Petrovka culture (red), its expansion into the Andronovo culture during the 2nd millennium BC, showing the overlap with the BMAC in the south. The location of the earliest chariots is shown in purple.



Proto-Indo-Iranians are commonly identified with the bearers of the Andronovo culture and their homeland with an area of the Eurasian steppe that borders the Ural River on the west, the Tian Shan on the east – where the Indo-Iranians took over the area occupied by the earlier Afanasevo culture –, and Transoxiana and the Hindu Kush

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on the south. Historical linguists broadly estimate that a continuum of Indo-Iranian languages probably began to diverge by 2000 BC, preceding both the Vedic and Iranian cultures. A Two-wave model of Indo-Iranian expansion have been proposed (see Burrow 1973 and Parpola 1999), strongly associated with the chariot.

Aryans spread into the Caucasus, the Iranian plateau, and South Asia, as well as into Mesopotamia and Syria, introducing the horse and chariot culture to this part of the world. Sumerian texts from EDIIIb Ngirsu (2500-2350 BC) already mention the 'chariot' (*gigir*) and Ur III texts (2150-2000 BC) mention the horse (*anshe-zi-zi*). They left linguistic remains in a Hittite horse-training manual written by one "Kikkuli the Mitannian". Other evidence is found in references to the names of Mitanni rulers and the gods they swore by in treaties; these remains are found in the archives of the Mitanni's neighbors, and the time period for this is about 1500 BC.

The standard model for the entry of the Indo-European languages into South Asia is that the First Wave went over the Hindu Kush, either into the headwaters of the Indus and later the Ganges. The earliest stratum of Vedic Sanskrit, preserved only in the Rigveda, is assigned to roughly 1500 BC. From the Indus, the Indo-Aryan languages spread from ca. 1500 BC to ca. 500 BC, over the northern and central parts of the subcontinent, sparing the extreme south. The Indo-Aryans in these areas established several powerful kingdoms and principalities in the region, from eastern Afghanistan to the doorstep of Bengal.

The Second Wave is interpreted as the Iranian wave. The Iranians would take over all of Central Asia, Iran, and for a considerable period, dominate the European steppe (the modern Ukraine) and intrude north into Russia and west into central and eastern Europe well into historic times and as late as the Common Era. The first Iranians to reach the Black Sea may have been the Cimmerians in the 8th century BC, although their linguistic affiliation is uncertain. They were followed by the Scythians, who are considered a western branch of the Central Asian Sakas, and the Sarmatian tribes.

The Medes, Parthians and Persians begin to appear on the Persian plateau from ca. 800 BC, and the Achaemenids replaced Elamite rule from 559 BC. Around the first millennium of the Common Era, the Iranian Pashtuns and Baloch began to settle on the eastern edge of the Iranian plateau, on the mountainous frontier of northwestern

Pakistan in what is now the North-West Frontier Province and Balochistan, displacing the earlier Indo-Aryans from the area.

The main changes separating Proto-Indo-Iranian from Late PIE include:

- Early *Satemization* trend:
 - Loss of PIE labiovelars into PII plain velars: $*k^w \rightarrow k$, $*g^w \rightarrow g$, $*g^{wh} \rightarrow g^h$.
 - Palatalization of PII velars in certain phonetic environments: $*k \rightarrow \check{k}$, $*g \rightarrow \check{g}$, $*g^h \rightarrow \check{g}^h$.
- Loss of laryngeals: $*HV \rightarrow a$, $*VH \rightarrow \bar{a}$. Interconsonantal $*H \rightarrow i$, cf. $*ph_2tér \rightarrow$ PII $pitár$.

NOTE. A common exception is the Brugmann's law. For those linguists who consider the laryngeal loss to have occurred already in Late PIE, Aryan vocalism is described as a collapse of PIE ablauting vowels into a single PII vowel; i.e. $*e, *o \rightarrow a$; $*\bar{e}, *\bar{o} \rightarrow \bar{a}$.

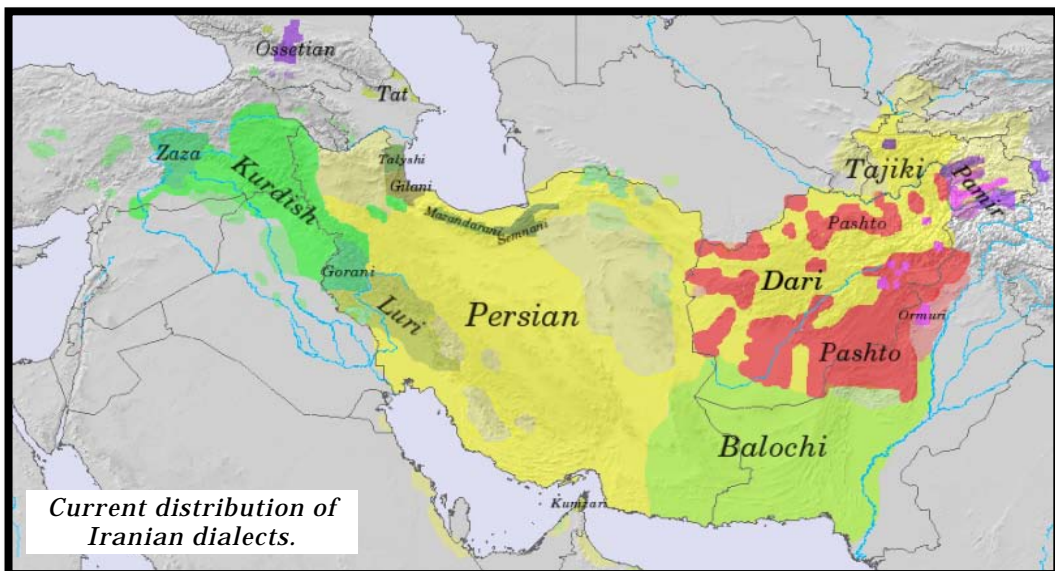
- Grassmann's law, Bartholomae's law, and the Ruki sound law were complete in PII.

NOTE. For a detailed description of those Indo-Iranian sound laws and the “*satemization*” process, see Appendix II. For Ruki sound law, v.s. Baltic in §1.7.1.

- Sonorants are generally stable in PII, but for the confusion $*l/*r$, which in the oldest Rigveda and in Avestan gives a general PIE $*l \rightarrow$ PII r , as well as $l \rightarrow r$.

Among the sound changes from Proto-Indo-Iranian to Indo-Aryan is the loss of the voiced sibilant $*z$; among those to Iranian is the de-aspiration of PIE voiced aspirates.

A. IRANIAN



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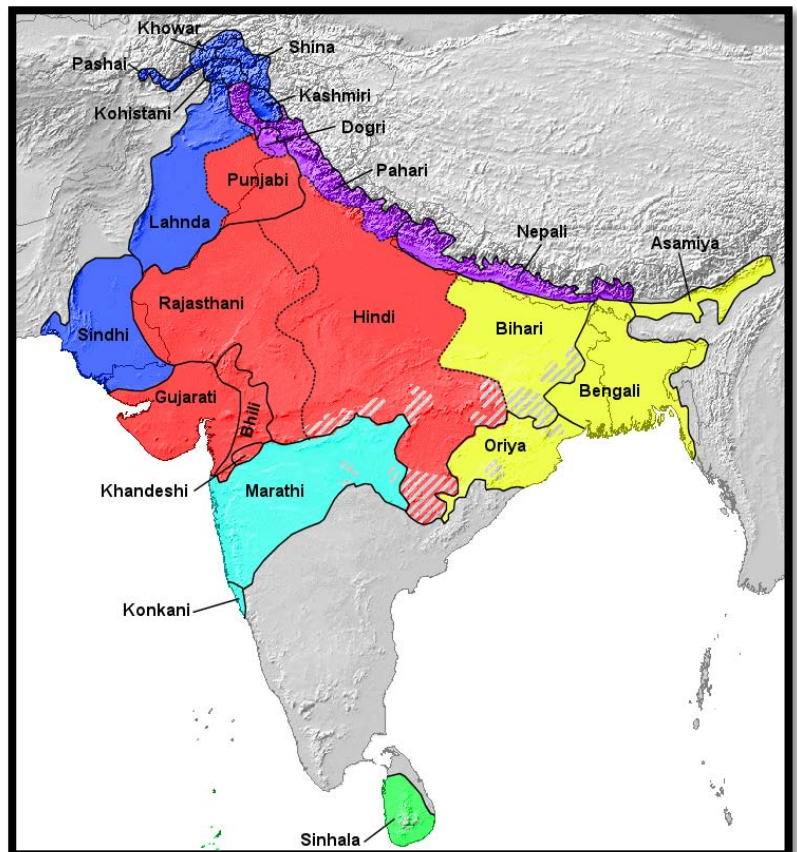
The Iranian languages are a branch of the Indo-Iranian subfamily, with an estimated 150-200 million native speakers today, the largest being Persian (ca. 60 million), Kurdish (ca. 25 million), Pashto (ca. 25 million) and Balochi (ca. 7 million).

Proto-Iranian dates to some time after the Proto-Indo-Iranian breakup, or the early second millennium BC, as the Old Iranian languages began to break off and evolve separately as the various Iranian tribes migrated and settled in vast areas of southeastern Europe, the Iranian plateau, and Central Asia. The oldest Iranian language known, Avestan, is mainly attested through the Avesta, a collection of sacred texts connected to the Zoroastrian religion.

Linguistically, the Old Iranian languages are divided into two major families, the Eastern and Western group, and several subclasses. The so-called Eastern group includes Scythian, even though the Scyths lived in a region extending further west than the Western group. The northwestern branch included Median, and Parthian, while the southwestern branch included Old Persian.

B. INDO-ARYAN

The Indo-Aryan or Indic languages are a branch of the Indo-Iranian subfamily with a total number of native speakers of more than 900 million. The largest languages in terms of native speakers are Hindustani (about 540 million), Bengali (about 200 million), Punjabi (about 100 million), Marathi



(about 90 million), Gujarati (about 45 million), Nepali (about 40 million), Oriya (about 30 million), Sindhi (about 20 million) and Assamese (about 14 million).

The earliest evidence of the group is from Vedic Sanskrit, the language used in the ancient preserved texts of the Indian subcontinent, the foundational canon of Hinduism known as the Vedas. The Indo-Aryan superstrate in Mitanni is of similar age as the Rigveda, but the only evidence is a number of loanwords.

In the 4th c. BC, the Sanskrit language was codified and standardised by the grammarian Panini, called “Classical Sanskrit” by convention. Outside the learned sphere of Sanskrit, vernacular dialects (Prakrits) continued to evolve and, in medieval times, diversified into various Middle Indic dialects.

C. NURISTANI

The recent view is to classify Nuristani as an independent branch of the Indo-Iranian language family, instead of the the Indic or Iranian group. In any event, it would seem they arrived in their present homeland at a very early date, and never entered the western Punjab of Pakistan.

1.7.3. OTHER INDO-EUROPEAN DIALECTS OF EUROPE

I. ALBANIAN

Albanian is spoken by over 8 million people primarily in Albania, Kosovo, and the Former Yugoslav Republic of Macedonia, but also by smaller numbers of ethnic Albanians in other parts of the Balkans, along the eastern coast of Italy and in Sicily, as well other emigrant groups.

The Albanian language has no living close relatives among the



Albanian dialects Gheg, Tosk. Communities of Arbëreshë- and Arvanitika-speakers

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modern IE languages. There is no consensus over its origin and dialectal classification, although some scholars derive it from Illyrian, and others claim that it derives from Thracian.

While it is considered established that the Albanians originated in the Balkans, the exact location from which they spread out is hard to pinpoint. Despite varied claims, the Albanians probably came from farther north and inland than would suggest the present borders of Albania, with a homeland concentrated in the mountains.

NOTE. Given the overwhelming amount of shepherding and mountaineering vocabulary as well as the extensive influence of Latin, it is more likely the Albanians come from north of the Jireček line, on the Latin-speaking side, perhaps in part from the late Roman province of *Dardania* from the western Balkans. However, archaeology has more convincingly pointed to the early Byzantine province of *Praevitana* (modern northern Albania) which shows an area where a primarily shepherding, transhumance population of Illyrians retained their culture.

The period in which Proto-Albanian and Latin interacted was protracted and drawn out over six centuries, 1st c. AD to 6th or 7th c. AD. This is born out into roughly three layers of borrowings, the largest number belonging to the second layer. The first, with the fewest borrowings, was a time of less important interaction. The final period, probably preceding the Slavic or Germanic invasions, also has a notably smaller amount of borrowings. Each layer is characterized by a different treatment of most vowels, the first layer having several that follow the evolution of Early Proto-Albanian into Albanian; later layers reflect vowel changes endemic to Late Latin and presumably Proto-Romance. Other formative changes include the syncretism of several noun case endings, especially in the plural, as well as a large scale palatalization.

A brief period followed, between 7th c. AD and 9th c. AD, that was marked by heavy borrowings from Southern Slavic, some of which predate the *o*→*a* shift common to the modern forms of this language group. Starting in the latter 9th c. AD, a period followed of protracted contact with the Proto-Romanians, or Vlachs, though lexical borrowing seems to have been mostly one sided – from Albanian into Romanian. Such a borrowing indicates that the Romanians migrated from an area where the majority was Slavic (i.e. Middle Bulgarian) to an area with a majority of Albanian speakers, i.e. Dardania, where Vlachs are recorded in the 10th c. AD. This fact places the Albanians at a rather early date

in the Western or Central Balkans, most likely in the region of Kosovo and Northern Albania.

References to the existence of Albanian as a distinct language survive from 14th c. AD, but without recording any specific words. The oldest surviving documents written in Albanian are the *Formula e Pagëzimit* (Baptismal formula), *Un'te paghesont' pr'emenit t'Atit e t'Birit e t'Spirit Senit*, “*I baptize thee in the name of the Father, and the Son, and the Holy Spirit*”, recorded by Pal Engjelli, Bishop of Dures in 1462 in the Gheg dialect, and some New Testament verses from that period.

II. PALEO-BALKAN LANGUAGES

A. PHRYGIAN

The Phrygian language was the IE language spoken by the Phrygians, a people that settled in Asia Minor during the Bronze Age. It survived probably into the 6th century AD, when it was replaced by Greek

Ancient historians and myths sometimes did associate Phrygian with Thracian and maybe even Armenian, on grounds of classical

sources. Herodotus recorded the Macedonian account that Phrygians migrated into Asia Minor from Thrace (7.73). Later in the text (7.73), Herodotus states that the Armenians were colonists of the Phrygians, still considered the same in the time of Xerxes I. The earliest mention of Phrygian in Greek sources, in the *Homeric Hymn to Aphrodite*, depicts it as different from Trojan: in the hymn, Aphrodite, disguising herself as a mortal to seduce the Trojan prince Anchises, tells him:

“*Otreus of famous name is my father, if so be you have heard of him, and he reigns over all Phrygia rich in fortresses. But I know your speech well beside my own, for a Trojan nurse brought me up at home*”. Of Trojan, unfortunately, nothing is known.



Phrygian region and expanded Kingdom.

1. Introduction

Phrygian is attested by two corpora, one, Palaeo-Phrygian, from around 800 BC and later, and another after a period of several centuries, Neo-Phrygian, from around the beginning of the Common Era. The Palaeo-Phrygian corpus is further divided geographically into inscriptions of Midas-city, Gordion, Central, Bithynia, Pteria, Tyana, Daskyleion, Bayindir, and “*various*” (*documents divers*). The Mysian inscriptions show a language classified as a separate Phrygian dialect, written in an alphabet with an additional letter, the “*Mysian s*”. We can reconstruct some words with the help of some inscriptions written with a script similar to the Greek one.

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Its structure, what can be recovered from it, was typically Indo-European, with nouns declined for case (at least four), gender (three) and number (singular and plural), while the verbs are conjugated for tense, voice, mood, person and number.

Phrygian seems to exhibit an augment, like Greek and Armenian, as in Phryg. *eberet*, probably corresponding to PIE **é-b^her-e-t* (cf. Gk. *epheret*).



*Phrygian inscription in
Midas City.*

A sizable body of Phrygian words are theoretically known; however, the meaning and etymologies and even correct forms of many Phrygian words (mostly extracted from inscriptions) are still being debated.

Phrygian words with possible PIE origin and Graeco-Armenian cognates include:

- Phryg. *bekos*, “bread”, from PIE **b^heh₃g-*; cf. Gk. *p^hōgō*, “to roast”.
- Phryg. *bedu*, “water”, from PIE **wed-*; cf. Arm. *get*, “river”.
- Phryg. *anar*, “husband”, “man”, PIE **h₂ner-*, “man”; cf. Gk. *aner-*, “man, husband”.
- Phryg. *belte*, “swamp”, from PIE root **b^hel-*, “to gleam”; cf. Gk. *baltos*, “swamp”.
- Phryg. *brater*, “brother”, from PIE **b^hreh₂ter-*; cf. Gk. *p^hrāter-*.
- Phryg. *ad-daket*, “does, causes”, from PIE stem **d^hē-k-*; cf. Gk. *et^hēka*.
- Phryg. *germe*, “warm”, from PIE **g^{wh}er-mo-*; cf. Gk. *thermos*.
- Phryg. *gdan*, “earth”, from PIE **d^hg^hom-*; cf. Gk. *k^hthōn*.

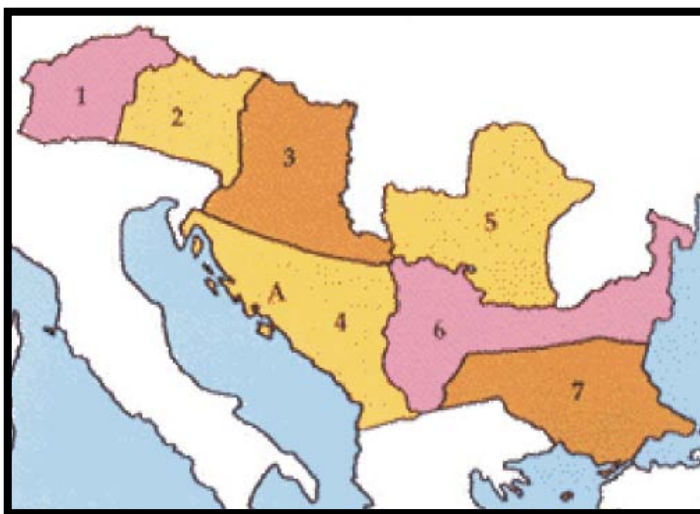
NOTE. For more information on similarities between Greek and Phrygian, see Neumann *Phrygisch und Griechisch* (1988).

B. ILLYRIAN

The Illyrian languages are a group of Indo-European languages that were spoken in the western part of the Balkans in former times by ethnic groups identified as *Illyrians*: Delmatae, Pannoni, Illyrioi, Autariates, Taulanti.

The main source of authoritative information about the Illyrian language consists of a handful of

Illyrian words cited in classical sources, and numerous examples of Illyrian anthroponyms, ethnonyms, toponyms and hydronyms. Some sound-changes and other



Roman provinces in the Balkans, 2nd century AD: A. Spalatum (Split); 1. Raetia; 2. Noricum; 3. Pannonia; 4. Illyricum; 5. Dacia; 6. Moesia; 7. Thracia.

1. Introduction

language features are deduced from what remains of the Illyrian languages, but because no writings in Illyrian are known, there is not sufficient evidence to clarify its place within the Indo-European language family aside from its probable *Centum* nature.

NOTE. A grouping of Illyrian with the Messapian language has been proposed for about a century, but remains an unproven hypothesis. The theory is based on classical sources, archaeology, as well as onomastic considerations. Messapian material culture bears a number of similarities to Illyrian material culture. Some Messapian anthroponyms have close Illyrian equivalents. A relation to the Venetic language and Liburnian language, once spoken in northeastern Italy and Liburnia respectively, is also proposed. A grouping of Illyrian with the Thracian and Dacian language in a “Thraco-Illyrian” group or branch, an idea popular in the first half of the 20th century, is now generally rejected due to a lack of sustaining evidence, and due to what may be evidence to the contrary. Also, the hypothesis that the modern Albanian language is a surviving Illyrian language remains very controversial among linguists.

B. THRACIAN

Excluding Dacian, whose status as a Thracian language is disputed, Thracian was spoken in what is now southern Bulgaria, parts of Serbia, the Republic of Macedonia, Northern Greece – especially prior to Ancient Macedonian expansion –, throughout Thrace (including European Turkey) and in parts of Bithynia (North-Western Asiatic Turkey). Most of the Thracians were eventually Hellenized (in the province of Thrace) or Romanized (in Moesia, Dacia, etc.), with the last remnants surviving in remote areas until the 5th century AD.

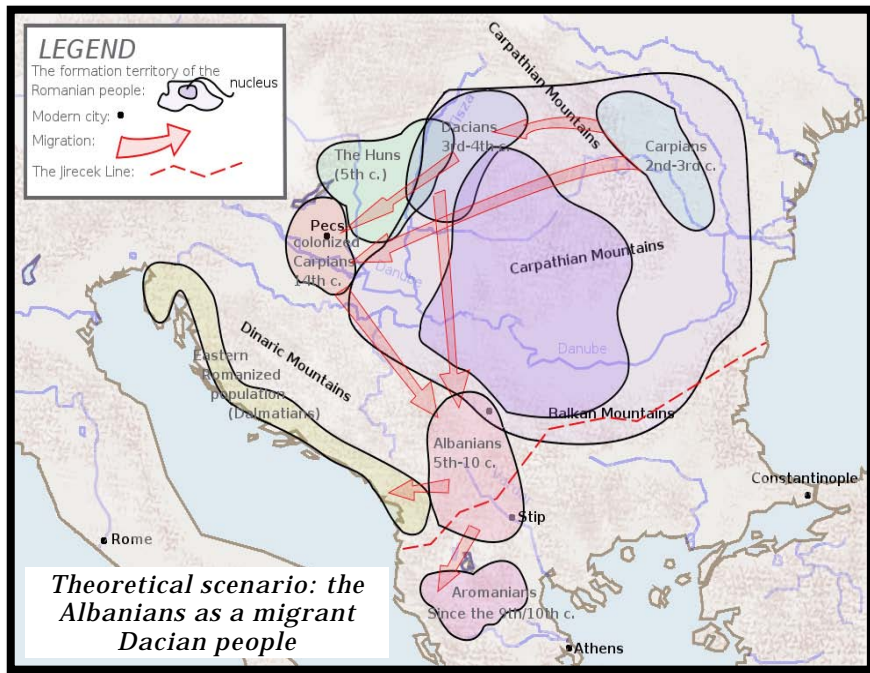
NOTE. As an extinct language with only a few short inscriptions attributed to it (*v.i.*), there is little known about the Thracian language, but a number of features are agreed upon. A number of probable Thracian words are found in inscriptions – most of them written with Greek script – on buildings, coins, and other artifacts. Some Greek lexical elements may derive from Thracian, such as *balios*, “*dappled*” (< PIE **b^hel-*, “*to shine*”, Pokorny also cites Illyrian as possible source), *bounos*, “*hill, mound*”, etc.

C. DACIAN

The Dacian language was an Indo-European language spoken by the ancient people of Dacia. It is often considered to have been either a northern variant of the Thracian language, or closely related to it.

There are almost no written documents in Dacian. Dacian used to be one of the major languages of South-Eastern Europe, stretching from what is now Eastern Hungary to the Black Sea shore. Based on archaeological findings, the origins of the Dacian culture are believed to be in Moldavia, being identified as an evolution of the Iron Age Basarabi culture.

It is unclear exactly when the Dacian language became extinct, or even whether it has a living descendant. The initial Roman conquest of part of Dacia did not put an end to the language, as free Dacian tribes



such as the Carpi may have continued to speak Dacian in Moldavia and adjacent regions as late as the 6th or 7th century AD, still capable of leaving some influences in the forming of Slavic languages.

According to the hypothesis of Hasdeu (1901), a branch of Dacian continued as the Albanian language. A refined version of that hypothesis considers Albanian to be a Daco-Moesian Dialect that split off before 300 BC, and that Dacian became extinct.

NOTE. The arguments for this early split before 300 BC include:

- Inherited Albanian words (e.g. PIE **mātēr* → Alb. *motër*) shows the evolution PIE **ā* → Alb. *o*, but all the Latin loans in Albanian having an *ā* (<PIE **ā*) shows Lat. *ā* → Alb. *a*. Therefore, the transformation happened and ended before the Roman arrival in the Balkans.
- Romanian substratum words shared with Albanian show a Rom. *a* that corresponds to Alb. *o* when the source for both sounds is an original common *ā* (cf. *mazāre/modhull* < **mādzula*,

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“pea”; *raṭā/roṣë* < **rātja*: “duck”); therefore, when these words had the same common form in Pre-Romanian and Proto-Albanian the transformation PIE **ā* → Alb. *o* had not started yet.

The correlation between these two facts could indicate that the split between Pre-Romanian (the Dacians later Romanized) and Proto-Albanian happened before the Roman arrival in the Balkans.

E. PAIONIAN

The Paionian language is the poorly attested language of the ancient Paionians, whose kingdom once stretched north of Macedon into Dardania and in earlier times into southwestern Thrace.

Classical sources usually considered the Paionians distinct from Thracians or Illyrians, comprising their own ethnicity and language. Athenaeus seemingly connected the Paionian tongue to the Mysian language, itself barely attested. If correct, this could mean that Paionian was an Anatolian language. On the other hand, the Paionians were sometimes regarded as descendants of Phrygians, which may put Paionian on the same linguistic branch as the Phrygian language.

NOTE. Modern linguists are uncertain on the classification of Paionian, due to the extreme scarcity of materials we have on this language. However, it seems that Paionian was an independent IE dialect. It shows a/o distinction and does not appear to have undergone Satemization. The Indo-European voiced aspirates became plain voiced consonants, i.e. **b^h* → *b*, **d^h* → *d*, **g^h* → *g*, **g^{wh}* → *g^w*; as in Illyrian, Thracian, Macedonian and Phrygian (but unlike Greek).

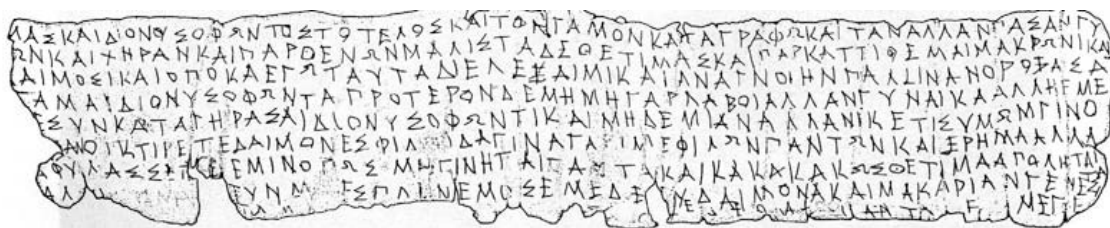
F. ANCIENT MACEDONIAN

The Ancient Macedonian language was the tongue of the Ancient Macedonians. It was spoken in Macedon during the 1st millennium BC. Marginalized from the 5th century BC, it was gradually replaced by the common Greek dialect of the Hellenistic Era. It was probably spoken predominantly in the inland regions away from the coast. It is as yet undetermined whether the language was a dialect of Greek, a sibling language to Greek, or an Indo-European language which is a close cousin to Greek and also related to Thracian and Phrygian languages.

Knowledge of the language is very limited because there are no surviving texts that are indisputably written in the language, though a body of authentic Macedonian words has been assembled from ancient sources, mainly from coin inscriptions, and from the 5th

century lexicon of Hesychius of Alexandria, amounting to about 150 words and 200 proper names. Most of these are confidently identifiable as Greek, but some of them are not easily reconciled with standard Greek phonology. The 6,000 surviving Macedonian inscriptions are in the Greek Attic dialect.

The Pella curse tablet, a text written in a distinct Doric Greek idiom, found in Pella in 1986, dated to between mid to early 4th century BC, has been forwarded as an argument that the Ancient Macedonian language was a dialect of North-Western Greek. Before the discovery it was proposed that the Macedonian dialect was an early form of Greek, spoken alongside Doric proper at that time.



The Pella katadesmos, is a katadesmos (a curse, or magic spell) inscribed on a lead scroll, probably dating to between 380 and 350 BC. It was found in Pella in 1986

NOTE. Olivier Masson thinks that “in contrast with earlier views which made of it an Aeolic dialect (O.Hoffmann compared Thessalian) we must by now think of a link with North-West Greek (Locrian, Aetolian, Phocidian, Epirote). This view is supported by the recent discovery at Pella of a curse tablet which may well be the first ‘Macedonian’ text attested (...); the text includes an adverb “opoka” which is not Thessalian”. Also, James L. O’Neil states that the “curse tablet from Pella shows word forms which are clearly Doric, but a different form of Doric from any of the west Greek dialects of areas adjoining Macedon. Three other, very brief, fourth century inscriptions are also indubitably Doric. These show that a Doric dialect was spoken in Macedon, as we would expect from the West Greek forms of Greek names found in Macedon. And yet later Macedonian inscriptions are in Koine avoiding both Doric forms and the Macedonian voicing of consonants. The native Macedonian dialect had become unsuitable for written documents.”

From the few words that survive, a notable sound-law may be ascertained, that PIE voiced aspirates **d^h*, **b^h*, **g^h*, appear as δ (=d^h), β (=b^h), γ (=g^h), in contrast to Greek dialects, which unvoiced them to θ (=t^h), φ (=p^h), χ (=k^h).

NOTE. Since these languages are all known via the Greek alphabet, which has no signs for voiced aspirates, it is unclear whether de-aspiration had really taken place, or whether the supposed voiced stops β, δ, γ were just picked as the closest matches to express voiced aspirates PIE **b^h*, **d^h*,

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**g^h*. As to Macedonian β, δ, γ = Greek φ, θ, χ, Claude Brixhe[(1996) suggests that it may have been a later development: The letters may already have designated not voiced stops, i.e. [b, d, g], but voiced fricatives, i.e. [β, δ, γ], due to a voicing of the voiceless fricatives [φ, θ, χ] (= Classical Attic [p^h, t^h, k^h]). Brian Joseph (2001) sums up that “The slender evidence is open to different interpretations, so that no definitive answer is really possible”, but cautions that “most likely, Ancient Macedonian was not simply an Ancient Greek dialect on a par with Attic or Aeolic”. In this sense, some authors also call it a “deviant Greek dialect”.

- PIE **d^henh₂*-, “to leave”, → A.Mac. δανός (*danós*), “death”; cf. Attic θάνατος (*t^hánatos*).
PIE **h₂aid^h*- → A.Mac. ἄδραια (*adraia*), ‘bright weather’, Attic αἰθρία (*ait^hría*).
- PIE **b^hasko-* → A.Mac. βάσκιτοι (*βάσκιοι*), “fasces”. Compare also for A.Mac. ἀβροῦτες (*abroûtes*) or ἀβροῦφες (*abroûwes*), Attic ὀφρῦς (*oph^hrûs*), “eyebrows”; for Mac. Βερενίκη (*Berenikē*), Attic Φερενίκη (*P^herenikē*), “bearing victory”.
 - According to Herodotus (ca. 440 BC), the Macedonians claimed that the *Phryges* were called *Brygoi* (<PIE **b^hrugo-*) before they migrated from Thrace to Anatolia ca. 1200 BC.
 - In Aristophanes’ *The Birds*, the form κεβλήπυρις (*keblēpyris*), “red-cap bird”, shows a voiced stop instead of a standard Greek unvoiced aspirate, i.e. Macedonian κεβ(α)λή (*kebalē*) vs. Greek κεφαλή (*kep^halē*), “head”.
- If A.Mac. γοτάν (*gotán*), “pig”, is related to PIE **g^wou-*, “cow”, this would indicate that the labiovelars were either intact (hence **g^wotán*), or merged with the velars, unlike the usual Gk. βοῦς (*boûs*).

NOTE. Such deviations, however, are not unknown within Greek dialects; compare Dor. γλεπ- (*glep-*) for common Gk. βλεπ- (*blep-*), as well as Dor. γλάχων (*gláchōn*) and Ion. γλήχων (*glēchōn*) for Gk. βλήχων (*blēchōn*).

- Examples suggest that voiced velar stops were devoiced, especially word-initially: PIE **genu-* → A.Mac. κánaδοι (*kánadoi*), “jaws”; PIE **gomb^h*- → A.Mac. κόμβους (*kómbous*), “molars”.
 - Compared to Greek words, there is A.Mac. ἀρκόν (*arkón*) vs. Attic ἀργός (*argós*); the Macedonian toponym *Akesamenai*, from the Pierian name *Akesamenos* – if *Akesa-* is cognate to Greek *agassomai*, *agamai*, “to astonish”; cf. also the Thracian name *Agassamenos*.

1.7.4. ANATOLIAN LANGUAGES

The Anatolian languages are a group of extinct Indo-European languages, which were spoken in Anatolia for millennia, the best attested of them being the Hittite language.

The Anatolian branch is generally considered the earliest to split off the Proto-Indo-European language, from a stage referred to either as Middle PIE or “Proto-Indo-Hittite” (PIH), typically a date ca. 4500-3500 BC is assumed. Within a Kurgan framework, there are two possibilities of how early Anatolian speakers could have reached Anatolia: from the north via the Caucasus, and from the west, via the Balkans.



The approximate extent of the Hittite Old Kingdom under Hantili I (ca. 1590 BC) in **darkest**. Maximal extent of the Hittite Empire ca. 1300 BC is shown in **dark color**, the Egyptian sphere of influence in **light color**.

NOTE. The term *Indo-Hittite* is somewhat imprecise, as the prefix *Indo-* does not refer to the Indo-Aryan branch in particular, but is iconic for *Indo-European* (as in *Indo-Uralic*), and the *-Hittite* part refers to the Anatolian language family as a whole.

Attested dialects of the Anatolian branch are:

- Hittite (*nesili*), attested from ca. 1800 BC to 1100 BC, official language of the Hittite Empire.
- Luwian (*luwili*), close relative of Hittite spoken in Arzawa, to the southwest of the core Hittite area.
- Palaic, spoken in north-central Anatolia, extinct around the 13th century BC, known only fragmentarily from quoted prayers in Hittite texts.
- Lycian, spoken in Lycia in the Iron Age, most likely a descendant of Luwian, extinct in ca. the 1st century BC. A fragmentary language, it is also a likely candidate for the language spoken by Trojans.

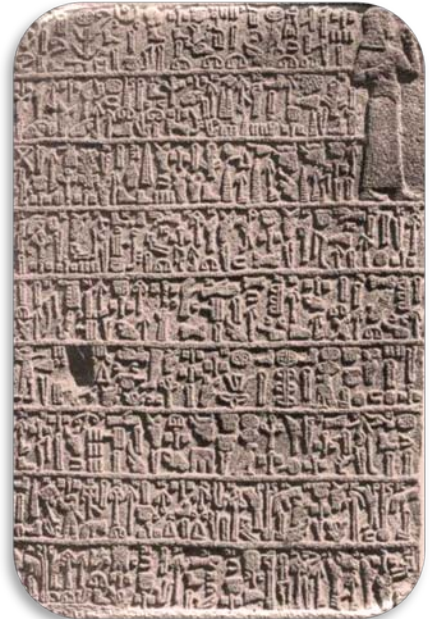
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- Lydian, spoken in Lydia, extinct in ca. the 1st century BC, fragmentary.
- Carian, spoken in Caria, fragmentarily attested from graffiti by Carian mercenaries in Egypt from ca. the 7th century BC, extinct ca. in the 3rd century BC.
- Pisidian and Sidetic (Pamphylian), fragmentary.
- Milyan, known from a single inscription.

There were likely other languages of the Anatolian branch that have left no written records, such as the languages of Mysia, Cappadocia and Paphlagonia.

Anatolia was heavily Hellenized following the conquests of Alexander the Great, and it is generally thought that by the 1st century BC the native languages of the area were extinct.

Hittite proper is known from cuneiform tablets and inscriptions erected by the Hittite kings and written in an adapted form of Old Assyrian



Hittite pictographic writing

cuneiform orthography. Owing to the predominantly syllabic nature of the script, it is difficult to ascertain the precise phonetic qualities of some Hittite sounds.

NOTE. The script known as “Hieroglyphic Hittite” has now been shown to have been used for writing the closely related Luwian language, rather than Hittite proper. The later languages Lycian and Lydian are also attested in Hittite territory.

The Hittite language has traditionally been stratified – partly on linguistic and partly on paleographic grounds – into Old Hittite, Middle Hittite and New or Neo-Hittite, corresponding to the Old, Middle and New Kingdoms of the Hittite Empire, ca. 1750-1500 BC, 1500-1430 BC and 1430-1180 BC, respectively.

Luwian was spoken by population groups in Arzawa, to the west or southwest of the core Hittite area. In the oldest texts, e.g. the Hittite Code, the Luwian-speaking areas including Arzawa and Kizzuwatna were called Luwia. From this homeland, Luwian speakers gradually spread through Anatolia and became a contributing factor to the

downfall, after circa 1180 BC, of the Hittite Empire, where it was already widely spoken. Luwian was also the language spoken in the Neo-Hittite states of Syria, such as Milid and Carchemish, as well as in the central Anatolian kingdom of Tabal that flourished around 900 BC. Luwian has been preserved in two forms, named after the writing systems used: Cuneiform Luwian and Hieroglyphic Luwian.



Luwian use according to inscriptions found

For the most part, the immediate ancestor of the known Anatolian languages, Common Anatolian (the Late Proto-Anatolian dialect spoken ca. 2500) has been reconstructed on the basis of Hittite. However, the usage of Hittite cuneiform writing system limits the enterprise of understanding and reconstructing Anatolian phonology, partly due to the deficiency of the adopted Akkadian cuneiform syllabary to represent Hittite sounds, and partly due to the Hittite scribal practices.

NOTE 1. This especially pertains to what appears to be confusion of voiceless and voiced dental stops, where signs -dV- and -tV- are employed interchangeably different attestations of the same word. Furthermore, in the syllables of the structure VC only the signs with voiceless stops are generally used. Distribution of spellings with single and geminated consonants in the oldest extant monuments indicates that the reflexes of PIE voiceless stops were spelled as double consonants and the reflexes of Proto-Indo-European voiced stops as single consonants. This regularity is the most consistent in the case of dental stops in older texts; later monuments often show irregular variation of this rule.

NOTE 2. For a defence of Etruscan as an IE language, classified within the Anatolian branch, see Adrados (2005) at <<http://emerita.revistas.csic.es/index.php/emerita/article/viewArticle/52>>.

Known changes from Middle PIE into Common Anatolian include:

- Voiced aspirates merged with voiced stops: $*d^h \rightarrow d$, $*b^h \rightarrow b$, $*g^h \rightarrow g$.

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- Voiceless stops become voiced after accented long-vowel or diphthong: PIH **wēk-* → CA *wēg-* (cf. Hitt. *wēk-*, “ask for”); PIH **d^heh₁ti*, “putting” → CA *dādi* (cf. Luw. *taac-* “votive offering”).
- Conditioned allophone PIH **tj-* → CA *tsj-*, as Hittite still shows.
- PIH **h₁* is lost in CA, but for **eh₁→ā*, appearing as Hitt., Pal. *ē*, Luw., Lyc., Lyd. *ā*; word-initial **h₂→x*, non-initial **h₂→h*; **h₃→h*.

NOTE 1. Melchert proposes that CA *x* (voiceless fricative) is “lenited” to *h* (voiced fricative) under the same conditions as voiceless stops. Also, word-initial **h₃* is assumed by some scholars to have been lost already in CA.

NOTE 2. There is an important assimilation of laryngeals within CA: a sequence -VRHV- becomes -VRRV-; cf. PIH **sperh₁V-* → Hitt. *isparr-*, “kick flat”; PIH **sun-h₃-V-* → Hitt. *sunna-*, “fill”, Pal. *sunnuttil-*, “outpouring”; etc.

- PIH sonorants are generally stable in CA. Only word-initial **r̥* has been eliminated. Word-initial **je-* shows a trend to become CA *e-*, but the trend is not complete in CA, as Hittite shows.
- Diphthong evolved as PIH **ei* → CA long *ē*; PIH **eu* → CA *ū*. PIE **oi*, **ai*, **ou*, **au*, appear also in CA.

NOTE. Common Anatolian preserves PIE vowel system basically intact. Some cite the merger of PIH **o* and (controversial) **a* as a Common Anatolian innovation, but according to Melchert that merger was secondary shared innovation in Hittite, Palaic and Luwian, but not in Lycian. Also, the lengthening of accented short vowels in open syllables cannot be of Common Anatolian, and neither can lengthening in accented closed syllables.

- The CA nominal system shows an archaic productive declension in **-i*, **-u*. There are only two grammatical genders, animate and inanimate.
- Hittite verbs are inflected according to two general verbal classes, the *mi-* and the *hi-*conjugation.

NOTE. Rose (2006) lists 132 *hi-*verbs and interprets the *hi/mi* oppositions as vestiges of a system of grammatical voice, i.e. “centripetal voice” vs. “centrifugal voice”. Additionally, the Hittite verbal system displays two voices (active and mediopassive), two moods (indicative and imperative), and two tenses (present and preterite), two infinitive forms, one verbal substantive, a supine, and a participle.

1.8. MODERN INDO-EUROPEAN

1.8.1. Modern Indo-European (MIE) is therefore a set of grammatical rules – including its writing system, noun declension, verbal conjugation and syntax –, designed to systematize the reconstructed Proto-Indo-European dialect North-West Indo-European – described (v.s.) as the last *IE dialect continuum* (spoken in Europe for some centuries within the time frame 3000-2000 BC) – to adapt it to modern communication needs.

Because such PIE dialects were spoken by prehistoric societies, no genuine sample texts are available, and thus comparative linguistics – in spite of its 200 years' history – is not (and will not be) in the position to reconstruct exactly their formal languages (the one used by learned people at the time), but only approximately how the spoken, vulgar languages were like, i.e. the proto-languages that later evolved into the different attested Indo-European dialects and languages.

NOTE. Reconstructed languages like Modern Hebrew, Modern Cornish, Modern Coptic, Modern Prussian or Modern Indo-European may be revived in their communities without being as *easy*, as *logical*, as *neutral* or as *philosophical* as the million artificial languages that exist today, and whose main aim is to be supposedly '*better*', or '*easier*', or '*more neutral*' than other artificial or natural languages they want to substitute. Whatever the sociological, psychological, political or practical reasons behind the success of such '*difficult*' and '*non-neutral*' natural languages instead of 'universal' ones, what is certain is that if somebody learns Hebrew, Cornish, Coptic, Prussian or Indo-European (or Latin, Gothic, Greek, Sanskrit, etc.), whatever the changes in the morphology, syntax or vocabulary that could follow (because of, say, '*better*' or '*purser*' or '*easier*' language systems recommended by their language regulators), the language learnt will still be the same, and the effort made won't be lost in any possible case. That cannot be said of personal inventions.

1.8.2. We deemed it worth it to use the Proto-Indo-European reconstruction for the revival of a complete modern language system, because of the obvious need for a common language within the EU, to substitute the current deficient linguistic policy. This language system, called *European* or *European language* (**eurōpājóm**), is mainly based on the features of the European or Northwestern IE dialects, whose speakers – as we have already seen – remained in close contact for some centuries after the first Late PIE migrations, and have influenced each other in the last millennia within Europe.

NOTE. As Indo-Europeanist F. López-Menchero (2008) puts it, "there are 'three (Late) Proto-Indo-European languages' which might be distinguished today:

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1) The actual Proto-Indo-European language and its early dialects, spoken by prehistoric peoples of Eurasia in the Neolithic and Bronze Age, some millennia ago;

2) the reconstructed Late Proto-Indo-European language system, which has been studied by IE scholars using the linguistic, archaeological and historical data available, and which is (and will remain) imperfect by nature, based on more or less certain hypotheses and schools of thought; and

3) the modern Indo-European language systems (European, Hellenic, Aryan) which, being based on the later, and trying to come near to the former, are neither one nor the other, but modern languages systematized to be used in the modern world”.

NOTE 2. In that sense, some critics have considered the so-called “*Indo-European language revival*” to be different from (and thus not comparable to) other language revivals, like – as they put it – Hebrew or Cornish, because of the ‘obvious differences that will exist between that ancient North-West Indo-European language and the Modern Indo-European or European language’. It is important to note that, even though there is a general belief that Modern Hebrew and Ancient Hebrew are the same languages, among Israeli scholars there have been continued calls for the “Modern Hebrew” language to be called “Israeli Hebrew” or just (preferably) “Israeli”, due to the strong divergences that exist – and further develop with its use – between the modern language spoken in Israel and its theoretical basis, the Ancient Hebrew of the Tanakh, its contents (and language variations) having being compiled probably between 450-200 BC, i.e when the language was being substituted by Aramaic. On that interesting question, Prof. Ghil’ad Zuckermann considers that “Israelis are brainwashed to believe they speak the same language as the prophet Isaiah, a purely Semitic language, but this is false. It’s time we acknowledge that Israeli is very different from the Hebrew of the past”. He points out to the abiding influence of modern Indo-European dialects – especially Yiddish, Russian and Polish –, in vocabulary, syntax and phonetics, as imported by Israel’s founders. The same could certainly be said of Cornish and other language revivals, and even of some death languages with a continued use, like the Modern Latin language used by the Catholic Church, which is not comparable to the Classical Latin used by Cicero, not to talk about the real, Vulgar Latin used by the different peoples who lived in the Roman Empire.

1.8.3. Late Proto-Indo-European features that are common to early PIE dialects (mainly North-West IE, Proto-Greek and Proto-Indo-Iranian), like nominal and verbal inflection, morphology and syntax, make it possible for PIE to be proposed as *Dachsprache* for an *Indo-European International Auxiliary Language* project. Obviously, French, German, Spanish, Hindustani, Chinese, and other natural and artificial languages proposed to substitute English dominance, are only supported by their cultural or social communities, whereas IE native speakers make up the majority of

the world's population, being thus the most 'democratic' choice for a language spoken within international organizations and between the different existing nations.

NOTE 1. Because Modern Indo-European (a revived North-West IE proto-language) has other sister dialects that were spoken by coeval prehistoric communities, languages like Modern Hellenic (a revived Proto-Greek) and Modern Aryan (a revived Proto-Indo-Iranian) can also be used in the regions where they are currently spoken in the form of their surviving dialects, as those proto-languages were not much more different from North-West IE than Swedish from Danish, or Spanish from Portuguese. They might also serve as *linguae francae* for closely related languages or neighbouring regions, i.e. Aryan for Asia, Hellenic for and Armenian-speaking territories.

Anatolianism (Turkish *Anadoluculuk*) asserts that Turks descend from the indigenous population of ancient Anatolia, based on historical and genetic views. Supported by Turkish intellectuals in the 20th century, it became essential to the process of nation-building in Turkey, but was substituted by the Pan-Turkic nationalism Mustafa Kemal Atatürk had discouraged before his death. If accepted again, Turks could embrace their historical culture by adopting Modern Anatolian (a revived Common Anatolian, "*cousin dialect*" of EIE, PGk. and PII) as a modern second language for Turkey, which shares close historical and cultural ties with Europe and Asia.

NOTE 2. The terms *Ausbausprache-Abstandsprache-Dachsprache* were coined by Heinz Kloss (1967), and they are designed to capture the idea that there are two separate and largely independent sets of criteria and arguments for calling a variety an independent "language" rather than a "dialect": the one based on its social functions, and the other based on its objective structural properties. A variety is called an *ausbau language* if it is used autonomously with respect to other related languages. This typically means that it has its own standardized form independent of neighbouring standard languages, like (in this hypothetical future) Modern Indo-European in Europe and the Americas, Modern Aryan in Asia. This often involves being taught in schools, and being used as a written language in a wide variety of functions, possibly including that of an official national language. In contrast, varieties that are *abstand languages* are those that are only spoken and typically only used in private contexts.

Dachsprache means a language form that serves as standard language for different dialects, even though these dialects may be so different that mutual intelligibility is not possible on the basilectal level between all dialects, particularly those separated by significant geographical distance. So e.g. the *Rumantsch Grischun* developed by Heinrich Schmid (1982) as such a *Dachsprache* for a number of quite different Romansh language forms spoken in parts of Switzerland; or the *Euskara Batua*, "Standard Basque", and the Southern Quechua literary standard, both developed as standard languages for dialect continua that had historically been thought of as discrete languages

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with many dialects and no “official” dialect. Standard German and standard Italian to some extent function in the same way. Perhaps the most widely used *Dachsprache* is Modern Standard Arabic, which links together the speakers of many different, often mutually unintelligible Arabic dialects. Hence a *Standard Indo-European*, which might take rules from Late Proto-Indo-European reconstruction and the Modern Indo-European rules presented here, would be the wide *Dachsprache* necessary to encompass (i.e. to serve as linguistic umbrella for) the modern revival of early PIE dialects.

NOTE 3. Our proposal is different from the Hebrew language revival, but we think that:

a) The reconstruction of a common Late PIE (laryngeal?) phonology, nominal or verbal inflection system results at best mainly in abstract *formulae* or vague approximations – following the dissertation of Mallory & Adams (v.s. § 1.1.8) –; they are very useful for a Standard Indo-European *Dachsprache*, but the reconstruction unfortunately does not have enough certainty to be used for a common, modern revived language. Reconstructions of early PIE dialects, on the other hand, result in approximations with strong statistical confidence, offering a practical system for common West European, Greek and Indo-Iranian phonetics and inflection system, but they lack enough data on their oldest morphology, syntax and vocabulary, which were obscured by later innovations. Therefore, reconstructions of Late PIE and early PIE dialects complement each other.

b) Where Zionism had only some formal writings, with limited vocabulary, of an ancient language already dead centuries before their latest sacred texts were compiled (ca. 200 BC), and their people expelled from Israel (in 70 AD), Pro-Europeanism and Indo-Europeanism have PIE and its early dialects (EIE, PGk and PII) with a continued history of use in Eurasia and hundreds of living dialects, and other very old dead dialects attested, so that their modern revival can be considered ‘less artificial’. Thus, even if Europeans had tablets dating from 2000 BC in some dialectal predominant formal EIE language (say, from Pre-Germanic or Pre-Celtic IE), the current North-West Indo-European reconstruction should probably still be used as the main source for Indo-European language revival in the European Union. Just taking a look at Mycenaean inscriptions and its difficult phonetic decipherment is enough to realize how little EIE reconstruction would change if writings were found.

c) The common culture and religion was probably the basis for the Hebrew language revival in Israel. Proto-Indo-European, whilst the mother tongue of some prehistoric tribe with an own culture and religion, spread into different peoples, with different cultures and religions. There was never a concept of “*Indo-European community*” after the migrations. However, Indo-European languages are spoken today by the majority of the population – in the world and especially within Europe –, and its early dialects spread into two main communities, EIE and PGk in Europe, PII in

South Asia. It is therefore possible to speak them as *natural*, *cultural* and *national* common languages, what may be a significant advantage of IE as IAL over any other natural language.

Also, blessed Anne Catherine Emmerich (1774-1824), a Roman Catholic Augustinian nun, stigmatic, mystic, visionary and ecstatic, had revelations about the Confusion of Tongues (Genesis 11:1-9): “*Upon Heber who, as we have said, took no part in the work, God cast His eyes; and amid the general disorder and corruption, He set him and his posterity apart as a holy nation. God gave him also a new and holy language possessed by no other nation, that thereby his race should be cut off from communication with all others. This language was the pure Hebrew, or Chaldaic* [=NW Semitic]. *The first tongue, the mother tongue,*



spoken by Adam, Sem, and Noe, was different, and it is now extant only in isolated dialects. Its first pure offshoots are the Zend, the sacred tongue of India, and the language of the Bactrians [=early Indo-Iranian dialects]. *In those languages, words may be found exactly similar to the Low German of my native place* [=any modern EIE regional dialect]. *The book that I see in modern Ctesiphon* [=Greek colony, site of church councils of the Church of the East], *on the Tigris, is written in that language* [=a PGk dialect]”. Her visions receive particular veneration from Traditional Catholics, and this one refers clearly to the three “isolated dialects” (PII, EIE and PGk) derived directly from the *confounded* divine tongue – which some have since identified as the common Proto-Indo-European language – spoken until ca. 3000-2500 BC according to Biblical chronology and archaeological findings of the great temple towers (*ziggurats*) of ancient Sumer. For the Catholic Catechism, the Genesis “uses figurative language, but affirms a primeval event”, see <http://www.catholic.com/library/Adam_Eve_and_Evolution.asp>.

1.8.4. Modern Indo-European words to complete the lexicon of North-West Indo-European, in case that no common PIE form is found, are to be loan-translated from present-day North-West IE languages. Common loan words from sister dialects can also be loan-translated or taken as (proto-language) loan words.

NOTE 1. Even though the vocabulary reconstructible for early PIE languages is indeed wider than the common Proto-Indo-European lexicon, a remark of Mallory & Adams (2006) regarding

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reconstructible Common PIE words is interesting: “Yet we know that our reconstructed lexicon falls far short of the full language, e.g. we can reconstruct ‘eye’ and ‘eyebrow’ but not ‘eyelash’. We can most easily gain an impression of what may be missing when we consider modern ethnobotanical studies. In Proto-Indo-European we can offer about thirty-two plant names and an additional twenty-six tree names. In contrast, Brent Berlin examined the languages of ten traditional farming societies and found that the average number of botanical taxa reported in each language was 520. If we were to treat such comparisons at face value this would suggest that we are recovering only about 11 per cent of the probable botanical lexicon known to the Proto-Indo-Europeans. Or compare, for example, the fact that we can reconstruct only a few terms relating to the horse in Proto-Indo-European; in English this semantic field includes horse, pony, nag, steed, prancer, dobbin, charger, courser, colt, foal, fielly, gelding, hack, jade, crock, plug, and many more terms, including the many specific terms describing the colour of the horse, e.g. bay, chestnut, sorrel, pinto. There is no reason to suspect that PIE did not behave similarly”.

NOTE 2. For examples of loan translations from modern EIE languages, cf. from Latin *aquaeduct* (Lat. *aquaeductus* → MIE **aqāsduktos**) or *universe* (Lat. *uniuersus* < **oin(i)-uors-o-* < **oino-wrt-to-* → MIE **oinówr̥stos** ‘turned into one’); from English, like *software* (from Gmc. *samþu-*, *warō* → MIE **somtúworā**); from French, like *ambassador* (from Cel. *amb(i)actos* → MIE **ambhiagtos** ‘public servant’); or *chamber* (from O.Lat. *camera*, from PGk. *kamárā*, ‘vault’ → MIE **kamarā**); from Russian, like *bolshevik* (MIE **belijówikos**); etc.

Modern loan words from sister or cousin IE dialects can be either loan-translated or directly taken as loan words, depending on the nature of the individual words:

- Loan words should be taken directly in MIE from forms which are found only in one proto-language or restricted to southern dialects; as e.g. Gk. *photo*, which should be taken directly as loan word **pháwotos**, from PGk *phawots*, gen. *phawotós*, as Gk. φῶς (<φάφος), φωτός, in compound **phawotogr̥phjā**, *photography*, derived from IE root **bhā-**, *shine*, which could be loan-translated as MIE ***bháwotos**, from ***bhawotogr̥bhjā**, but without having a meaning for extended **bha-wes-**, still less for **bha-wot-**, in North-West Indo-European or even Proto-Indo-European, as it is only found in Ancient Greek dialects. Compare also MIE **skholá**, from Lat. *schola*, taken from Gk. σχολή (<PGk. *skholá*), *spare time*, *leisure*, *tranquility*, borrowed from Greek with the meaning “*school*”, which was in O.Gk. σχολεῖον (*scholeíon*), translated as PGk. *skholehjom* (<PIE *-esjo-m), from IE root **segh-**, which could also be loan-translated as MIE ***sgholá** or even more purely (and artificially) ***sgholesjom**, none of them being Proto-Indo-European or common Indo-European terms. Examples from Indo-Iranian include **wasākáranas**, *bazaar*, from O.Ira. *vahacarana*, “*sale-traffic*”, *bazaar*, which could also be translated as proper MIE ***wesāqólenos**, from PIE roots **wes-**

and **qel-**; or **katúrangam**, *chess*, from Skr. *caturangam* (which entered Europe from Pers. *shatranj*) a *bahuvrihi* compound, meaning “having four limbs or parts”, which in epic poetry often means “army”, possibly shortened from **katurangabalam**, Skr. *caturangabalam*, lit. “four-member force”, “an army comprising of four parts”, could be loan-translated as MIE ***qatúrangom** and ***qaturangobelom**, from roots **qetwṛ-**, **ang-** and **bel-**.

- Loan words and loan translations might also coexist in specialized terms; as, from PIE ***h₁rudʰrós**, *red*, PGk *eruthrós*, in common loan **eruthrókutos**, *erythrocyte*, proper MIE **rudhrós**, in **rudhrá** (**ésenos**) **kētjā**, *red (blood) cell*; cf. also MIE **mūs**, **musós**, *mouse*, *muscle*, PGk *mūs*, *muhós*, in loan **muhokutos**, *myocyte*, for **muskosjo kētjā**, *muscle cell*.

1.8.5. The adjective **eurōpājós**, m. *European*, comes from the Greek noun **Eurōpā**.

NOTE. Gk. *Eurōpā* is from unknown origin, even though it was linked with Homer’s epithet for Zeus *euruopā*, from ***hurú-oqeh₂** “far-seeing, broad”, or ***h₁urú-woqeh₂** “far-sounding” (Heath, 2005). Latinate adj. *europaeus*, which was borrowed by most European languages, comes from Gk. adj. *eurōpaíos*, in turn from PGk *eurōpai-jós* < PIE ***eurōpeh₂-jós** → MIE **eurōpā-jós**. For the evolution PIH ***-eh₂jo-** → PGk ***-aijo-**, cf. adjective formation in Gk. *agorā-agoraíos*, Ruigh (1967).

The name of the European language system is **eurōpājóm**, inanimate, because of the oldest IE dialects, those which had an independent name for languages used the neuter.

NOTE. Compare Gk. n.pl. Ἑλληνικά (*hellēniká*), Skr. n.sg. संस्कृतम् (*saṃskṛtam*), O.H.G. *diutisc*, O.Prus. *prūsiskan*, etc.; cf. also in Tacitus Lat. *uōcābulum latīnum*.

In most IE languages, the language is also referred to as “language” defined by an adjective, whose gender follows the general rule of concordance; as in MIE f. **eurōpājā dṇghwā**, *European language*.

NOTE. Cf. Lat. *latīna lingua*, Gk. ελληνική γλώσσα, O.H.G. *diutiska sprāhha* (Ger. *Deutsche Sprache*), O.Prus. *prūsiskai bilā*, O.C.S. словѣньскый ѡзыкъ (*slověňskyi językŭ*), etc.

1.8.6. Because the term *Indo-European* is common today to refer to the reconstructed language, we decided to use that traditional name to describe the Proto-European language, as a way to familiarize the reader with the European language system as a natural, dead language, and to distinguish it clearly from other language inventions.

NOTE. However, when speaking in European, **sindhueurōpājóm**, *Indo-European*, **pṛmosindhueurōpājóm**, *Proto-Indo-European*, **Eurōpās sindhueurōpājóm**, *Europe’s Indo-European*, should refer to the theoretical linguistic concepts, to the ancient reconstructed dialects, while **eurōpājóm**, *European*, should be preferred for the modern language, just like *Israeli* is probably the most suited name to refer to Modern Hebrew.

2. LETTERS AND SOUNDS

2.1 THE ALPHABETS OF MODERN INDO-EUROPEAN

2.1.1. Indo-European does not have an old writing system to be revived with. In the regions where PIE speakers dwelled four thousand years ago, caves and stones probably still keep some ancient pictographic writings, composed of logograms (graphemes) that represent a morpheme or a whole word, as did Egyptian hieroglyphic logographs.

2.1.2. The Indo-European dialects have adopted different alphabets during the last millennia, and all of them should be usable today – although the main alphabet for today's European Union is clearly the Latin one. This is a summary table of Proto-Indo-European phonemes and their regular corresponding letters in MIE alphabets: Greek, Latin, Cyrillic, Perso-Arabic and (alphasyllabary) Devanāgarī.

A. VOWELS AND VOCALIC ALLOPHONES

<i>Phoneme</i>	<i>Greek</i>	<i>Latin</i>	<i>Persian</i>	<i>Armenian</i>	<i>Cyrillic</i>	<i>Devan.</i>
[a]	A α	A a		Ա ա	А а	अ
[e]	Ε ε	E e		Է է	Е е	ए
[o]	Ο ο	O o		Ո ո	О о	ओ
[a:]	Ἀ ᾱ	Ā ā	ا	Ա ա	А а	आ
[e:]	Ἐ ἔ	Ē ē		Է է	Е е	ऐ
[o:]	Ὠ ῶ	Ō ō		Ո ո	О о	औ

[i]	Ι ι	I i		Ի ի	И и	इ
[i:]	Ἴ ῑ	Ī ī	ی	Ի ի	Й й	ई
[u]	Υ υ	U u		Ի ի	У у	उ
[u:]	Ὼ ΰ	Ū ū	و	Ի ի	У у	ऊ

[r]	Ρ ρ	R r	ر	Ր ր	Р р	ऋ (ऀ)
[l]	Λ λ	L l	ل	Լ լ	Л л	ऌ (ँ)
[m]	Μ μ	M m	م	Մ մ	М м	म
[n]	Ν ν	N n	ن	Ն ն	Н н	ण

NOTE. The underdot diacritic might be used to mark the sonorants, as *Ṛ* *ṛ*, *Ḷ* *ḷ*, *Ṇ* *ṇ*, *Ṃ* *ṃ*; usually, however, sonorants appear between consonants, so it is not necessary to mark them, *v.i.*

B. CONSONANTS AND CONSONANTAL SOUNDS

Phoneme	Greek	Latin	Persian	Armenian	Cyrillic	Devan.
[p]	Π π	P p	پ	Պ պ	П п	प
[b]	Β β	B b	ب	Բ բ	Б б	ब
[b ^h]	Βη βη	Bh bh	بھ	Բհ բհ	Бх бх	भ
[t]	Τ τ	T t	ت	Տ տ	Т т	त
[t ^h]	Θ θ	Th th	تھ	Թ թ	Тх тх	थ
[d]	Δ δ	D d	د	Դ դ	Д д	द
[d ^h]	Δη δη	Dh dh	دھ	Դհ դհ	Дх дх	ध
[k]	Κ κ	K k	ک	Կ կ	К к	क
[k ^h]	Χ χ	Kh kh	کھ	Ք ք	Кх кх	ख
[g]	Γ γ	G g	گ	Գ գ	Г г	ग
[g ^h]	Γη γη	Gh gh	گھ	Գհ գհ	Гх гх	घ
[k ^w]	Ϙ Ϙ	Q q	ق	Ք ք	Къ къ	क
[g ^w]	ΓϘ γϘ	C c	غ	Ղ ղ	Гъ гъ	ग
[g ^{wh}]	Γγη γγη	Ch ch	غھ	Ղհ ղհ	Гъх гъх	घ
[h]	Η η	H h	ه	Հ հ	Х х	ह

[j]	Ι ι (J j)	J j	ی/ژ	ԅ j, Ի ի	Й й / J j	य
[w]	Ϝ ϝ	W w	و	Խ ւ	У у (W w)	व
[r]	Ρ ϱ	R r	ر	Ր ր	Р р	र
[l]	Λ λ	L l	ل	Լ լ	Л л	ल
[m]	Μ μ	M m	م	Մ մ	М м	म
[n]	Ν ν	N n	ن	Ն ն	Н н	न
[s]	Σ σ Ϻ	S s	س	Ս ս	С с	स

2.1.2. The Latin Alphabet used for Modern Indo-European is similar to the English, which is in turn borrowed from the Late Latin *abecedarium*. We also consider some digraphs part of the alphabet, as they represent original Proto-Indo-European sounds, in contrast to those digraphs used mainly for transcriptions of loan words.

2. Letters and Sounds

NOTE. The Latin alphabet was borrowed in very early times from the Greek alphabet and did not at first contain the letter G. The letters Y and Z were introduced still later, about 50 BC.

The names of the consonants in Indo-European are as follows - **B, be** (pronounced *bay*); **Bh, bhe** (*b^hay*); **C, ce** (*g^way*); **Ch, che** (*g^{wh}ay*); **D, de** (*day*); **Dh, dhe** (*d^hay*); **F, ef**; **G, ge** (*gay*); **Gh, ghe** (*g^hay*); **H, ha**; **K, ka**; **L, el**; **M, em**; **N, en**; **P, pe**; **Q, qu**; **R, er**; **S, es**; **T, te**; **V, ve**; **W, wa**; **X, eks**; **Z, zet**.

2.1.3. The Latin character **C** originally meant [g], a value always retained in the abbreviations *C.* (for *Gaius*) and *Cn.* (for *Gnaeus*). That was probably due to Etruscan influence, which copied it from Greek Γ, *Gamma*, just as later Cyrillic Γ, *Ge*.

NOTE 1. In early Latin C came also to be used for [k], and K disappeared except before in a few words, as *Kal.* (*Kalendae*), *Karthago*. Thus there was no distinction in writing between the sounds [g] and [k]. This defect was later remedied by forming (from C, the original [g]-letter) a new character G. Y and Z were introduced from the Greek about 50 B.C., and occur mainly in loan words in Modern Indo-European.

NOTE 2. In Modern Indo-European, **C** is used (taking its oldest value) to represent the Indo-European labiovelar [g^w] in PIE words, while keeping its different European values – [k], [ts], [s], [θ], [ʃ], etc. – when writing proper names in the different modern IE languages.

2.1.4. The Latin [w] semivowel developed into Romance [v]; therefore V no longer adequately represented [w] and the Latin alphabet had to develop an alternative letter. Modern Indo-European uses **V** mainly for loan words, representing [v], while **W** is left for the consonantal sound [w].

NOTE. V originally denoted the vowel sound [u] (Eng. *oo*), and F stood for the sound of consonant [w] (from Gk. Ϝ, called *digamma*). When F acquired the value of our [f], V came to be used for consonant [w] as well as for the vowel [u].

2.1.5. The letter **I** stood for the vowel [i], and was also used in Latin (as in Modern Greek) for its consonant sound [j]. **J** was originally developed as a swash character to end some Roman numerals in place of I; both I and J represented [i], [i:], and [j]. In MIE, **J** represents the semivowel [j]. In the Latin script, **Y** is used to represent the vowel [y] in foreign words.

NOTE. That [j] value is retained in English J only in foreign words, as *Hallelujah* or *Jehovah*. Because Romance languages developed new sounds (from former [j] and [g]) that came to be represented as I and J, English J (from French J), as well as Spanish, Portuguese or Italian J have

sound values quite different from [j]. Romanisation of the sound [j] from different writing systems (like Devanagari) as Y – which originally represented in Latin script the Greek vowel [y] –, due to its modern value in English, French or Spanish, has spread a common representation of [j] as Y in Indo-European studies, while J is used to represent other sounds.

2.1.6. The consonant cluster [ks] was in Ancient Greece written as X (Chi) in Western Greek, Ξ (Xi) in Eastern Greek dialects. In the end, **X** was standardized as [k^h] ([x] in modern Greek), while Ξ represented [ks]. In the Latin script, the X stands for [ks], as in English or Latin, whereas in the Cyrillic alphabet it stands for [h] (and aspiration), as well as for [x] in foreign words.

NOTE. The Etruscans took over X from Old Western Greek, therefore it stood for [ks] in Etruscan and then in Latin, and also in most languages which today use an alphabet derived from the Roman, including English. Cyrillic X was taken with its standard Greek value [x], but is also used as [h] in those languages that need it; as, Macedonian, and Bulgarian and Serbian dialects.

2.1.7. As in Ancient and Classic Greek, in the Greek alphabet **X** stands for [k^h], **Φ** for [p^h], and **Θ** for [t^h].

NOTE. Because of its use in Modern Greek, they also represent (mainly foreign) [x], [f] and [θ].

2.1.8. Ē represents [ɛː] in the Greek alphabet, because **H** was originally used in most Greek dialects to represent the sound [h], and it is therefore used with this value in IE writings, as well as to mark aspirated phonemes.

NOTE. For more on the problem of historical Eta and its representation in the modern Greek alphabet, see <http://www.tlg.uci.edu/~opoudjis/unicode/unicode_aitch.html>.

2.2. CLASSIFICATION OF SOUNDS

2.2.1. The Vowels are short [a], [e], [i], [o], [u], written **a**, **e**, **i**, **o**, **u**, and long [aː], [eː], [iː], [oː], [uː], written **ā**, **ē**, **ī**, **ō**, **ū**, respectively. The other sounds are Consonants.

The Modern Indo-European Diphthongs proper are [ei], [oi], [ai], written **ei**, **oi**, **ai**, and [eu], [ou], [au], written **eu**, **ou**, **au**. In these diphthongs both vowel sounds are heard, one following the other in the same syllable.

NOTE. For the so-called *long diphthongs* [eːi], [oːi], [aːi], written **ēi**, **ōi**, **āi**, and [eːu], [oːu], [aːu], written **ēu**, **ōu**, **āu**, which remained only in Indo-Iranian, Greek and partly in Baltic languages, Schulze (1885) interpreted a regular correspondence of the type **āi**/**ā**/**ī**, which came respectively from the full grade of the long diphthong, the full grade before consonant (where the second

element was lost), and the zero-grade (a contraction of *schwa* with the semivowel). Martinet (1953) proposed that laryngeals were behind those long diphthongs.

In any case, in the languages in which they are retained, *long diphthongs* have not a longer duration than normal diphthongs; phonologically they are equivalent, as Vedic and Greek metric shows. After Adrados (1995), “The difference, therefore, is not on the duration of the group, but on the relative duration of their components; in other words, for example **ei** and **ēi** have the same phonological duration (they are long, as opposed to a brief vowel), but in **ei** both elements have approximately the same duration, whereas in **ēi** the duration of **i** is perceptibly shorter than **e**. Because of that, the name ‘long first element diphthongs’ is more appropriate to refer to these phonemes”. Cf. Allen (1976) for an analysis of these diphthongs.

Strictly speaking, phoneticians do not consider the so-called rising diphthongs, [je], [jo], [ja], [je:], [jo:], [ja:], nor [we], [wo], [wa], [we:], [wo:], [wa:], as diphthongs proper, but rather sequences of glide and vowel.

NOTE. Whilst most Indo-Europeanists differentiate between sequences of approximant and vowel (rising diphthongs) from true falling diphthongs in their transcriptions, i.e. writing [je] (from [i]+[e]) but [ei] or [eɪ] (from [e]+[i]), some use a different approach, considering all of them combinations of vowel plus glide or glide plus vowel, i.e. writing [je] and [ej], or [iɛ] and [ei].

Therefore, there are no real triphthongs. The formations usually called triphthongs are [jei], [joi], [jai], [jeu], [jou], [jau], as well as [wei], [woi], [wai], [weu], [wou], [wau]; and none can be named strictly triphthong, as there is a consonantal sound [j] or [w] followed by a diphthong. The rest of possible formations are made up of a diphthong and a vowel.

2.2.2. Consonants are either voiced (sonant) or voiceless (surd). Voiced consonants are pronounced with vocal cords vibration, as opposed to voiceless consonants, where the vocal cords are relaxed.

a. The voiced consonants are [b], [d], [g], [g^w], [l], [r] and [ɾ], [m], [n], [z], [j], [w].

b. The voiceless consonants are [p], [t], [k], [k^w], [s].

c. The digraphs **bh**, **dh**, **gh** and **ch** represent the Indo-European voiced aspirates proper, i.e. [b^h], [d^h], [g^h], [g^{wh}], whereas **ph**, **th**, and **kh** represent voiceless aspirates [p^h], [t^h], [k^h], mostly confined to words of Greek origin, as well as foreign [ϕ], [θ] and [x], respectively.

d. The consonants [r], [l], [m], [n], and the semivowels [j] and [w], can function both as consonants and vowels, i.e. they can serve as syllabic border or center.

NOTE. There is a clear difference between the vocalic allophones of the semivowels and those of the sonants, though: the first, [i] and [u], are very stable as syllabic center, while [r̥], [l̥], [m̥], [n̥], aren't, as they cannot be pronounced more opened. Hence the big differences in their evolution, depending on the individual dialects.

2.2.3. The Mutes are classified as follows:

	<i>voiceless</i>	<i>voiced</i>	<i>aspirated</i>
labials	p	b	b ^h
dentals	t	d	d ^h
velars	k	g	g ^h
labiovelars	k ^w	g ^w	g ^{wh}

Labialized velars or Labiovelars [k^w] (written **q**), [g^w] (written **c**), [g^{wh}] (written **ch**), are pronounced like [k], [g], [g^h] respectively, but with rounded lips.

NOTE 1. German Neogrammarians reconstructed a fourth series of phonemes, the voiceless aspirates *p^h, *t^h, *k^h, to explain some irregularities in the outputs of the voiceless row. Most Indo-Europeanists reject this fourth independent row of phonemes, and findings of Indo-Iranian, Armenian and Greek have been explained as 1) expressive in origin, 2) contact of a voiceless with a laryngeal phoneme, and 3) effect of a prior **s**. For support of the fourth row, cf. Szemerényi (1985).

NOTE 2. The modern mainstream Proto-Indo-European reconstruction, that accepts only these two rows of velars as the most logical PIE phonetic system, has been confronted with the question of the actual existence of the groups [kw], [gw], and [g^{hw}], different from (and similar or identical in their dialectal outputs to) labialized [k^w], [g^w], and [g^{wh}]. A distinction between both is often found, though, whether an independent row of palatalized velars is accepted or not; as, **kwōn**, *dog*, **ekwos**, *horse*, **ghwer-**, *wild*, **kweidos**, *white*, **kwet-**, *cook* (cf. O.Ind. *kwathatī*), **tekw-**, *run*, etc. which might be found reconstructed as ***qōn**, ***eqos**, ***cher-**, etc. For a defence of such unified forms, see e.g. Jussi Halla-aho at <<http://ethesis.helsinki.fi/julkaisut/hum/slavi/vk/halla-aho/problems.pdf>>.

2.2.4. The so-called Liquids are **l**, which represents the alveolar lateral approximant [l], an **r**, pronounced in PIE and in most modern IE languages (at least occasionally) as alveolar trill [r], today often allophonic with an alveolar tap [ɾ], particularly in unstressed positions. These sounds are voiced.

NOTE. About Indo-European **r** and **l**, cf. Ban'czerowski (1968).

For foreign words, the group **rh** represents an [h] sound coming just after the [r], mainly in words of Greek origin. Other groups include **rr**, the alveolar trill [r], and its aspirated counterpart **rrh**. The palatal lateral approximant [ʎ] shall be represented as **lj**.

2.2.5. The Nasals are labial [m], written **m**, and dental [n], written **n**. These are voiced. The velar nasal [ŋ] – as *ng* in English *sing* – could have existed in IE as allophone of [n] before velars.

NOTE. Erhart (1970) reconstructs three nasals, N, M1 and M2, this one a fricative seminasal with which he explains the results of alternating m and w in some suffixes and roots; as, **-ment-**/**went-**, **men-**/**wen-**, etc. It was left unexplained, though, under which conditions did it change.

The palatal nasal [ɲ] of foreign words (similar to the [ɲ] sound in English *onion* or *canyon*) is represented by the pair **nj**.

2.2.6. The Fricatives are voiceless [s] and voiced [z], **z** being usually the output of **s** before voiced consonants.

NOTE. [z] was already heard in Late Proto-Indo-European, as a different pronunciation (allophone) of [s] before voiced consonants, as can be clearly seen in PIE **nizdos** (for **nisdos**), *nest*, which comes from PIE roots **ni-**, *down*, and zero-grade **-sd-** of **sed**, *sit*. Because of that it is preferred to write **s** for [z] in MIE.

It is also possible to write voiceless and voiced pairs from foreign words: labiodentals, **f** and **v**; dorsal voiceless **h** and [x], written **kh**; and postalveolar [ʃ] as **sh** and [ʒ] as **zh**. Possible groups include **ks**, **ts**, **dz**, **tsh** (for [tʃ]), **dzh** (for [dʒ]), etc.

2.2.7. The Semivowels are usually written **j**, and **w**. These are voiced.

NOTE. Some authors make a distinction between consonantal [j], [w], and vocalic [i], [u]. Actually, however, both appear as TIT and EYE (where T = consonant, E = vowel, I = i,u, Y = j,w), and never as TYT or EIE. Against it, see Schmitt-Brandt (1967) and Szemerényi (1985) and Mayrhofer (1986).

2.2.8. Gemination appears in phonemes whose duration is long enough to be perceived – their implosion and explosion, both audible – as distributed in two syllables. They existed in PIE: in stops, as **appās**, **attās** (and **tātā**), *dad*, **pappājō**, *eat*, or **kakkājō**, *shit*; in nasals, as **anna-**, **ammā** (and **mammā**), *mother*, *mum*; in liquids, as **bōullā**, *bubble*; and in the sibilant, as **kussō**, *kiss*.

NOTE. They appear mostly in words of expressive origin, children vocabulary, onomatopoeia, etc., which makes it more likely that PIE inherited gemination as an expressive resource, different from its central phonological system; a resource that was retained for a long time by most IE languages as a recurrent possibility.

2.2.10. A synoptic table of the Proto-Indo-European phonetic system:

	Labials	Coronals	Palatovelars	Velars	Labiovelars	Gutturals
<i>Voiceless</i>	p	t	<i>kⁱ</i>	k	k^w	
<i>Aspirated</i>	<i>p^h</i>	t^h		k^h		
<i>Voiced</i>	b	d	<i>gⁱ</i>	g	g^w	
<i>Aspirated</i>	b^h	d^h	<i>g^h</i>	g^h	g^{wh}	
<i>Nasals</i>	m	n				
<i>Fricatives</i>		s , z				h, *H
<i>Liquids</i>		r , l				
<i>Approximant</i>	w		j			

NOTE 1. The existence of a distinctive row of PIE ‘satemizable’ velars, the so-called palatovelars, has been the subject of much debate over the last century of IE studies. Today a majority of modern scholars support only two types of velars in Late PIE – generally Velars and Labiovelars, although other solutions have been proposed, see Appendix II.2.

Palatovelars could be found in PII, though, and are to be represented with Ʒ Ʒ, ǵ ǵ, ǵh ǵh.

The support of German Neogrammarians to the ‘palatals’ in Proto-Indo-European, as well as its acceptance in Brugmann’s *Grundriß* and Pokorny’s *Wörterbuch*, extended the distinction to many (mainly etymological) works, which didn’t deal with the phonological reconstruction problem directly. As Adrados (2005) puts it, about the *standard* [=Brugmannian] theories nowadays, “Indo-Europeanists keep working on a unitary and flat PIE, that of Brugmann’s reconstruction. A reconstruction prior to the decyphering of Hittite and the study of Anatolian! This is but other proof of the terrible conservatism that has seized the scientific discipline that is or must be Indo-European linguistics: it moves forward in the study of individual languages, but the general theory is paralysed. It is sad when our students go to Germany and come back brainwashed”.

NOTE 2. The cover symbol *H, traditionally *ǵ, stands for the uncertain Late PIE output of the (for Middle PIE) reconstructed laryngeal phonemes *h₁*, *h₂*, *h₃*, which had evolved differently already by the time when Late PIE and Proto-Anatolian were independent languages. There is no

consensus as to what these phonemes were like, or how many of them (if any) survived into Late PIE, but it is widely accepted that PIH $*h_2$ was probably uvular or pharyngeal, and that $*h_3$ was labialized. Commonly cited possibilities are ʁ, ʕ, ʕʷ and x, χ~ħ, xʷ. See Appendix II.3.

2.3. SOUNDS OF THE LETTERS

2.3.1 The following pronunciation scheme is substantially that used by the common Europe's Indo-European speakers in ca. 2500 BC, when the laryngeal phonemes had already disappeared, having coloured following vowels, and lengthened preceding ones.

NOTE. MIE cannot permit dialectal phonetic differences, whether vocalic or consonantal – like Grimm's Law effects in PGmc. consonants, already seen –, because a homogeneous pronunciation system is especially needed when targeting a comprehensible common language. Some differences exist in sister dialects Hellenic, Aryan and Anatolian, though.

2.3.2. Vowels:

ā as in <i>father</i>	a as in <i>idea</i>
ē as in <i>they</i>	e as in <i>met</i>
ī as in <i>meet</i>	i as in <i>chip</i>
ō as in <i>note</i>	o as in <i>pot</i>
ū as in <i>rude</i>	u as in <i>put</i>

NOTE 1. Following the mainstream laryngeals' theory, Proto-Indo-Hittite knew only two vowels, $*e$ and $*o$, while the other commonly reconstructed vowels were earlier combinations with laryngeals. Thus, short vowels PIE **a** < $*h_2e$; **e** < $*(h_1)e$; **o** < $*h_3e$, $*(h_1)o$; long vowels **ā** < $*eh_2$; **ē** < $*eh_1$; **ō** < $*eh_3$, $*oh$. The output of $*h_2o$ in Late PIE was either **a** or **o**, after the different schools. Short and long vowels **ĩ** and **ũ** were just variants of the semivowels PIH $*j$ and $*w$.

NOTE 2. The sonants may have been lengthened too (usually from older sequences of sonant + laryngeal, or because of compensatory lengthenings), especially in the conjugation of verbs, giving thus $[r̄:]$, $[l̄:]$, $[m̄:]$, $[n̄:]$, written as \bar{r} , \bar{l} , \bar{m} , \bar{n} . The semivowels can also have a prolonged pronunciation, giving allophones **ij** and **uw**. For more details on this see § 2.7.2.

2.3.3. Falling Diphthongs and equivalents in English:

ěi as in <i>vein</i>	ěu <i>e (met) + u (put)</i>
õi as in <i>oil</i>	õu as <i>ow</i> in <i>know</i>
ăi as in <i>Cairo</i>	ău as <i>ou</i> in <i>out</i>

There are several ways to generate breathy-voiced sounds:

1. To hold the vocal cords apart, so that they are lax as they are for [h], but to increase the volume of airflow so that they vibrate loosely.

2. To bring the vocal cords closer together along their entire length than in voiceless [h], but not as close as in modally voiced sounds such as vowels. This results in an airflow intermediate between [h] and vowels, and is the case with English intervocalic [h].

3. To constrict the glottis, but separate the arytenoid cartilages that control one end. This results in the vocal cords being drawn together for voicing in the back, but separated to allow the passage of large volumes of air in the front. This is the situation with Hindustani.

2.3.4. Consonants:

1. **b, d, h, l, m, n**, are pronounced as in English. **n** might also be pronounced as guttural [ŋ] when it is followed by another guttural, as in Eng. *sing* or *bank*.

3. **p, k, t** are plain as in Romance, Slavic or Greek languages, not aspirated as in English; **t** is never pronounced as *sh*, as in English *oration* or *creation*.

4. **g** always as in *get*. It had two dialectal pronunciations, the common simple velar and the ‘eastern’ (later generalized in PII) palatovelar. Compare the initial consonants in *garlic* and *gear*, whispering the two words, and it will be observed that before *e* and *i* the *g* is sounded farther forward in the mouth (more ‘palatal’) than before *a* or *o*. That is what we represent as **ǵ**, similar to **ḳ**, pronounced as *k* in *key*, compared to *c* in *cold*.

5. **c** is pronounced similar to [g] but with rounded lips. Compare the initial consonant in *good* with *get* to feel the different articulation. The voiceless **q** is similar to [k] but pronounced with rounded lips; as *c* in *cool*, compared to *c* in *car*.

6. **bh, dh, gh, ch** are uncertain in sound, but the recommended pronunciation is that of the Hindustānī’s “voiced aspirated stops” *bh, dh, gh*, as they are examples of living voiced aspirates in an Indo-European language (see note to the left).

7. The voiceless aspirated **ph, kh, th**, frequently of Hellenic origin, are pronounced very nearly like English word-initial *p, k, t*, as in *pen, ten, Ken*. Their sound is also described as equivalent to *p+h, t+h*,

k+h, i.e. to the corresponding mutes with a following breath, as in *loop-hole*, *hot-house*, *block-house*.

8. **j** as the sound of *y* in *yes*, never the common English [dʒ], as *j* in *join*; **w** as *w* in *will*.

9. Indo-European **r** was probably slightly trilled with the tip of the tongue (still common today in many IE languages), as in Scottish English *curd*. Another pronunciation is common today among modern IE languages, and was possibly heard in PIE, the alveolar tap [ɾ], pronounced like the intervocalic *t* or *d* in American or Australian English, as in *better*.

10. **s** is voiceless as in *sin*, but there are situations in which it is voiced, depending on the surrounding phonemes. Like the aforementioned [ɾ], modern speakers will probably pronounce [s] in slightly different ways, but this should not usually lead to misunderstandings, as there are no proper IE roots with original [z] or [ʃ], even though the former appeared in some phonetic environments, v.s.

11. Doubled letters, like **ll**, **mm**, **tt**, etc., should be so pronounced that both members of the combination are distinctly articulated.

12. Regarding foreign sounds:

- **kh** might represent [x], whether strong, with ‘*ach-laut*’, such as *kh* in Russian *Khrushenko*, or *ch* *Chanukah*, or soft, with ‘*ich-laut*’, such as *ch* in German *Kirche* or *Lichtenstein*. Also, **th** might be pronounced as English *th* in *thing*, and **dh** as *th* in *this*.
- **z**, **v**, **f**, **sh**, are pronounced as in English.
- **zh** is pronounced as *s* in English *leisure*.
- **tsh** corresponds to English *ch* in *chain*, and **tzh** to *j* in *jump*.

2.4. SYLLABLES

2.4.1. In many modern languages, there are as many syllables in a word as there are separate vowels and diphthongs. This is not exactly so in Modern Indo-European. It follows, indeed, this rule too:

swe-sōr, *sister*, **skrei-bhō**, *write*, **ne-wā**, *new*, **ju-góm**, *yoke*.

NOTE. The semivowels are always written **j** and **w**. So in **trejes**, *three*, **newos**, *new*, **dnghwās** [ˈdngh-wa:s], *languages*, etc.

2.4.2. Indo-European has also consonant-only syllables. It is possible to hear similar sound sequences in English *cattle* or *bottom*, in German *Haben*, in Czech *hlt*, Serbian *srpski*, etc. In this kind of syllables, it is the vocalic sonant [r̥], [l̥], [m̥], or [n̥] – constrained allophones of [r], [l], [m], [n] –, the one which functions as syllabic centre, instead of a vowel proper:

kr̥-di, *heart*, **wl̥-qos**, *wolf*, **de-km̥**, *ten*, **nō-m̥**, *name*.

NOTE 1. Words derived from these groups, represented TRT (where T = consonant, R = sonant), are unstable and tend to add auxiliary vowels before or after the sonants, i.e. T°RT or TR°T. Because of that, their evolutions differ greatly in modern IE languages. For example, **dn̥ghwā**, *language*, evolved as [ˈd̥n̥-gh̥wa:] into PGmc. *tung(w)ō*, and later English *tongue* or German *Zunge*, while in archaic Latin it was pronounced *dingwa*, and then the initial *d* became *l* in Classic Latin, written *lingua*, which is in turn the origin of Modern English words “linguistic” and “language”. For **wl̥qos** (cf. Ved. *vr̥kas* < PII *w̥rkas*), it evolved either as [ˈw̥l̥-kwos], later into PGmc. **wulxwaz* (cf. O.H.G. *wolf*) or BSl. **wilkas* (cf. O.C.S. *volkŭ*) or as [ˈwl̥²-kwos], which gave Common Greek **wlukwos* (cf. Gk. *lykos*), Ita. **wlupos* (cf. Lat. *lupus*).

NOTE 2. Apart from the common scheme TRT, another, less stable scheme has been proposed for a common PIE, a certain TRE (where E = vowel); as, PIE **gʷ°nā*, for MIE **cenā**, *woman*, or **k°rwos*, for **kerwos**, *deer*, etc. – conventionally, the symbol ° under the sonant is placed before it in these schemes. Nevertheless, it is commonly accepted that Late PIE dialects did in fact add an auxiliary vowel to this sequence at early times, probably before the first dialectal split: as early Indo-Iranian and Balto-Slavic dialects show, vocalization of TRE had already happened when TRT hadn't still been vocalized, i.e. T°RE > TERE. Also, many dialects show a common vocalization in [a] for the sonant in some TERE groups, while showing different outputs (even non-vocalization) for TRT. Therefore, even if this theory might make some irregularities fit into a common Late (or Middle) PIE sound, it is not applicable to those early PIE dialectal words, whose vocalization might be inferred using the comparative grammar. Some TRE groups persisted in early IE dialects, though, often from older sequences that included laryngeals, and they are kept in MIE.

2.4.3. In the division of words into syllables, these rules apply:

1. A single consonant is joined to the following vowel or diphthong; as **ne-wos**, **me-dhjos**, etc.

2. Combinations of two or more consonants (other than the vocalic ones) are regularly separated, and the first consonant of the combination is joined to the preceding vowel; as **ok-tōu**, *eight*, **pen-qe**, *five*, etc. but **a-gros**, *field*, **sqa-los**, *squalus*.

3. In compounds, the parts are usually separated; as **a-pó-sta-tis**, *distance*, from **apo** + **statis**; or **am-bhí-qo-los**, *servant*, from **ambhí** + **qolos**.

2.4.4. The semivowels [j], [w] are more stable than sonants when they are syllable centres, i.e. [i] or [u]. However, when they are pronounced *lento*, they give the allophones (or *allosyllables*) **ij**, **uw**. Examples of alternating forms in PIE include **médhijos** (cf. Lat. *medius*), and **medhjos** (cf. O.Ind. *mádhjas* or Gk. μέσσος); **dwōu**, *two* (cf. Goth. *twai*, Gk. δω-), and **duwōu** (cf. O.Ind. *duva*, Gk. δύω < *δύϝω, Lat. *duo*).

2.5. QUANTITY

2.5.1. Syllables are distinguished according to the length of time required for their pronunciation. Two degrees of Quantity are recognized, *long* and *short*.

NOTE. In syllables, quantity is measured from the beginning of the vowel or diphthong to the end of the syllable. Such distinctions of long and short are not arbitrary and artificial, but are purely natural, a long syllable requiring more time for its pronunciation than a short one.

2.5.3. A syllable is long usually,

- a. if it contains a long vowel; as, **mā-tér**, *mother*, **kē-lā-jō**, *hide*,
- b. if it contains a diphthong; as, **lai-wós**, *left*, **oi-nos**, *one*,
- c. if it contains any two non-syllabic consonants (except a mute followed by **l** or **r**); as, **pneu-sō**, *breathe strongly*, **tmā-mi**, *cut*.

2.5.4. A syllable is short usually,

- a. if it contains a short vowel followed by a vowel or by a single consonant; as, **pel-nis**, *skin*, or **e-í-mi**, *go*,
- b. if it contains a vocalic sonant; as, **qr-mis**, *worm*, **cm-tis**, *march*.

2.6. ACCENT

2.6.1. There are stressed as well as unstressed words. The last could indicate words that are always enclitic, i.e., they are always bound to the accent of the preceding word, as **-qe**, *and*, **-r**, *for*; while another can be proclitics, like prepositions.

2.6.2. The oldest PIE was a stress language in which syllable strength was chiefly a matter of pitch differences and, presumably, of intensity (loudness).

NOTE. Following Gąsiorowski, “[i]n this respect it was similar to Spanish or Polish, but not to English with its emphatic ‘expiratory’ stress (...) It thus stood close to the borderline between stress systems and pitch accent systems. Indeed, some linguists have attributed pitch accent contrasts to PIE on the strength of accentual correspondences between Balto-Slavic and Greek. However, scholars such as Jerzy Kuryłowicz and – more recently – Paul Kiparsky have convincingly argued that such contrasts arose independently in the branches in question. The best evidence for the original location of stress in PIE comes from Vedic (Classical Sanskrit developed its own stress system, similar to that of Latin). The location of pitch accent in Classical Greek (especially in Greek noun paradigms) also reflects the PIE stress pattern. There are, to be sure, some specifically Greek constraints on the distribution of pitch accents, but in the environments where such restrictions do not apply, Greek usually agrees with Vedic. In the Germanic languages the original location of stress is sometimes reconstructible thanks to the phonetic ‘fingerprints’ of Verner’s Law. Germanic spectacularly bears out the testimony of Vedic and Classical Greek. Finally, the evolution of pitch-accent systems in Balto-Slavic makes most sense if we adopt the stress system reconstructed on the basis of Vedic, Greek and Germanic as its starting-point”.

2.6.4. The Stress is free, but that does not mean anarchy. On the contrary, it means that each non-clitic word has an accent and only one accent, and one has to know – usually by way of practice – where it goes. Its location depended on the inflectional type to which a given word belonged.

NOTE. Indo-European stress is (at least partly) unpredictable. Rather, it is lexical: it comes as part of the word and must be memorized, although orthography can make stress unambiguous for a reader, and some stress patterns are ruled out. Otherwise homophonous words may differ only by the position of the stress, and it is thus possible to use stress as a grammatical device.

2.6.5. Adjectives are often stressed on the ending, especially if they are derivatives; as, **gh̥ltnós**, *golden*, from **gh̥ltom**, *gold*, **ŋgnōtós**, *unknown*, from **gnōskō**, *know*. Nevertheless, nouns and adjective might be stressed on any syllable.

NOTE. There are some accent rules to be followed in the declension of nouns and in the conjugation of verbs, which will be later studied.

2.7. VOWEL CHANGE

2.7.1. Vowel Change was common in Proto-Indo-European. In many words the vowel varies because of old alternating forms that gave different derivatives.

NOTE. With the creation of zero-grade stems, vocalization appears, as the original radical vowels disappear and new ones are added. That happens, for example, in root **bhr̥-** [bhr̥], *carry*, (cognate with English *bear*), which can be reconstructed from IE languages as **bher-**, **bhor-** or **bhr̥-**. The same can be said of the semivowels [j] and [w] when they are syllable edges, being syllable centres [i] and [u] in zero-grades.

So for example in o-grade **domos**, *house*, which gives **dómūnos**, *lord*, as Lat. *dominus*, Skr. *dā́mūnaṣ* but full grade root **dem-**, which gives **demspóts**, *master, lord*, later *despot*, as Gk. *δεσπότης* (*despótēs*), Skr. *dampati*, Av. *daŋg patōiš*, (with fem. **demspotnjā**).

NOTE. The forms attested in Indo-Iranian (and maybe Greek) come from i-stem **potis**, probably derived from the original Late PIE form **demspóts**, cf. **ghósti-pots**, *guest*, as Lat. *hospēs*, *hospitis*, O.Russ. *gospodb* < **-ostbpot-*; compare, for an original PIE ending **-t** in compounds, Lat. *sacerdōs* < MIE **sákrodhots**, O.Ind. *devastút-*, “*who praises the gods*”, etc. The compound is formed with **pot-**, *lord, husband*, and **pot-njā**, *mistress, lady*.

2.7.2. Different vocalizations appeared in IE dialects in some phonetic environments, especially between two occlusives in zero-grade, impossible to pronounce without adding a vowel; as e.g. **skp-**, which evolved as Lat. *scabo* or Got. *skaban*.

NOTE. Although the dialectal solutions to such consonantal groups aren't unitary, we can find some general PIE timbres. As **a**, **i** with a following dental (especially in Gk. and BSl.) or **u**, also considered general, but probably influenced by the context, possibly when in contact with a labial, guttural or labiovelar.

2.7.3. Sometimes different reconstructions might account for some vowel differences; **a** for **o**, as ***lawō** for **lowō**, *wash*; a vocalic sonant for **a** or **e** plus sonant, as ***Sm̥os** for **Samos**, *summer*, or ***k̥r̥wos** for **kerwos**, *deer*, etc.

NOTE. Different reconstructions might be equally valid, depending on the criteria employed. Sometimes different PIE language stages have to be taken into account; as, for root **neqt-**, *night*, a

common PIH full-grade **neqts* is reconstructible, according to Hitt. *nekuť*; however, Late PIE dialects show that an o-grade noun was later generalized; cf. O.Gk. *nuks*, *nuktós*, O.Lat. *nox*, *noctis*, for an old PIE consonant stem **noqts*. The newer i-stem **noqtis** was the general Late PIE (and later also PII, EIE) form, cf. O.Ind. *nakti*, Gmc. *naxti*, Sla. *notjb*, Bal. *nakti*.

The phonological reconstruction of Late PIE includes generally the *Schwa Indogermanicum*, uncertain in sound, which usually stands for an older laryngeal **h₂*. In North-West IE, PIE reconstructed **ə* usually appears as **a**; as, **statis**, *standing post*, from zero-grade **sth₂-* of root **stā-** (<*steh₂-*) *stay*; or **patér**, from older **ph₂tér-*.

NOTE. Other examples are a-stems in **-ī/-jə*, from older **-ih₂*, and neuter plural in **-ə<*-h₂*.

2.8. CONSONANT CHANGE

2.8.1. Regarding Consonant Change, different reconstructions might appear, too; as, for **ghortos**, *garden, enclosure*, later *town* (cf. Gmc. *gardan*, Lat. *hortus*, Gk. *khortos*, Phry. *-gordum*, O.Ir. *gort*, Lith. *gardas*, O.C.S. *gradu*, Alb. *garth*, etc.), some would reconstruct an alternative ***ghordhos**, so that both forms (in **-t-** and **-dh-**) fit perfectly into the schemes of dialectal phonological laws.

2.8.2. The so called s-Mobile (*mobile* pronounced as in Latin, it is a neuter adjective) refers to the phenomenon of alternating word pairs, with and without **s** before initial consonants, in stems with similar or identical meaning. This “moveable” prefix **s-** is always followed by another consonant. Typical combinations are with voiceless stops **(s)p-**, **(s)t-**, **(s)k-**, with liquids and nasals, **(s)l-**, **(s)m-**, **(s)n-**; and rarely **(s)w-**.

NOTE. Examples include **(s)ten-**, compare O.Ind. *stánati*, Gk. *sténō*, O.Eng. *stenan*, Lith. *stenù*, O.Sla. *stenjo*, and without **s-** in O.Ind. *tányati*, Gk. Eol. *ténnei*, Lat. *tonare*, O.H.G. *donar*, Cel. *Tanaros* (name of a river). For **(s)pek-**, cf. O.Ind. *spásati*, Av. *spašta*, Gk. *skopós* (<*spokós*), Lat. *spektus*, O.H.G. *spehon*, without **s-** in O.Ind. *pásyati*, Alb. *pashë*. For **(s)ker-**, cf. O.Ind. *ava-*, *apa-skara-*, Gk. *skéraphos*, O.Ir. *scar(a)im*, O.N. *skera*, Lith. *skiriù*, Illyr. *Scardus*, Alb. *hurdhë* (<**skṛd-*), without **s-** in O.Ind. *kṛnāti*, Av. *kərāntaiti*, Gk. *keíro*, Arm. *kcorem*, Alb. *kjëth*, Lat. *caro*, O.Ir. *cert*, O.N. *horund*, Lith. *kkarnà*, O.Sla. *korüčü*, Hitt. *kartai-*, and so on.

Such pairs with and without **s** are found even within the same dialect, as Gk. *(s)tégos*, “roof”, *(s)mikrós*, “little”, O.Ind. *(s)tr̥*, “star”, and so on.

NOTE. Some scholars believe it was a prefix in PIE (which would have had a causative value), while others maintain that it is probably caused by assimilations of similar stems – some of them

beginning with an **s-**, and some of them without it. It is possible, however, that the original stem actually had an initial **s**, and that it was lost by analogy in some situations, because of phonetic changes, probably due to some word compounds where the last **-s** of the first word assimilated to the first **s-** of the second one. That helps to explain why both stems (with and without **s**) are recorded in some languages, and why no regular evolution pattern may be ascertained: so for example in **wlqons spekjont**, *they saw wolves*, becoming **wlqons 'pekjont**. See Adrados (1995).

2.8.3. Before a voiced or aspirated voiced consonant, **s** was articulated as voiced, by way of assimilation; as, **nisdos** ['niz-dos], *nest*, **misdhom** ['miz-d^hom], *meed*, *salary*, or **osdos** ['oz-dos], *branch*. When **s** forms a group with sonants there is usually assimilation, but such a trend was sometimes reversed by adding a consonant; as Lat. *cerebrum* (<Ita. *kereθrom*), from **kersrom** ['kerz-rom], *brain*.

NOTE. Related to the later assimilation of [s] into [z] between vowels, they became very unstable in some IE dialects, showing sometimes *rhotacism*; as, **snusós**, *daughter-in-law*, cf. Lat. *nurus*, O.H.G. *snur*; or **genos**, *race, stock, kind*, cf. Lat. *genus, generis* (<*geneses).

2.8.4. Similarly, the manner of articulation of an occlusive usually depends on its environment. Thus, voiced stops turn voiceless in final position; as, **pods**, *foot*, gives voiceless O.Ind. *pāt*, **qid** gives O.Ind. *cit*, **agtós** gives voiceless Gk. *ακτος* (*aktos*) or Lat. *actus*. The same happens with voiced aspirates, as in **legh-**, *lie* (cognate to Eng. *log*), giving Gk. *λεκτρον* (*lektron*), Lat. *lectus*, O.H.G. *Lehter*. Voiceless occlusives become voiced before voiced consonants; as, zero-grade **ped-** in Gk. *ἐπιβδα* (*epi-bd-a*).

2.8.5. A sequence of two dentals, such as **-tt-**, **-dt-**, **-tdh-**, **-ddh-**, etc. was eliminated in all Indo-European dialects, but the process of this suppression differed among branches; Vedic Sanskrit showing little change, some others an intermediate **-sT-**, and others **-ss-** or **-s-**. Compounds were not affected by this trend; as, **kréd-dhēmi**, *believe*.

NOTE. This trend began probably in Late PIE, and thus all IE speakers knew such evolutions, which we sum up into a common intermediate stage **-st-**, **-sdh-**, etc., which was followed in some early IE dialects, and probably known to the rest of them. See the section *Conventions Used in this Book* for more on this question. For phonetic changes in Aryan dialects, see Appendix II.

Examples in MIE are e.g. forms derived from PIE root **weid-**, *know, see*, which gave verb **widējō**, cf. Lat. *vidēre*, Goth. *witan*, O.C.S. *videŭi*, Lith. *pavydėti*; p.p. **wistós**, *seen*, from **wid-tó-**, (cf. O.Ind. *vitta-*, but Av. *vista-*, O.Pruss. *waist*, O.Sla. *věstь*, or

Gmc. *wīssaz*, Lat. *vīsus*, O.Gk. *φιστος*, O.Ir. *rofess*, etc.); noun **wistis**, *sight, vision*, from **wid-ti-**, cf. Goth *wizzi*, Lat. *vīsiō*; Greek **wistōr**, *wise, learned man*, from **wid-tor**, cf. Gk. *ἵστωρ* < **φίστωρ* (*wístōr*), PGk **wistorjā**, *history*, from Gk. *ἱστορία* (*hístoria*); Imp. **wisdhi!** *know!*, from **wid-dhí**, cf. O.Ind. *viddhí*, O.Gk. *φίσθι*, O.Lith. *veizdi*, and so on.

2.9. PECULIARITIES OF ORTHOGRAPHY

2.9.1. Indo-European words may show a variable orthography, although a unified one should be strongly encouraged.

2.9.1. Vowel Changes that influence the way MIE is written include the alternating PIE forms that gave different frozen derivatives.

A vowel change that should not affect MIE orthography is what many reconstruct as PIE [ə] or *schwa*, generally evolved as North-West IE **a**; as, PIH **ph₂tér-* → PIE **pátér-* → EIE **patér-**, *father*; PIH **b^hh₂tis* → PIE **b^hātis* → EIE **b^hatis**, *appearance*; PIH **anh₂mos* → PIE **anāmos* → EIE **ánamos**, *breath*, and so on.

NOTE. This Late PIE reconstructed *schwa* (see §2.2.1) is important for the different vocalism of EIE, PII and PGk; cf. MIE **patér-** with Aryan *pitár-*, or MIE **ánamos** with Hellenic *ánemos*.

2.9.2. Consonant Changes that should not affect MIE orthography, already seen, include voiced sibilants, as **nisdos** [‘niz-dos], **kersrom** [‘kerz-rom]; and voiceless occlusives, as **pods** [pots], **agtós** [ak-‘tos], **leghtrom** [‘lek-trom], **-pd-** [bd].

NOTE. Although the accuracy of some allophones in PIE is certain, for practical reasons the phonetically correct notation is therefore avoided in favour of the phonemically correct notation.

Changes that usually affect how MIE is written include commonly reconstructed variants, as **egh-**, **ek-**, *outside, out, from*; and dubious cognates, as **necr-**, *dark*, and **neqt-**, *night*, maybe from a common PIH suffixed **neg^w-*, *to dawn*.

2.9.3. About semivowels, as a general exception, they are not written when the semivowel is the last sound of the first word in a compound; e.g., for **triathlom** (from **tri-**, *three*, and Gk. *athlon*, “contest”), *triathlon*, we won’t write ***trjathlom**; **sindhueurōpājóm**, and not ***sindhweurōpājóm**; etc.

NOTE. In Modern Indo-European, compounds may be written with and without hyphen, as in the different modern Indo-European languages. Nevertheless, the older, not hyphenated version is preferred for formal writings; as, **sindhueurōpājóm**, and not ***sindhu-eurōpājóm**, compare

Eng. *Indo-European*, Ger. *Indoeuropäisch*, Fr. *Indo-européen*, It., Sp. *indoeuropeo*, Gal.-Pt. *Indo-européu*, Cat. *indoeuropeu*, Du. *Indo-Europees*, Pol. *indoeuropejski*, Lit. *indoeuropiečių*, Ir. *Ind-Eorpach*, Russ. *индоевропейский*, Gk. *ινδοευρωπαϊκή*, Ira. *ایندو-یورپایی*, Hin. *हिन्द-यूरोपीय*, etc.

2.9.4. The vocallic allophones [r̥], [l̥], [m̥], [n̥] may be written, as in Latin transliterations of Sanskrit texts, as **r̥**, **l̥**, **m̥**, and **n̥**, to help the reader clearly identify the sonants; therefore, alternative writings **ṇmṛtós**, *inmortal*, **kṃtóm**, *hundred*, **wodṛ**, *water*, etc. are also possible.

2.9.5. An Apostrophe is used to mark the omitted letter of a contraction in word-final position, usually in elisions at the end of imperative verbs, especially in spoken language; as **cemj'** for **cemje**, *come here*; or **takej'** for **takēje**, *shut up*.

2.9.6. An Acute Accent is written over the vowel or semivowel in the stressed syllable, except when stress is on the second to last syllable (or *paenultima*) and in monosyllabic words. Accented long vowels and sonants are represented with special characters. The weak vowel of a possible diphthong is also accented; so in **eími** [e-'i-mi], *I go*, and not ***eimi**, pronounced ['ei-mi] if left unaccented.

2.9.7. The forms with the copulative **-qe**, *and*, and disjunctive **-wě**, *or*, are usually written by adding it to the preceding word, as in Latin *-que*, but with a hyphen.

2.9.8. The capital letters are used at the beginning of the following kinds of words:

- a. the names of days, months, seasons and public holidays; as, **Jānwārjos**, *January*, **Samos**, *summer*, **Newos Atnos**, *New Year*, etc.
- b. the names of people and places, including stars and planets; as, **Sāwel**, *Sun*, **Aleksanór**, *Alexander*, **Deiwos**, *God*, **Sindhu**, *Indus (river)*, **Teutiskolondhom**, *Germany* (cf. O.H.G. *Diutisk-lant* < **peudiska-landam*), etc.

NOTE. In old IE languages demonyms were not written in capital letters; as, **Európā**, **eurōpājós**; **Angljā** or **Angljolondhom**, *England* (cf. O.E. *Engla-land*, “*land of the Angles*”), but **angljós**, *English*; **Hispanja**, *Spain*, but **hispānós**, *Spanish*; **teutiskós**, *German*; and so on.

- c. people's titles, as **Prōbhastór**, *Professor*, **Kelomnelis**, *Colonel*, **Rēgtór**, *rector*,
- d. **Skeuros**, *North*, **Déksinā**, *South*, **Áusteros**, *East*, **Éperom**, *West*, and their derivatives.

NOTE. Germanic **Nertros**, *lower*, later *North*, from **ner-**, *lower, bottom*, and **Suntos**, “*of the Sun*”, later *South*, possibly from alternative root **Sun-** of **Sāwel**, *sun*; Gmc. *West* comes probably from the same root as **wespros**, *evening*.

e. in official or well-established place names; as **Plátejā**, *the Square*, etc.

2.10. KINDRED FORMS

Compare the following Europe's Indo-European words and their evolution in Germanic and Latin, with their common derivatives in Modern English.

<i>EIE</i>	<i>PGmc.</i>	<i>O.Eng.</i>	<i>Latin</i>	<i>English (Lat.)</i>
patér , <i>father</i>	faðer	fæder	pater	father (<i>paternal</i>)
septm , <i>seven</i>	sibun	seofon	septem	seven (<i>September</i>)
trebhō , <i>dwell</i>	þurp-	þorp	trabs/trabēs	thorp (<i>trabecula</i>)
globjō , <i>hold, clench</i>	klupjō	clyppe	globus	clip (<i>globe</i>)
bhrātēr , <i>brother</i>	brōþēr	brōþor	frāter	brother (<i>fraternal</i>)
bherō , <i>carry</i>	berō	bere	ferō	bear (<i>infer</i>)
wertō , <i>turn</i>	werþō	weorþe	uertō	worth (<i>versus</i>)
trejes , <i>three</i>	þrejez	þrēo	trēs	three (<i>trinity</i>)
dekṃ , <i>ten</i>	texan	ten, tien	decem	ten (<i>decimal</i>)
edmi , <i>eat</i>	et-	ete	edō	eat (<i>edible</i>)
dhēmi , <i>do, make</i>	dōmi	dōm	faciō (< <i>dha-k-</i> >)	do (<i>factor</i>)
dhersō , <i>be adroit</i>	dersō	dearr	festus (< <i>dhers-t-</i> >)	dare (<i>manifest</i>)
leuk- , <i>light</i>	leux-	lēoh-	lūc-	light (<i>lucid</i>)
kṛd- , <i>heart</i>	xert-	heort-	cord-	heart (<i>core</i>)
augō , <i>increase</i>	aukō	eacie	augeō	eke (<i>augment</i>)
gn- , <i>know</i>	kunnō	cunne	(g)nōtus	can (<i>notice</i>)
ghostis , <i>guest</i>	gastiz	gæst, giest	hostis	guest (<i>hostile</i>)
bhergh- , <i>mountain</i>	burg-	beorg	fortis (< <i>forctus</i> >?)	barrow (<i>force</i>)
leiq- , <i>leave</i>	leix ^w -	læne	līqu-	lend (<i>relic</i>)
qi-/qo- , <i>what, who</i>	h ^{wi} - / h ^{wo} -	hwi-	qui- / quo-	why/what (<i>quote</i>)
cemjō , <i>come</i>	k ^w emjō	-cwem-	ueniō	come (<i>venue</i>)
cīwós , <i>alive</i>	k ^{wi} (k)waz	cwic	uīuus	quick (<i>vivacity</i>)
leghús , <i>light</i>	lextaz	liht, lēoht	leuis	light (<i>levity</i>)
chormos , <i>warm</i>	warmaz	wearm	formus	warm (<i>furnace</i>)

3. WORDS AND THEIR FORMS

3.1. THE PARTS OF SPEECH

3.1.1. Words are divided into eight Parts of Speech: Nouns, Adjectives (including Participles), Pronouns, Verbs, Adverbs, Prepositions, Conjunctions, and Interjections.

3.1.2. A Noun is the name of a person, place, thing or idea; as, **Klewopatrā**, *Cleopatra*, **dānus**, *river*, **dhworis**, *door*, **wṛdhom**, *word*.

Names of particular persons and places are called Proper Nouns; other nouns are called Common.

NOTE. An Abstract Noun is the name of a quality or idea. A Collective Noun is the name of a group or a class.

3.1.3. An Adjective is a word that attributes a quality; as, **patrjóm**, *parental*, **leukós**, *bright*, **kartús**, *hard*, **gr̥dhís**, *grown*.

NOTE 1. A Participle is a word that attributes quality like an adjective, but, being derived from a verb, retains in some degree the power of the verb to assert.

NOTE 2. Etymologically there is no difference between a noun and an adjective, both being formed alike. So, too, all names originally attribute quality, and any common name can still be so used. Thus, **Regeinā Elisabet II**, *Queen Elizabeth II*, (cf. Gk. *Ελισ(σ)αβετ*, from Hebrew *Eli-sheva*, “*God is an oath*”), distinguishes this *Elizabeth* from other *Elizabeths*, by the attribute expressed in the name **Regeinā**, *Queen*.

3.1.4. A Pronoun is a word used to distinguish a person, place, thing or idea without either naming or describing it: as, **egó**, *I*, **tewós**, *thine*, **wejes**, *we*.

Nouns and pronouns are often called Substantives.

3.1.5. A Verb is a word capable of asserting something: as, **bherō**, *I carry, bear*; **bhāti**, *it shines*.

NOTE. In English the verb is usually the only word that asserts anything, and a verb is therefore supposed to be necessary to complete an assertion. Strictly, however, any adjective or noun may, by attributing a quality or giving a name, make a complete assertion; as, **wīrós bhilis (esti)**, *the man is good (decent)*, unlike **bhilis wīrós**, *the good man*; or **autom dwenos (esti)**, *the car is*

good (efficient), unlike **dwenos autom**, *the good car*. In the infancy of language there could have been no other means of asserting, as the verb is comparatively of late development.

3.1.6. An Adverb is a word used to express the time, place, or manner of an assertion or attribute: as, **per**, *in front*, **epi**, *near*, **antí**, *opposite*.

NOTE. These same functions are often performed in Indo-European by cases of nouns, pronouns and adjectives, and by phrases or sentences.

3.1.7. A Preposition is a word which shows the relation between a noun or pronoun and some other word or words in the same sentence; as, e.g., **ad**, *at*, *to*, **dē**, *from upwards*, **kom**, *with*, **ek(sí)**, *outside*, **upo**, *under*, and so on.

3.1.8. A Conjunction is a word which connects words, or groups of words, without affecting their grammatical relations: as, **-qe**, *and*; **-wě**, *or*, **-ma**, *but*, **-r**, *for*.

3.1.9. Interjections are mere exclamations and are not strictly to be classed as parts of speech; as, **alā!** *hello!*; **ō!** *O* (vocative); **wai!** *alas* (grief); **ha ha!** (laughing sound), or older **kha kha!** as in **khákhatnos**, *laugh*; **ha!** (surprise); etc.

NOTE. Interjections sometimes express an emotion which affects a person or thing mentioned, and so have a grammatical connection like other words.

3.2. INFLECTION

3.2.1. Indo-European is an inflected language. Inflection is a change made in the form of a word to show its grammatical relations.

NOTE. Some modern Indo-European languages, like most Germanic and Romance dialects, have lost partly or completely their earliest attested inflection systems – due to different simplification trends –, in nominal declension as well as in verbal conjugation.

3.2.2. Inflectional changes sometimes take place in the body of a word, or at the beginning, but oftener in its termination:

bhabhā, *the or a bean*, **snichwós**, *of the snow*, **reidhō**, *I ride*, **idhi!** *go!*

3.2.3. Terminations of inflection had possibly originally independent meanings which are now obscured. They probably corresponded nearly to the use of prepositions, auxiliaries and personal pronouns in English.

Thus, in **ghórdejos**, *of the barley* (Gen.), the termination is equivalent to “*of the*”; in **deikō**, *I show* (Indicative), and **dikóm**, *I showed* (Aorist), the change of vowel grade and accent signifies a change in the aspect.

3.2.4. Inflectional changes in the body of a verb usually denote relations of tense or mood, and often correspond to the use of auxiliary verbs in English:

(**tu**) **déikesi**, *(thou) show*; **doike**, *he showed*; (**gí**)**gnósketi**, *he knows*, **gégona**, *I knew* (see Verbal Inflection for Reduplication and its meaning).

3.2.5. The inflection of Nouns, Adjectives, Pronouns and Participles to denote gender, number and case is called Declension, and these parts of speech are said to be *declined*.

The inflection of Verbs to denote voice, mood, tense, number and person is called Conjugation, and the verb is said to be *conjugated*.

NOTE. Adjectives are often said to have inflections of comparison. These are, however, properly stem-formations made by derivations.

3.2.6. Adverbs, Prepositions, Conjunctions and Interjections are not inflected, and together form the group of the so-called Particles.

3.3. ROOT, STEM AND BASE

3.3.1. The body of a word, to which the terminations are attached, is called the Stem. The Stem contains the idea of the word without relations; but, except in the first part of compounds (e.g. **somo-patōr**, “*of the same father*”, *sibling*, **mṇ-dōmi**, *commit*), it cannot ordinarily be used without some termination to express them.

NOTE. According to Mallory & Adams (2006): “To the root might be added a variety of suffixes to create a stem and then finally the case endings depending on number and perhaps gender. In some cases, the so-called root-nouns, there are no suffixes before the case ending. Using R for ‘root’, S for ‘stem-creating suffix’, and E for ‘case-number-ending’, we might establish the formula for an inflected word in Proto-Indo-European as R-(S)-E”.

Thus the stem **pater-** denotes *father*; **patér**, Nominative, means *a father* or *the father*, as the Subject or Agent of an action; **patér** (or **pater**) is the Vocative, as in *O father!*; **patérṃ** is the means *to a father* or *to the father*, as the Direct Object; **patrós** is the Genitive and indicates *of a father* or *of the father*, and so on.

NOTE. In inflected languages like Indo-European, words are built up from Roots, which at a very early time were possibly used alone to express ideas. Roots are then modified into Stems, which, by inflection, become fully formed words. The process by which roots are modified, in the various forms of derivatives and compounds, is called stem-building. The whole of this process is originally one of composition, by which significant endings are added one after another to forms capable of pronunciation and conveying a meaning.

3.3.2. A Root is the simplest form attainable by analysis of a word into its component parts. Such a form contains the main idea of the word in a very general sense, and is common also to other words either in the same language or in kindred languages; cf. for **stā-**, *stand*, reduplicated present **sí-stā-mi**, *I stand*, noun **stā-men-**, *place for standing*, zero-grade p.p. **sta-tós**, *placed, standing*, or noun **sta-tis**, *erection, standing*.

For example, the root of verb **spekjō**, *look*, is **spek-**, which does not necessarily mean *to look*, or *I look*, or *looking*, but merely expresses vaguely the idea of *looking*, and possibly cannot be used as a part of speech without terminations.

3.3.3. The Stem may be the same as the root; as, **dō-**, *give*, **dakru**, *tear*; but it is more frequently formed from the root.

1. By changing or lengthening its vowel; as, from athematic root verb **dā-**, *divide*, common derivative **dai-mai**, *divide up, distribute*.

2. By the addition of a simple suffix; as, from root **dā-**, *divide*, derivative **dā-mos**, *people, people's division*, cf. Dor. Gk. *δημος*, O.Ir. *dām*, Hitt. *da-ma-a-iš*.

NOTE. Some suffixes probably conveyed an earlier underlying meaning, e.g. the suffix **-trom** tends to indicate an instrument, as **arā-trom**, *plough*, from a verb **arājō**, *plough*, while kinship names tend to have the suffix **-er** or **-ter**, cf. **swes-ōr**, *sister*, **bhrā-tēr**, *brother*.

3. By two or more of these methods; from the same root, suffixed derivative **dai-tis**, *time, period*, cf. Gmc. *tīp*, Arm *ti*, as well as Gk. *δαίτης*, O.Ind. *dātu-*.

4. By derivation and composition, following the laws of development peculiar to the language, which we will see in the corresponding chapters.

3.3.4. The Base is that part of a word which is unchanged in inflection: as, **chorm-** in **chormos**, *warm*, **eus-** in **eusō**, *burn*; **cou-** in **cōus**, *cow*, etc.

The masculine functions as the negative term in the opposition, i.e. when the gender is not defined, the masculine is used. This is a grammatical utility, one that is only relevant for concordance, and which has to do with the evolution of the language and its inflection.

The earliest PIE had probably no distinction of gender; when the inanimate appeared, it was marked by a different inflection, and the animates remained as the negative term in the opposition. After that, probably at the same time as the thematic declension (in -e/o) appeared, the feminine was differentiated from the remaining animates, with marks like the different stem vowel (usually -a) or vowel length (as -ī, -ū). Therefore, the feminine is the positive term of the opposition within the animates, because when we use it we reduce the spectrum of the animates to the feminine, while the masculine still serves as the negative (non-differentiated) term for both, the general and the animates, when used in this sense, i.e. when not differentiating the masculine from the other genders.

a. The Base and the Stem are often identical, as in many consonant stems of nouns (as **eghr**, *boundary*). If, however, the stem ends in a vowel, the latter does not appear in the base, but is variously combined with the inflectional termination. Thus the stem of **nócodos**, *naked*, is **nocod-**; that of **ceri**, *mountain*, is **cer-**.

3.3.5. Inflectional terminations are modified differently by combination with the final vowel or consonant of the Stem, and the various forms of Declension and Conjugation are so developed.

3.4. GENDER

3.4.1. The Genders distinguished in Modern Indo-European are three: Masculine, Feminine (both are referred to as Animate) and Neuter or Inanimate.

3.4.2. The gender of Indo-European nouns is either *natural* or *grammatical*.

a. Natural Gender is distinction as to the sex of the object denoted: **bhrātēr** (m.), *brother*; **cenā** (f.), *woman, wife*.

b. Grammatical Gender is a formal distinction as to sex where no actual sex exists in the object. It is shown in the form of the adjective joined with the noun: as **swādús noqtis** (f.), *a pleasant night*; **mṛghús kanmṇ** (m.), *brief song*. The gender of the adjective is simply a gender of concordance: it indicates to which noun of a concrete gender the adjective refers to.

NOTE 2. Names of classes or collections of persons may be of any gender. For example, **wolgos** (m.), (*common*) *people*, or **teutā**, *people (of a nationality)*.

3.4.3. The neuter or inanimate gender differs from the other two in inflection, not in the theme vowel. The gender of the animates, on the contrary, is usually marked by the theme vowel, and sometimes by declension, vocalism and accent.

3.4.4. The neuter does not refer to the lack of sex, but to the lack of liveliness or life. Sometimes, however, animates can be designated as inanimates and *vice versa*.

While the distinction between masculine and feminine is usually straightforward, sometimes the attribution of sex is arbitrary; thus, different words for parts of the body are found feminine, as **nāsis**, *nose*, **kanmā**, *leg*; masculine, as **kolsos**, *neck*, **armos**, *arm, upper arm*; and neuter, as **kaput**, *head*, or **genu**, *knee*.

3.4.5. The animate nouns can have:

a. An oppositive gender, marked:

I. by the lexicon, as in **patēr/mātēr**, *father/mother*, **bhrātēr/swesōr**, *brother/sister*, **sūnūs/dhugtēr**, *son/daughter*;

II. by the stem ending, as in general **ekwos/ekwā**, *horse/mare*, or the rare **wlqos/wlqīs**, *wolf/she-wolf*, **djēus/djewja**, *sky(-god)/sky-goddess*;

III. by both at the same time, as in **swekros/swekrūs**, *father-in-law-mother-in-law*, **wīrós/cenā**, *man-woman*, **regs/regeinā**, *king-queen*.

b. An autonomous gender, that does not oppose itself to others, as in **nāus** (f.), *ship*, **pods** (m.), *foot*, **egnis** (m.), *fire*, **owis** (f.), *sheep*, **jewos** (n.) or **legs** (f.), *law*.

c. A common gender, in nouns that are masculine or feminine depending on the context; as, **cōus**, *cow or bull*, **deuks**, *leader*, **ghostis**, *foreigner*.

d. An epicene gender, which, although being masculine or feminine, designates both sexes; as, **médodiks**, *doctor*, **nawāgós**, *sailor*, **nemots**, *enemy*, **setis**, *visitor*.

3.4.6. The gender of a noun can thus be marked by the stem vowel (or sometimes by inflection), or has to be learnt: it is a feature of a word like any other. In its context, concordance is a new gender mark; a masculine noun has a masculine adjective, and a

feminine noun a feminine adjective. However, not all adjectives differentiate between masculine and feminine, a lot of them (those in **-i-s**, **-u-s**, **-ēs**, **-ōn**, and some thematic in **-os**) are masculine and feminine: only the context, i.e. the noun with which they agree, helps to disambiguate them. This happens also in nouns with a common gender.

3.4.7. Most endings do not indicate gender, as in **patér** and **mātér**. Only by knowing the roots in many cases, or from the context in others, is it possible to determine it. Some of the suffixes determine, though, totally or partially if they are masculine or feminine. These are the following:

1. **-os** marks masculine when it is opposed to a feminine in **-ā** or **-ī/-ja**, as in **ekwos/ekwā**, **deiwos/deiwā**, *god/goddess*, etc. This happens also in adjectives in the same situation, as in **newos/newā**, **bheronts/bherontja**. In isolated nouns, **-os** is generally masculine, but some traces of the old indistinctness of gender still remained in Late PIE, as in the names of trees (among others). In adjectives, when the ending **-os** is not opposed to feminine, concordance decides.

2. **-ā** marks the feminine in oppositions of nouns and adjectives. It is usually also feminine in isolated nouns, in the first declension. But there are also some masculines in **-ā**; as, **sloughā**, *servant*, cf. O.Sla. *slūga*, Lith. *slauga* “service”, O.Ir. *sluag*, “army unit”, etc.

3. **-ī/-ja** (<*-ih₂), although feminine in Late PIE, shows remains of its old Abstract-Collective value, as neuter plural. It appears in nouns, adjectives and pronouns.

4. Roots ending in long vowels **-ī** and **-ū** are always feminines.

3.5. GENERAL RULES OF GENDER

3.5.1. Names of Male beings, and of Rivers, Winds, Months, and Mountains are masculine:

patér, *father*, **Góralos**, *Charles*, **Reinos**, *the Rhine*, **Áusteros**, *south wind*, **Magjos**, *May*, **Urales**, *the Urals*.

NOTE. For **Uraliská Cerja**, *Ural Mountains*, cf. Russ. Уральские горы (*Uralskiye gory*).

a. A few names of Rivers ending in **-ā** (as **Wolgā**), and many Greek names ending in **-ē(s)**, which usually corresponds to IE **-ā**, are feminine; others are variable or uncertain, generally retaining their oldest attested IE gender in MIE.

b. Some names of Mountains are feminines or neuter: as, **Alpes** (f. pl.), *the Alps*.

3.5.2. Names of Female beings, of many Cities, Countries, Plants, Trees, Gems, Animals, and abstract Qualities, are feminine:

māter, *mother*, **Djówiljā**, *Julia*, **Frankjā**, *France*, **Rōmā**, *Rome*, **bharwos**, *pinetree*, **saniprijós**, *sapphire* (Gk. *sáppheiros*, ult. from Skr. *sani-priyaḥ*, lit. “sacred to Saturn”), **aqamarinā**, *aquamarine*, **wērā**, *true*.

a. Some names of Towns and Countries are masculine: as, **Kṛsnomontis**, *Montenegro*; or neuter, as, **Jugtóm Regnom**, *United Kingdom*, **Swjoregnom**, *Kingdom of Sweden*, **Finnlondhom**, *Finland*.

b A few names of Plants and Gems follow the gender of their termination; as, **kṃtaurjom** (n.), *centaury*, **úpolos** (m.), *opal*.

NOTE. The gender of most of the above may also be recognized by the terminations, according to the rules given under the different declensions.

3.5.3. Indeclinable nouns, infinitives, terms or phrases used as nouns, and words quoted merely for their form, are neuter: **sestum** (<*sed-tu*-) *to sit, be sitting*, “**wētānom smeughtum**”, “*smoking prohibited*”; **gummi**, *gum*.

NOTE. Eng. *gum* comes from O.Fr. *gomme*, from L.Lat. *gumma*, from Lat. *gummi*, from Gk. *kommi*, from Coptic *kemai*, hence MIE loan **gummi**, PGk. *kommi*.

3.5.4. Nouns, Pronouns, Adjectives and Participles are declined in MIE in two Numbers, singular and plural – Late PIE had also possibly a dialectal dual – and up to eight cases, Nominative, Vocative, Accusative, Genitive and Oblique - which is found subdivided into combinations of Dative, Locative, Instrumental and Ablative.

NOTE 1. European dialects show around six cases, but most of the oldest attested ones (PII, PGk, Ita.) and Balto-Slavic show remains of up to eight original cases. Even though the situation has evolved differently due to migrations and linguistic contacts, linguists generally agree that the most securely reconstructed are the nominative, vocative, accusative, and genitive of the singular and plural. Traditional theories maintain that the original common PIE situation is a complex system of eight noun cases. On the contrary, a five-case system is for other scholars the oldest situation (of Middle PIE, as Anatolian dialects apparently show), later changed by Late PIE by way of merging or splitting the five original cases. An eight-case system would have been, then, an innovation of individual dialects, just as the phonetic satemization. It is thus a general opinion

3. Words and their Forms

that already in Late PIE both trends (split and convergence of Obliques) coexisted. In this MIE Grammar we follow the general, oldest trend, i.e. an eight-case inflection system, due to the findings in North-West IE.

NOTE 2. In the number we use singular and plural, and not dual, not only because of its doubtful existence in IE II and the objections to its reconstruction for Late PIE, but because it is also more practical in terms of modern Indo-European languages.

I. The Nominative is the case of the Subject of a sentence.

II. The Vocative is the case of Direct Address.

III. The Accusative is the case of the Direct Object of a verb. It is used also with many prepositions.

IV. The Genitive may generally be translated by the English Possessive, or by the Objective with the preposition *of*.

V. The Obliques might be found as:

a. The Dative, the case of the Indirect Object. It may usually be translated into English by the Objective with the preposition *to* or *for*.

b. The Locative, the place *where*.

c. The Instrumental, the thing *with*.

d. The Ablative, usually the Objective with *from*, *by*, *with*, *in* or *at*. It is often found with prepositions.

NOTE. The oblique cases appear in the English pronoun set; these pronouns are often called *objective pronouns*; as in *she loves me* (accusative), *give it to me* (dative) or *that dirt wasn't wiped with me* (instrumental), where *me* is not inflected differently in any of these uses; it is used for all grammatical relationships except the genitive case of possession and a non-disjunctive nominative case as the subject.

3.6. VOWEL GRADE

3.6.1. The vowel grade or Ablaut is normally the alternation between full, zero or lengthened grade vocalism. Proto-Indo-European had a regular ablaut sequence that contrasted the five usual vowel sounds called *Thematic*, i.e. **e/ē/o/ō/ø**. This means that in different forms of the same word, or in different but related words, the basic vowel, a

short **e**, could be replaced by a long **ē**, a short **o** or a long **ō**, or it could be omitted (transcribed as **Ø**).

NOTE. The term Ablaut comes from Ger. *Abstufung der Laute*, ‘vowel alternation’. In Romance languages, the term Apophony is preferred.

3.6.2. When a syllable had a short **e**, it is said to be in the “*e grade*”; when it had no vowel, it is said to be in the “*zero grade*”, when in **o**, in “*o grade*”, and they can also be “*lengthened*”. The e-grade is sometimes called “*full grade*”.

A classic example of the five grades of *ablaut* in a single root is provided by the following different case forms of EIE **patér**, *father*, and **ḡpatōr**, *fatherless*.

Ablaut grade	EIE	Greek	(translit.)	Case
<i>e-grade or full grade</i>	pa-<u>ter</u>-ḡ	πα-τέρ-α	<i>pa-tér-a</i>	Accusative
<i>lengthened e-grade</i>	pa-<u>tér</u>	πα-τήρ	<i>pa-tér</i>	Nominative
<i>zero-grade</i>	pa-tr-ós	πα-τρ-ός	<i>pa-tr-ós</i>	Genitive
<i>o-grade</i>	ḡ-pá-<u>tor</u>-ḡ	ᾱ-πά-τορ-α	<i>a-pá-tor-a</i>	Accusative
<i>lengthened o-grade</i>	ḡ-pa-<u>tōr</u>	ᾱ-πά-τωρ	<i>a-pá-tōr</i>	Nominative

NOTE. Another example of the common Ablaut is t-stem **nepot-**, *grandson*, which gives lengthened grade Nominative, **nep-ōts**, full-grade Genitive **nép-ot-os**, and zero-grade feminine **nep-t-is**, *grand-daughter*. The study of declensions and practice with vocabulary should help the reader learn such special genitives.

3.6.3. Synoptic table of common examples of different vowel grades:

Vowel Grade	Full (F)	Zero (Ø)	Lengthened (L)
e/o - Ø - ē/ō	dom-	dm-	dōm-
je/jo - i - jē/jō	djeu-	diw-	djēu-
we/wo - u - wē/wō	kwon-	kun-	kwōn
ei/oi/ai - u/i - ēi/ōi/āi	bheid-	bhid-	bhēid-
eu/ou/au - u/i - ēu/ōu/āu	bheud-	bhud-	bhēud-
au/ai - u/i - āu/āi	pau-	pu-	pāu-
ā/ē/ō - a - ā/ē/ō	stā-	sta-	stā-
ēi/ōi - ū/ī - ēi/ōi	pōi	pī	pōi

3.6.4. There are also some other possible vowel grade changes, as *a-grade*, *i-grade* and *u-grade*, which usually come from old root endings, rather than from systematized phonetic changes.

NOTE. It seems that the alternation full-grade/zero-grade in PIH was dependent on the accent. Compare **klewos/klutós**, **eími/imés**, **patérṃ/patrós**, etc., where the unstressed morpheme loses its vowel. This happens only in the oldest formations, though, as Late PIE had probably lost this morphological pattern, freezing such older alternations and creating a new (more stable) vocabulary without changes in vowel grade.

3.7. WORD FORMATION

3.7.1. Word Formation refers to the creation of new words from older ones. Indo-European scholars show an especial interest in Derivational Affixes (most commonly Suffixes), i.e. morphemes that are attached to a base morpheme, such as a Root or a Stem, to form a new word. The main affixes are as follows.

3.7.2. Athematic suffixes:

a. The most simple is the zero-ending, i.e. full-grade root nouns like **dem-s** (Gk. *des-*), *house*, in consonant, as **neq-t-s** (Hitt. *nekuz*), *night*, or **men-s** (Av. *maz-*), *mind*, in **-r**, as **ghes-ōr** (Hitt. *kiššar*), *hand*, with apophony, Ac. **ghes-er-ṃ** (Hitt. *kiššeran*), Loc. **ghes-r-i** (Hitt. *kišri*, Gk. *kheirî*), with ending **-n**, as **or-ōn** (Hitt. *ḫara[š]*, stem *ḫaran-*, from PIH **h₃or-o-*, cf. O.H.G. *aro*, Eng. *erne*, Gk. *or-n-[is]*), *eagle*. Common examples include **regs**, as Lat. *rex*, Cel. *ri*, Gmc. *rīh*, Skr. *rāt*, **cōus**, as Lat. *bou*, Cel. *bó*, Gmc. *ko*, Skr. *gáu/go*, **mūs**, Lat. *mūs*, Gk. *μῦς*, Gmc. *mūs*, Sla. *mys*, Skr. *mū*, etc.

b. Also, the stem **r/n**, with **-r-** in ‘strong’ cases (Nom-Acc.) and **-n-** in the Obliques, is well represented in Anatolian; see Variable Nouns in the next chapter for more on these so-called *heteroclitēs*.

c. An old stem in **-u-** appears e.g. in the words **gon-u**, *knee*, **dor-u**, *wood*, and **oj-u**, *lifetime*, cf. Av. *zānū*, *dārū*, *āiiū*, Skr. *jānu*, *dāru*, *āyu*, Gk. *góny*, *dóry*, *ou(kî)*, “no”, etc. Apophonic variants are found as full-grade **genu-**, **deru-**, **ēju-**, cf. Hitt. *genu-*, Lat. *genu-*, Sla. *dérw-o*, Gk. *ai(w)-eí*, etc., and as zero-grade **gn-eu**, **dr-eu**, **j-eu-**, as in Goth. *kniu*, Av. *yaoš*, Hitt. *ganu-t*, etc. Such zero-grades are found within Declension, in Composition (cf. Skr. *jñu-bādh-*, “kneeled”, Gk. *dru-tómos*, “timber-cutter”), and in Derivation, as e.g. **ju-wen-**, *vigorous*, *young* (cf. Skr. *yuván-*, Lat. *ijuven-is*).

d. A suffix **-it-**, which refers to edible substances, as **mel-it**, *honey* (cf. Gk. *mélit-*, Hitt. *milit*, Luw. *mallit*, Gmc. *mil-*), **sep-it**, *wheat* (cf. Hitt. *šepplit*, Gk. *álphit*), etc.

3.7.3. Feminine and Abstract (Collectives):

a. A general PIH suffix $^{*-(e)h_2}$ is found in Feminine, as in **senā**, *old* (<*seneh₂*, cf. Gk. *hénē*, Skr. *śanā-*, Lith. *senà*), **swekrús**, *mother-in-law* (<*swekrúh₂*, cf. O.Sla. *svekrŭ*, Lat. *socrus*, O.H.G. *swigar*), in Abstract Collectives, as in Gk. **tomá**, *cut*, or **neurá**, *rope made from sinew* (cf. **neurom**, Eng. *neuron*), etc., and in the Nom.-Acc. Neuter singular of the collective that functions as Nom.-Acc. Plural (cf. Skr. *yugá*, Gk. *zygá*, Lat. *iuga*, Goth. *juka*, “*jokes*”, Hitt. *-a*, Pal. *-a/-ā*, etc.).

b. The Feminine and Abstract Collective PIH $^{*-ih_2}$ gives two alternative phonetic outputs in Late PIE, represented $^{*-jə}$ and (contracted) $^{*-ī}$, written and pronounced as MIE **-ja** (not to be confused with general **-jā**, from PIH $^{*-jeh_2}$) and **-ī**; cf. Skr. *devī* (Gen. *dēvyās*), “*goddess*”, etc.

NOTE. According to Mallory & Adams (2006), “[t]he fact that Proto-Indo-European also forms collectives in $^{*-h_2-}$ (e.g. the Hittite collective *alpa*, ‘*group of clouds*’ from a singular *alpeš*, ‘*cloud*’) has suggested that this was its original use and that it later developed the specifically feminine meaning”. Abstract nouns are usually built in PIE with suffix **-tāt**; as, **kommoinitāts**, *community*, **solwotāts**, *totality*, **áiwtotāts**, *eternity*, etc.

3.7.4. Thematic Suffixes, the most abundant affixes found in PIE Nominal and Adjectival derivation:

a. A simple **-o-**, which appears in some primary and secondary old formations, as **wlqo-s**, *wolf*, **rtko-s**, *bear*, neuters **jug-ó-m**, *joke*, **werg-o-m**, *work*, adjectives **sen-o-**, *old*, **new-o-**, *new*, etc.

NOTE. The Distinction into primary and secondary is not straightforward, unless there is an older root attested; compare e.g. PIE **ekw-os**, *horse*, which has been deemed a derivation from PIH *h₁ek-*, “*quick*”, the root behind adjective **ókús**.

Accented **-ó-** is deemed a secondary suffix which marks the possession of the base, as well as adjectives in **-ó-** with lengthened grade root, cf. PIE **cjā**, *bow's string*, as Skr. *jjá*, but **cjos**, *bow* (< “*that has a bow's string*”), as Gk. *biós*, or ***swekrós** (>**swekros**), *father-in-law*, from **swekrús**, *mother-in-law*, ***deiwós** (>**deiws**), from **djēus**, etc.

b. About the Root Grade, o-grade roots are found in two thematic types, barytone Action Nouns (cf. Gk. **tomos**, “*slice*”), and oxytones Agent Nouns and Adjectives (cf.

Gk. **tomós**, “who cuts, acute”), both from PIE **tem-**, *cut*; zero-grade in neuters **jugóm**, *joke*, from **jeug-**, *join*, and in second elements of compounds like **ni-sd-os**, *nest*, from **sed**, *sit*, or **newo-gn-ós**, “newborn”, as Gk. *neognós*.

c. Adjectival suffixes **-jo-** and **-ijo-** have a relational sense, as in **cow-jós**, “of a cow/ox”, from **cow-**, *cow, ox*, as in Av. *gaoya-*, Skr. *gavyá* or *gávya*, Gk. *hekatóm-boios*, “that costs a hundred cows”, Arm. *kogi* (<**cow-ijo-**), “derived from the cow”, O.Ir. *ambuæ* (<**η-cow-ijo-**, as in Skr. *ágos*, Gk. *abouteō*), “man without cows”, or e.g. **patr-jós**, *paternal*, **ped-jós**, “of the foot”, etc. As a nominal suffix, cf. Lat. *ingenium*, *officium*, O.Ir. *cride*, *setig*, Skr. *vairya*, *saujanya*, Sla. *stoletie*, *dolia*, etc.

d. Verbal adjectives in **-tó-** (Ind.-Ira. **-nó-**), with zero-grade verbal root, are common in secondary derivation, as in **klu-tós**, *heard, famous*, from **kleu-**, *hear*, cf. Skr. *śrutá-*, Av. *sruta-*, Gk. *klytós*, Lat. *in-clitus*, M.Ir. *rocloth*, O.H.G. *Hlot-*, Arm. *lu*, etc. They were incorporated to the Verbal inflection as participles and gerunds. For nouns in **-to-**, **-no-**, **-ti(j)-o-**, **-ni(j)-o-**, **-tu(w)-o-**, **-nu(w)-o-**, etc. cf. Skr. *svápn(ī)ya*, *prāṇīya*, Lat. *somnium*, *dominium*, O.Ir. *blíad(a)in*, Sla. *sunie*, *cozarenie*, etc.

e. Common thematic suffixes include **-nó-**, **-ro-**, **-mo-**, and diminutives in **-ko-**, **-lo-**, **-isko-**, etc. which may also be participial, ordinal or adjectival (from nouns) lengthenings. They are usually preceded by a vowel, as in **-e/onó-**, **-e/oro-**, and so on. Compare for example from **cher-**, *warm*, adjective **chor-mos**, *warm*, cf. Gmc. *warmaz*, Lat. *formus*, Skr. *gharmá*, Av. *garəma-*, Gk. *thermós*, Toc. A. *särme*, Phryg. *Germiai*, Arm. *jerm*, Alb. *zjarm*. **-bhó-** gives names of animals, as e.g. Gk. *éribhos*, *kid*.

f. A secondary suffix **-tero-/-toro-** marks the opposition of two notions, and is found in Anatolian (cf. Hitt. *nun-taras*, Adv. gen. “from now”), **ál-teros**, “the other (of two)” (cf. Goth. *anþar*, Skr. *ántaras*, Lat. *alter*, etc.) opposed to a simple “other”, **aljós** (cf. Skr. *anyás*, Lat. *alius*, Gk. *állos*, Goth. *aljīs*). This suffix is also found in some syntactic formations, as Gk. *deksiós* – *aris-terós*, *skaiós* – *deksi-terós*, both meaning “right-left” (Benveniste 1948).

g. The suffix **-wó-** is particularly found in words for “alive”, as **cī-wó-** (cf. Skr. *jīvás*, Lat. *uīuos*, O.Ir. *béo*, Welsh *buw*, Goth. *qius*) and “dead”, as **m̥-wó-** (cf. O.Ir. *marb*, Welsh *marw*, and also Lat. *mortuos*, Sla. *mǐrtvŭ*, where the **-t-** was possibly inserted influenced by **m̥-tó-**, “mortal”).

h. There are some instrumental suffixes, as **-tro-**, **-tlo-**, **-klo-**, **-dhro-**, **-dhlo-**, as Lat. *-trum*, *-c(u)lum*, *-brum*, *-bulum*, etc.; e.g. **arā-trom**, *plough*, cf. Gk. *árotron*, Lat. *aratrum*, O.Ir. *arathar*, Welsh *aradr*, Arm. *arawr*, Lith. *árklas*, etc.; also, Gk. *báthron*, O.Ind. *bharítram*, Goth. *fōdr*, etc.

i. Other common suffixes (also participial) are **-men-**, **-mon-**, **-mn-**, with secondary **-mn-to-**, **-men-o-**, **-men-t-** (and **-wen-**, v.s.), etc., cf. Lat. *augmentum*, or Goth. *hlumant*, equivalent to O.Ind. *s'rómatam* both meaning “*reputation*”, from **kleu-**, *hear*, and so on.

NOTE. Detailed information on Proto-Indo-European word morphology with dialectal examples is in Appendix III.3, and online at <http://dnghu.org/indoeuropean_noun_morphology.pdf>.

3.8. COMPOUND WORDS

3.8.1. *Nominal Compositum* or nominal composition is the process of putting two or more words together to form another word. The new word, called a Compound Word, is either a Noun or an Adjective, and it does not necessarily have the same meaning as its parts.

3.8.2. The second term of a Compound Word may be

- a) a Noun (Gk. *akró-polis*, “*high city, citadel*”)
- b) an Adjective (Gk. *theo-eíkelos*, “*similar to the gods*”) or
- c) a Noun adapted to the adjectival inflection (Gk. *arguró-tozos*, “*silver arc*”)

NOTE. Sometimes a suffix is added (cf. Gk. *en-neá-boios*, “*of nine cows*”), and the Compound Noun may have a different gender than the second term (cf. Lat. *triuium*, “*cross roads*”, from *trēs* and *uia*).

3.8.3. The first term is a Pure Stem, without distinction of word class, gender or number. It may be an Adverb, a Numeral (Gk. *trí-llistos*, “*suppllicated three times*”, *polú-llistos*, “*very suppllicated*”) or a Pronoun (cf. O.Ind. *tat-puruṣa*, “*that man*”), as well as a Nominal-Verbal stem with Nominal (Gk. *andra-phónos*, “*who kills a man*”), Adjetival (Gk. *akró-polis*), or Verbal function (Gk. *arkhé-kakos*, “*who begins the evil*”), and also an Adjective proper (Gk. *polú-tropos*, “*of many resources*”).

3.8.4. Usually, the first term has zero-grade, cf. O.Ind. *ṇr-hán*, Gk. *polú-tropos*, Lat. *aii-(caps)*, etc. Common exceptions are stems in **-e/os**, as Gk. *sakés-palos*, “*who shakes the shield*” (Gk. *sákos*, “*shield*”), and some suffixes which are substituted by a

lengthening in **-ī**, cf. Gk. *kudi-áneira*, “*who glorifies men*” (Gk. *kudrós*), Av. *bərəzi-čaxra-*, “*of high wheels*” (Av. *bərəzant-*).

In Thematic stems, however, the thematic **-e/o** appears always, as an **o** if Noun or Adjective (Gk. *akró-polis*), as an **e** if Verb (Gk. *arkhé-kakos*).

3.8.5. The first term usually defines the second, the contrary is rare; the main Compound types are:

A. Formed by Verbs, cf. O.Ind. *ṇr-hán*, Gk. *andra-phónos* (Gk. *andro-* is newer) Lat. *auceps*, O.Sla. *medv-ědĭ*, “*honey-eater*”, *bear*, and also with the second term defining the first, as Gk. *arkhé-kakos*.

B. Nominal Determiners (first term defines the second), with first term Noun (cf. Gk. *mētro-pátōr*, “*mother’s father*”, Goth. *þiudan-gardi*, “*kingdom*”), Adjective (cf. Gk. *akró-polis*, O.Sla. *dobro-godŭ*, “*good time*”, O.Ir. *find-airgit*, “*white plant*”, Lat. *angiportus*, “*narrow pass*”), or Numeral (cf. Lat. *tri-uum*, from *uia*, Gk. *ámaza*, “*chariot frame*”, from *ázōn*).

C. Adjectival Determiners (*tatpuruṣa-* for Indian grammarians), with first term Noun (cf. Gk. *theo-eíkelos*, Goth. *gasti-gods* “*good for the guests*”), Adverb (cf. O.Ind. *ájñātas*, Gk. *ágnotos*, “*unknown*”, *phroudos*, “*who is on its way*”, from *pró* and *odós*).

D. Possessive Compounds (*bahu-vrihi-*, “*which has a lot of rice*”, for Indian grammarians), as in Eng. *barefoot*, “*(who goes) with bare feet*”, with the first term Noun (cf. Gk. *arguró-tozos*, O.Sla. *črŭno-vladŭ*, “*of black hair*”), Adjective (cf. Lat. *magnanimus*, “*of great spirit*”), Adverb (cf. O.Ind. *durmanās*, GK. *dus-menés*, “*wicked*”).

The accent could also distinguish Determiners from Possessives, as in O.Ind. *rāja-putrás*, “*a king’s son*”, from O.Ind. *rajá-putras*, “*who has a son as king, king’s father*”.

3.9. NAMES OF PERSONS

The use of two-word compounds for personal names was common in PIE; as, **Suklewos**, *of good fame*, with cognates found in poetic diction, cf. Gk. *Eukleés*, and Skr. *Suśráva-*, or Illyr. *Vescleves-*.

NOTE. The use of two-word compound words for personal names is common in IE languages. They are found in in Ger. *Alf-red*, “*elf-counsel*”, O.H.G. *Hlude-rīch*, “*rich in glory*”, O.Eng. *God-gifu*, “*gift of God*” (Eng. *Godiva*), Gaul. *Orgeto-rix*, “*king who harms*”, Gaul. *Dumno-rix*, “*king of the world*”, Gaul. *Epo-pennus*, “*horse’s head*”, O.Ir. *Cin-néide* (Eng. *Kennedy*) “*ugly head*”, O.Ind.

Asva-ghosa, “tamer of horses”, O.Ind. *Asvā-medhas*, “who has done the horse sacrifice”, O.Pers. *Xša-yāršā* (Gk. *Xérxēs*) “ruler of heroes”, O.Pers. *Arta-xšacā*, “whose reign is through truth/law”, Gk. *Sō-krátēs*, “good ruler”, Gk. *Mene-ptólemos*, “who faces war”, Gk. *Hipp-archus*, “horse master”, Gk. *Cleo-patra*, *Pátro-klos*, “from famous lineage”, Gk. *Arkhé-laos*, “who governs the people”, O.Sla. *Bogu-milŭ*, “loved by god”, Sla. *Vladi-mir*, “peaceful ruler”, from *volodi-mirom*, “possess the world”; etc. Individual names may further be modified through the use of suffixes to form hypocorisms.

Other area in which it is suspected the retention of ancient Proto-Indo-European personal names is the use of animal names or numerals, composed of one stem; as **Wlqos**, *wolf*, cf. O.Ir. *Olc*, O.Eng. *Wulf*, Gk. *Lukos*, Skr. *Vṛka*; or, **Qétwrtos**, *fourth*, cf. Lat. *Quārta*, Lith. *Keturai*, Russ. *Četvertoj*, Gk. *Tetartíōn*.

NOTE. The word for ‘name’ and possible Indo-European names can be found in Beekes (1987), Markey (1981), Pinault (1982), Schmitt (1973), and Watkins (1970).

Further, the syntactical indication of the father’s name also dates from Proto-Indo-European, whether by adding the name of the father in the genitive, in the sense of ‘son of X’, or by adding a possessive adjective that is derived from the name of the father.

NOTE 1. An example of the former is *Hadubrand Heribrandes suno*; an example of the later is Myc. *a-re-ku-tu-ru-wo e-te-wo-ke-re-we-i-jo*, i.e. *Alektruwōn Etewoklewēhijos*, “Alektruwōn, son of Etewoklewēs”, or Russ. *Nikolaj Sergejevich*. Patronymics ending in *-ios* (later *-ius*) led to what is called the *nomine gentile* in Rome, cf. *Gaius Iulius Caesar* with *Gaius* = *praenomen* < individual name, *Iulius* = *nomen gentile* < patronymic and *Caesar* = *cognomen*.

When considering the giving of names to individuals, one departs generally from the basis of the free men.

NOTE. Whereas the man is addressed using the individual name, a simple ‘oh woman’ suffices in the case of woman. “The woman is treated more as a *typus*, the man as an individual”. Wackernagel (1969) makes clear that the same forms of address were adopted for interactions with the gods. To say that the Indo-Europeans were not very different from the Romans and Greeks would not likely be too far from the mark. In Rome, women generally carried only the *nomen gentile*, cf. *Cornelia*, *Julia*, etc. In the case of the Greeks, most names of women are simply feminine forms of masculine names of individuals, e.g. Myc. *a-re-ka-sa-da-ra*, i.e. *Aleksandrā* (corresponding to *Aleks-anōr*, “who fights off men”), Hom. *Andromákhē*, from *Andrómakhos*, “who fights with men”, etc. (Meier-Brügger 2003).

4. NOUNS

4.1. DECLENSION OF NOUNS

4.1.1. Declension is made by adding terminations to different stem endings, vowel or consonant. The various phonetic changes in the language have given rise to the different declensions. Most of the case-endings, as shown in this Modern Indo-European grammar, contain also the final letter of the stem.

Adjectives are generally declined like nouns, and are etymologically to be classed with them, but they have some peculiarities of inflection which will be later explained.

4.1.2. Nouns and adjectives are inflected in four regular Declensions, distinguished by their final phonemes – characteristic of the Stem –, and by the opposition of different forms in irregular nouns. They are numbered following Graeco-Latin tradition: First or a-Declension, Second or o-Declension, Third or i/u-Declension, Fourth or Consonant Declension, and the variable nouns.

NOTE. The *Second* or *o-Declension* is also the Thematic Declension, opposed to the rest – and probably older in the evolution of PIE nominal inflection –, which form together the Athematic Declension.

Decl.	Stem ending	Nominative	Genitive
1.	ā (ja/ī, ē, ō)	-Ø	-s
2.	e/o (Thematic)	m., f.-s, n.-m	-os, -osjo
3.	i, u and Diphthong	m., f.-s, n.-Ø	-eis, -eus; -jos, -wos
4.	Sonants & Consonants	-s, -Ø	-(e/o)s
(5)	Heteroclites	-Ø, -r	-(e)n

The Stem of a noun may be found, if a consonant stem, by omitting the case-ending; if a vowel stem, by substituting for the case-ending the characteristic vowel.

NOTE. Most Indo-Europeanists tend to distinguish at least two major types of declension for the oldest PIE, Thematic and Athematic. Thematic nominal stems are formed with a suffix -o- (in vocative -e), and the stem does not undergo *ablaut*. The Athematic stems are more archaic, and

they are classified further by their ablaut behaviour: *acro-dynamic*, *protero-dynamic*, *hystero-dynamic* and *holo-dynamic*, after the positioning of the early PIE accent in the paradigm. For more on this, see Beekes (1995) and Meier-Brügger (2003).

4.1.3. The following are General Rules of Declension:

a. The Nominative singular for animates ends in **-s** when the stem endings are **i**, **u**, **ī**, **ū**, Diphthong, Occlusive and Thematic (**-os**), or **-Ø** in **ā**, Sonant and **s**; while in the plural **-es** is general, **-s** for those in **ā**, and **-os** for the Thematic ones.

b. The Accusative singular of all masculines and feminines ends in **-m** or **-m̐** (after consonant), the Accusative plural in **-ns** or **-ns̐**.

c. The Vocative singular for animates is always **-Ø**, and in the plural it is identical to the Nominative.

d. The Genitive singular is common to animates and inanimates, it is formed with **-s**: **-s**, **-es**, **-os**. A very old alternative possibility is extended **-os-jo**. The Genitive plural is formed in **-ōm**, and in **-ām** in a-stems.

e. The Obliques singular end usually in **-i**: it can be **-i**, **-ei**, **-ēi**, **-oi**, **-ōi** or **-āi**, and their extensions. In the plural, there are two series of declensions, Instr. **-bhis/-mis** (from Sg. **-bhi**), Dat.-Abl. **-bhos/-mos** (PII **-bhjas**) as well as (BSI. and PII) Loc. in **-su**, Gk. **-si**.

NOTE. Meier-Brügger (2003) considers that “[e]vidence seems to indicate that while the dative and ablative plural were marked with ***-mos**, the instrumental plural was marked with ***-b^{hi}**” in PIH, and similarly Mallory & Adams (2006) differentiate for the oldest PIE declension a Dat. **-mus**, instrumental **-bhi**, and Abl. **-bh(j)os**. Comparison shows an Ins. Sg. **-bhi**, (cf. Gk. **-p^{hi}**, Myc **-pi**, and also Arm. Ins. **marb**), BSI. **-mi** (cf. Lith. **akmenimì**, O.C.S. **kamenimĩ**) and for North-West IE dialects a division between Italic+Celtic and Germanic+Balto-Slavic Plural forms: Celtic shows traces of an Instrumental **-bhis** (cf. O.Ir. Dat.-Loc.-Inst.-Abl. **cridib**, and in Graeco-Aryan O.Ind. **sūnúbhis**, Av. **bāzubīs**, Arm. **srtiwkh**), Italic and Celtic show a Dat.-Abl. **-bhos** (cf. Celtiberian Dat.-Loc.-Inst.-Abl. **arecoraticubos**, Lat. **matribus**, Osc. **luisarifs**), while Balto-Slavic shows Inst. **-mis** (cf. Lith. **sunumīs**, O.C.S. **synumĩ**), Dat.-Abl. **-mos** (cf. O.C.S. **synūmŭ**, Lith. **sūnūms**, **sūnūmus**), and Germanic shows a Dat.-Abl.-Inst. **-m-**. Also, Indo-Iranian **-bhjas** (<***-bhjos**), according to Meier-Brügger, “can thus be regarded as a cross between the instrumental ***-b^{hi}** and the dative/ablative ***-mos**”. Even if some might consider these data enough to draw conclusions about a well-differentiated common PIH plural declension system, we think it is more appropriate to maintain in MIE the (conservative) reconstructible North-West IE West/East dialectal

4. Nouns

differentiation, i.e. Dat.-Abl. **-bhos/-mos** (PII *-bhjas*), and Instr. **-bhis/-mis**, without using any of those *assimilation* theories proposed, as e.g. PIE Inst. *-m- → dialectal *-bh-.

f. Inanimates have a syncretic form for Nom.-Ac.-Voc. -Ø in Athematic, or **-m** in Thematic. The plural forms end in **-ā** in thematics and **-a** in athematics.

NOTE. About the nominative/accusative neuter plural, Meier-Brügger states: “in terms of content, the idea of a collective mass is certainly dominant. Therefore, the collective suffix (= athematic *-h₂- and thematic *-e-h₂-) is used, no ending (zero) added (...) The understanding of the neuter plural as collective explains the ancient IE characteristic, observable in isolated cases, of combination of the neuter plural and the singular of a verb (...)”.

g. All Animates have the same form in the plural for Nom.-Voc., in **-es**.

4.1.4. The so-called Oblique cases – opposed to the Straight ones, Nom.-Acc.-Voc –, are Genitive and the Obliques proper, i.e. Dative, Locative, Instrumental and Ablative. IE languages show an irregular Oblique declension system.

NOTE. Sanskrit or Avestan had 8 cases, Anatolian and Italic dialects show up to 8 (cf. Osc. Loc. *aasai* for Lat. ‘in ārā’, or Ins. *cadeis amnud* for Lat. ‘inimicitiae causae’, *preiuatud* for Lat. ‘prīuātō’, etc.), while Latin shows six and a semisystematic Locative notion; Balto-Slavic shows seven, Mycenaean at least six cases, while Koiné Greek and Proto-Germanic had five.

Nominal Desinences (Summary)

	<i>Singular</i>		<i>Plural</i>	
	<i>Animates</i>	<i>Inanimates</i>	<i>Animates</i>	<i>Inanimates</i>
NOM.	-s, -Ø	-m, -Ø	-es	-ẵ, -Ø
ACC.	-m		-ns	
VOC.	-e, -Ø		-es	
GEN.	-os, -osjo		-om	
DAT.	-ei		-bhos/-mos	
LOC.	-i		-su	
INS.	-ē, -bhi		-eis; -bhis/-mis	
ABL.	-ed, -os		-bhos/-mos, -om	

4.2. FIRST DECLENSION

4.2.1. FIRST DECLENSION PARADIGM

1. They are usually Animate nouns and end in **ā** (or **jā**), and rarely in **ja/ī**, **ē**, and **ō**. Those in **ā** are very common, generally feminine in nouns and always in adjectives, and they are used to make feminines in the adjectival Motion. Those in **ja/ī** are rare, generally feminine, and etymologically identical to the Neuter plural in Nom.-Acc.-Voc. Those in **ō** and **ē** are feminine only in lesser used words.

NOTE. The entire stem could have been reduced to MIE **a** (hence a-Declension), because this is the origin of the whole PIE stem system in PIH, the ending **(e)h₂*. See §3.7.3.

2. MIE First Declension corresponds loosely to the Latin First Declension (cf. Lat. *rosa*, *rosae*, or *puella*, *puellae*), and to the Ancient Greek Alpha Declension (cf. Gk. *χώρα*, *χώρας*, or *τῆμῆ*, *τῆμῆς*).

a-Declension Paradigm

	<i>Animate</i>	<i>Inanimate</i>
NOM.	<i>-Ø</i>	<i>-Ø</i>
ACC.	<i>-m</i>	
VOC.	<i>-Ø</i>	
GEN.	<i>-s</i>	
DAT.	<i>-i</i>	
LOC.	<i>-i</i>	
INS.	<i>-Ø, -bhi/-mi</i>	
ABL.	<i>-d, (-s)</i>	

NOTE. This declension in **ā**, older **-eh₂*, is usually reconstructed in the Singular as from older PIH Nom.-Vocc. **-eh₂*, Acc. **-eh₂m*, Gen. (-Abl.) **-eh₂os*, Dat. **-eh₂ei*, Loc. **-eh₂i*, Ins. **-eh₂eh₁* or **-eh₂bhi*, Abl. **-eh₂ed*; as, Dat. **h₁ekweh₂ei* → **ekwāi**.

3. It is therefore identical to those nouns in **r**, **n**, **s** of the Fourth Declension, but for some details in vocalism: the Gen. has an **-s** and not **-es/-os**; the difference between Nom. and Voc. is that of **-ā** and **-a**. The zero-grade of the Nom.-Acc.-Voc. in **ja/ī** stems is different from the Gen. in **-jā**.

4.2.2. FIRST DECLENSION IN EXAMPLES

1. Nominative Singular in $-\emptyset$; as, **ekwā**, *mare*, **deiwā**, *goddess*, **patrjā**, *fatherland*, adj. **cowijǎ**, *bovine*.

Examples of **ja/ī** include **potnja/potnī**, *lady, mistress*, **djewja/djewī**, *(sky) goddess*.

NOTE. Even though **ja/ī** was known to Late PIE speakers, those are rarely seen in North-West IE, and consequently they are usually MIE **-jā**; as, MIE **potnjā**.

Those in **ē**, **ō**, also rare, make the Nominative in **-s**; as, **bhidhēs**, from Lat. *fides* (but cf. O.Lat. *fidis*), *trust*, **spekjēs**, *species*, etc.

2. Accusative Singular in **-m**; as, **ekwām**, **patrjām**, **potnjam/potnīm**, **spekjēm**.

3. Vocative Singular in $-\emptyset$. It is normally identical to the Nominative, but disambiguation could happen with distinct vowel grades, i.e. Nom. in **-ā**, Voc. in **-a**.

4. Genitive Singular in **-s**; as, **ekwās**, **patrjās**, **spekjēs**.

The theme in **ja/ī** produces a Genitive Singular in **-ās**; as, **potnjās**.

5. Dative-Ablative Singular in **-āi**, **ekwāi**, **patrjāi**.

NOTE. It comes probably from an older PIE general Dat. ***-ei** ending; as, ***h₁ekweh₂-ei** → **ekwāi**.

There is also a form **-ei** for themes in **ē** and in **ja/ī**.

6. Locative in **-āi**; as, **ekwāi**, **patrjāi**.

7. Instrumental in $-\emptyset$, **-ā-bhi/ -ā-mi**; as, **ékwābhi**, **pátrjāmi**.

	<i>f. ekwā</i>	<i>adj. f. cowijǎ</i>	<i>f. potnja/potnī</i>	<i>f. spekjē-</i>
NOM.	ekwā	cowijǎ	potnja/potnī	spekjēs
ACC.	ekwām	cowijām	potnjam/potnīm	spekjēm
VOC.	ekwǎ	cowijǎ	potnja/potnī	spekjē
GEN.	ekwās	cowijās	potnjās	spekjēs
DAT.	ekwāi	cowijāi	potnjāi	spekjei
LOC.	ekwāi	cowijāi	potnjāi	spekjei
INS.	ékwābhi	cowijábhi	potnjā	spekjē
ABL.	ekwād	cowijád	potnjās	spekjēd

4.2.3. THE PLURAL IN THE FIRST DECLENSION

1. The following table presents the plural paradigm of the *a*-Declension.

NOM.	-s
ACC.	-ns
VOC.	-s
GEN.	-m
DAT.-ABL.	-bhos/-mos
LOC.	-su
INS.	-bhis/-mis

NOTE. The Plural is reconstructed as from PIH Nom.-Vocc. **-eh₂s*, Acc. **-eh₂ns* (<**-eh₂-m-s*), Gen.(-Abl.) **-eh₂om*, Dat.-Abl. **-eh₂bh(j)os*, Loc. **-eh₂su*, Ins. **-eh₂bhis*; as, **h₁ekweh₂es* → **ekwās**.

2. The Nominative-Vocative Plural in **-s**: **ekwās**, **patrjās**, **cowijās**.

3. The Accusative Plural in **-ms**: **ekwāns**, **patrjāns**.

4. The Genitive Plural in **-m**: **ekwām**, **patrjām**.

5. The Dative and Ablative Plural in **-bhos**, **-mos**, and **-bhjos**; as, **ékwābhos**, **ékwāmos**.

6. The Locative Plural in **-su** (also PGk *-sī*); as, **ékwāsu**, **pátrjāsu**.

6. The Instrumental Plural in **-bhis**, **-mis**; as, **ékwābhis**, **ékwāmis**.

NOTE. The Obliques have also special forms Gk. *-āisi*, *-ais*, Lat. *-ais*; as, Lat. *rosīs* < **rosais*.

	<i>f. ekwā</i>	<i>f. cowijā</i>	<i>f. potnja</i>
NOM.	ekwās	cowijās	potnjas/potnīs
ACC.	ekwāns	cowijāns	potnjans/potnīns
VOC.	ekwās	cowijās	potnjas/potnīs
GEN.	ekwām	cowijām	potnjām
DAT.	ékwābhos	cowijāmos	pótnjabhjos
LOC.	ékwāsu	cowijāsu	pótnjasu
INS.	ékwābhis	cowijāmis	pótnjabhis
ABL.	ékwābhos	cowijāmos	pótnjabhjos

4.3. SECOND DECLENSION

4.3.1. SECOND DECLENSION PARADIGM

1. The Stem of nouns of the Second Declension ends in **e/o**, and they are usually called *Thematic*. They can be animates and inanimates, as well as adjectives. The inanimates have an ending **-m** only in Nom.-Acc.-Voc. The animates, with a Nominative in **-s**, are generally masculine in nouns and adjectives, but there are also feminine nouns and animate adjectives in **-os**, probably remains of the old indistinctness of declension.

NOTE. The o-Declension is probably very recent in PIE – even though it happened already in PIH, before the Proto-Anatolian split – and that’s why it is homogeneous in most IE dialects. As Mallory & Adams (2006) say, “[t]he o-stems were the most productive form of declension. By this is meant that through time, especially at the end of the Proto-Indo-European period and into the early histories of the individual Indo-European languages, the o-stems appeared to proliferate and replace other stem types. In Vedic Sanskrit, for example, they constitute more than half of all nouns. High productivity is often interpreted as evidence that the o-stems are a later declensional form than many of the other stems. Highly productive forms are ultimately capable of replacing many other forms as they provide the most active model by which speakers might decline a form”.

2. MIE Second Declension is equivalent to the Second Declension in Latin (cf. Lat. *dominus*, *dominī*, or *uinum*, *uinī*), and to the Omicron Declension in Greek (cf. Gk. λόγος, λόγου, or δῶρον, δῶρου).

o-Declension Paradigm

	<i>Animate</i>	<i>Inanimate</i>
NOM.	<i>-os</i>	<i>-om</i>
ACC.	<i>-om</i>	
VOC.	<i>-e</i>	
GEN.	<i>-os, -osjo</i>	
DAT.	<i>-ōi</i>	
LOC.	<i>-oi</i>	
INS.	<i>-ō</i>	
ABL.	<i>-ōd</i>	

NOTE 1. This model could have been written without the initial vowel **-o-**, because the probable origin of this vowel is the ending vowel of some thematic stems, while other, primitive athematic stems were reinterpreted, and an **-o-** was added to their stems by way of analogy. So, this paradigm could be read Nom. **-s**, Acc. **-m**, Gen. **-s**, **-sjo**, **-so**, and so on.

NOTE 2. The thematic declension is usually reconstructed in the Singular as from older PIH Nom. ***-os**, Voc. ***-e**, Acc. ***-om** (neu. Nom.-Voc.-Acc. ***-om**), Gen. ***-os**, Dat. ***-ōi** (<***-o-ei**), Loc. ***-oi**, Ins. ***-oh₁**, Abl. ***-ōd** (<**-o-ed**); as, Dat. ***w₁lk^{wo}-ei** → **w₁lqōi**, Abl. ***w₁lk^{wo}-ed** → **w₁lqōd**.

4.3.2. SECOND DECLENSION IN EXAMPLES

1. Nominative Singular Animate in **-os**; as in **w₁lqos**, *wolf*, **dómūnos**, *lord*, **wīrós**, *man*, adj. **cīwós**, *alive*.

2. Accusative Singular Animate in **-om**; as in **w₁lqom**, **dómūnom**, **cīwóm**.

3. Vocative Singular Animate in **-e**; as in **w₁lqe**, **dómūne**, **cīwé**.

5. The Nom.-Acc.-Voc. Sg. Inanimate in **-om**; as in **jugóm**, *yoke*, adj. **newom**, *new*.

4. Genitive Singular in **-os**, **-osjo**, also **-e/oso**, **-ī**; as in **w₁lqosjo**, **jugós**, **dómūnī**.

NOTE. The original Genitive form **-os** is rare, as the Genitive had to be distinguished from the Nominative. This disambiguation happens by alternatively lengthening the ending, as **-os-jo** (or **e/os-o**) or changing it altogether, as in **-ī**.

6. Dative Singular in **-ōi**: **w₁lqōi**, **dómūnōi**, **newōi**, **jugói**.

7. Locative Singular in **-oi**: **w₁lqoi**, **dómūnoi**, **newoi**, **jugói**.

8. Instrumental Singular in **-ō**: **w₁lqō**, **dómūnō**, **newō**, **jugó**.

9. The Ablative Singular is formed in **-ōd**: **w₁lqōd**, **cīwód**, **jugód**.

	<i>m. w₁lqo-</i>	<i>n. jugó-</i>
NOM.	w₁lqos	jugóm
ACC.	w₁lqom	jugóm
VOC.	w₁lqe	jugom
GEN.	w₁lqosjo	jugós
DAT.	w₁lqōi	jugói
LOC.	w₁lqoi	jugói
INS.	w₁lqō	jugó
ABL.	w₁lqōd	jugód

4.5.3. THE PLURAL IN THE SECOND DECLENSION

1. The Thematic Plural system is usually depicted as follows:

	<i>Animate</i>	<i>Inanimate</i>
NOM.	<i>-ōs, (-oi)</i>	<i>-ā</i>
ACC.	<i>-ons</i>	
VOC.	<i>-ōs, (-oi)</i>	
GEN.	<i>-ōm</i>	
DAT.-ABL.	<i>-obhos/-omos</i>	
LOC.	<i>-oīsu</i>	
INS.	<i>-ōis</i>	

NOTE. The Animate Plural is reconstructed as PIH Nom.-Voc. *-ōs (<*-o-es), Acc. *-ons (<*-o-m-s), Gen.(-Abl.) *-ōm (<*-o-om), Dat.-Abl. *-o(i)bh(j)os/-omos, Loc. *-oīsu (<*-o-eis-su), Ins. *-ōīs (<*-o-eis); as, *włkwo-es → **włqōs**. Inanimates have a Nom.-Voc.-Acc in *-oh₂ (or *-eh₂) evolved as **-ā** in most dialects. A Nom.-Voc. (pronominal) ending **-oi** is also found.

2. The Nominative-Vocative Animate Plural in **-ōs**; as, **włqōs**, **dómūnōs**, **wīrōs**.

3. The Accusative Animate Plural in **-ons**; as, **włqons**, **dómūnons**, **cīwóns**.

4. The Nom.-Voc.-Acc. Inanimate Plural usually in **-ā**; as, **jugá**, **cīwá**.

5. The Genitive Plural in **-ōm**; as, **włqōm**, **dómūnōm**, **cīwōm**, **jugóm**.

6. For the Obliques Plural, Dat.-Abl. **włqomos**, Loc. **wīrōīsu**, Ins. **jugóīs**.

	<i>m. włqo-</i>	<i>n. jugo-</i>
NOM.	włqōs	jugá
ACC.	włqōms	jugá
VOC.	włqōs	jugá
GEN.	włqōm	jugóm
DAT.	włqobhos	jugómos
LOC.	włqōīsu	jugóīsu
INS.	włqōīs	jugóīs
ABL.	włqobhos	jugómos

4.4. THIRD DECLENSION

4.4.1. THIRD DECLENSION PARADIGM

1. Third Declension nouns end in **i**, **u** (also **ī**, **ū**) and Diphthong.
2. This declension usually corresponds to Latin nouns of the Third Declension in *-i* (cf. Lat. *ciuis*, *ciuis*, or *pars*, *partis*), and of the Fourth Declension in *-u* (cf. Lat. *cornū*, *cornūs*, or *portus*, *portūs*).

i/u-Declension Paradigm

	<i>Animate</i>	<i>Inanimate</i>
NOM.	<i>-s</i>	<i>-∅</i>
ACC.	<i>-m</i>	
VOC.	<i>-∅</i>	
GEN.-ABL.	<i>-s</i>	
DAT.	<i>-ei</i>	
LOC.	<i>-∅, -i</i>	
INS.	<i>-ī/-ū, -ē, (-bhi/-mi)</i>	

NOTE 1. The so-called *common*, *basic* or *athematic* paradigm, the hypothetically oldest attainable PIE noun declension system, is reconstructed in the Singular as Nom. **-∅*, **-s*, Acc. **-m*, Voc. **-∅*, Gen.(-Abl.) **-(é/o)s*, Dat. **-ei*, Loc. **-∅, *-i*, Ins. **-(é)h₁*, Abl. **-(e)d*. This was a paradigm common to the i/u and Consonant declension (*v.l.*), and it was probably inherited (and innovated) by the first and second declensions.

NOTE 2. Reduplication or combination with the alternating endings ***-i***, ***-ei/-oi*** and ***-u***, ***-eu/-ou***, was a common resort in the attested dialects that distinguished Dat. and Loc. in this declension, as in ***-i-ei***, ***-ei-ei***, ***-eu-ei***, and so on, to differentiate similar forms.

3. The animates in **i** and **u** are masculine or feminine (indifferent to the distinction in adjectives); those in **ī** and **ū**, always feminine.

4. The **-s** can indicate Nominative and Genitive: the distinction is made through the full-grade of the vowel before the declension, i.e. Type I (older) Gen. ***-ei-s*** (or ***oi-s***) for **i**, ***-eu-s*** (or ***ou-s***) for **u**; Type II (newer) in ***-(e)i-os***, ***-(e)u-os***.

NOTE. The Vocative of the animates is the same as the Nom.-Acc.-Voc. of the inanimates.

4.4.2. IN I, U

1. Nominative Singular Animate in **-s**; as in **owis**, *sheep*, **noqtis**, *night*, **ghostis**, *guest*, **sūnús**, *son*, **egnis**, *fire*, **pṛtus**, *ford*, **swēdhus**, *custom*; adj. **swādu**, *pleasant*.

2. Accusative Singular Animate in **-m**; as in **owim**, **noqtim**, **ghostim**, **sūnúm**.

3. Vocative Singular Animate in **-Ø**, or full **-ei**, **-eu**; **owi**, **sūnéu**/**sūneu**, **swēdhu**.

NOTE. Full vocalism helps differentiate animates (in **-ei**, **-eu**) from inanimates (in **-i**, **-u**).

4. The Nom.-Acc.-Voc. Singular Inanimate in **-Ø**; as in **mari**, *sea*, **kṛdi**, *heart*, **peku**, *cattle*, **deru**, *wood*, **medhu**, *mead*, adj. **swādu**.

5. Type I Genitive Singular in **-eis**, **-eus**, also **-ois**, **-ous**; as, **ghosteis**, **mareis**, **sūnéus**, **swēdheus**, adj. **swādeus**.

Type II in **-(e)jos**, **-(e)wos**; as, **owjos**, **noqtjos**, **kṛdejós**, **swēdhewos**, **pékewos**.

NOTE. Some **-ei**-, **-eu**- genitives were remade into the newer **-(e)jo**-, **-(e)wo**-; as, old **dreus**, **pṛtéus**, **owéis**, **egnéis**, **pekéus**, into MIE **dérewos**, **pṛtwos**, **owjos**, **egnjjos**, **pékewos**.

6. Dat. Sg. in **-ei**, usually full **-ei-ei**, **-eu-ei**; as, **ghóstejei**, **pékewei**.

NOTE. For a Dat. Sg. in **-ei**, pure stem or full ending plus **-i**, cf. Gk. *-sei* (<*-t-ej-i?), O.C.S. *kosti*.

7. Loc. Sg. in **-ei**, **-eu**, usually lengthened **-ēi**, **-ēu**, **-ewi**; as, **noqtēi**, **sunēu**.

8. Ins. **-ī**, **-ū** (<*-h_i), in **-ē** (<*-eh_i) following the Gen., or **-bhi**/**-mī**: **pṛtū**, **pṛtwē**.

NOTE. The Obliques show weak stems (root ablaut and accent shift) in old root nouns, *v.i.*

	Type I			Type II		
	<i>f. ghosti-</i>	<i>m. sūnu-</i>	<i>n. mari-</i>	<i>f. noqti-</i>	<i>m. pṛtu-</i>	<i>n. peku-</i>
NOM.	ghostis	sūnús	mari	noqtis	pṛtus	peku
ACC.	ghostim	sūnúm	mari	noqtim	pṛtum	peku
VOC.	ghosti	sūnéu	mari	noqtei	pṛtu	peku
GEN.	ghosteis	sūnéus	mareis	noqtjos	pṛtwos	pékewos
DAT.	ghóstejei	sūnéwei	márejei	nóqtejei	pṛtewei	pékewei
LOC.	ghostēi	sūnéu	marēi	noqtēi	pṛtēu	pékewi
INS.	ghostī	sūnewē	marī	noqtī	pṛtwē	pekū
ABL.	ghosteis	sūnéus	mareis	noqtjos	pṛtwos	pékewos

THE STRONG TYPE

Its inflection is similar to the consonant stems, and they have no alternating vowels before the declension; *ī* and *ū* are substituted before vowel by *-ij*, *-uw*. They are always feminine, and they cannot be inanimates nor adjectives. They are mostly PIE roots (in **-iH*, **-uH*), and found mainly in Indo-Iranian.

	<i>f. bhrū-</i>	<i>f. sū-</i>	<i>f. dhī-</i>	<i>f. wḷqī-</i>
NOM.	bhrūs	sūs	dhīs	wḷqīs
ACC.	bhrūm	sūm	dhīm	wḷqīm
VOC.	bhrū	sū	dhī	wḷqī
GEN.	bhruwós	suwós	dhijós	wḷqijós
DAT.	bhruwéi	suwéi	dhijéi	wḷqijéi
LOC.	bhruwí	suwí	dhijí	wḷqijí
INS.	bhrūbhí	sūbhí	dhībhí	wḷqībhí
ABL.	bhruwós	suwós	dhijós	wḷqijós

4.4.3. IN DIPHTHONG

1. There are long diphthongs *āu*, *ēu*, *ōu*, *ēi*, which sometimes present short vowels.

NOTE. Other endings that follow this declension, as *ā*, *ē*, *ō* are probably remains of older diphthongs. Therefore, these can all be classified as Diphthong endings, because the original stems were formed as diphthongs in the language history.

	<i>cōu-</i>	<i>m. djēu-</i>	<i>f. nāu-</i>
NOM.	cōus	djēus	nāus
ACC.	cōm	djēm/dijém	nāum
VOC.	cou	djeu	nau
GEN.	cous	diwós	nawós
DAT.	cowéi	diwéi	nawéi
LOC.	cowí	djewi/diwí	nawí
INS.	coū	djeū	naū
ABL.	cous	diwós	nawós

In zero grade Genitives there are forms with **-i-** or **-ij-** or **-u-** or **-uw-**, depending on the diphthongs.

NOTE 1. Some secondary formations – especially found in Greek – are so declined, in **-eus**, **-euos** as in Av. *bāzāus*, Arm., Gk. *Basileus*, possibly from PIE **-āus** (Perpillou, 1973) but Beekes (2007) considers it Pre-Greek.

NOTE 2. Stang's law governs the word-final sequences of a vowel + semivowel **j** or **w** + nasal, simplified in PIE so that semivowels are dropped, with compensatory lengthening of a preceding vowel, i.e. *VwM*, *VjM* → **V:M**; as, ***djēm***, not **djewm*; ***cōm***, not **g^wowm*, ***cōns***, not **g^wown̥s*, etc. A similar trend is found with laryngeals, **Vh₂m* > **V:M**; as, ***sūm***, also attested as ***suwm̥***, etc.

4.4.4. THE PLURAL IN THE THIRD DECLENSION

1. The following table depicts the general plural system, common to the Fourth Declension.

	<i>Animate</i>	<i>Inanimate</i>
NOM.	-es	-a
ACC.	-ns	
VOC.	-es	
GEN.	-om	
DAT.-ABL.	-bhos/-mos	
LOC.	-su	
INS.	-bhis/-mis	

NOTE. A general Accusative Plural ending **-ns** (**-ñs** after consonant) is usually reconstructed for Late PIE, because e.g. with the **-u-** stem PIE **-u-ns*, descendants in early IE languages show **-uns*, **-ūns*, **-ūs*; cf. Goth. *sununs*, O.Ind. *sūnūn*, Gk. *vívυς*, Lith. *sūnus*, O.C.S. *syny*, Lat. *manūs*. See H. Rix (FS Risch 1986 p. 586-590). Most scholars also posit an original, older **-ms* form (a logical accusative singular **-m-** plus the plural mark **-s**), but they usually prefer to reconstruct the attested **-ns**, thus (implicitly) suggesting an intermediate phase common to all proto-languages in a Late PIE stage, i.e. PIH **-ms* → Late PIE **-ns*. For a PIH **-ms*, cf. maybe Hitt. *-uš* (Ottinger 1979), but Lyc *-s* (<**-ns*?). To be consistent with decisions taken elsewhere in this grammar (as e.g. reconstructed PIE **-TT-** as MIE intermediate **-sT-**, see §2.8.5), the intermediate, attested **-ns** is the conservative choice, whereas **-ms* is just a quite certain hypothesis about its origin.

2. Unlike in the Singular, in which only some Nominatives have an **-s**, in Nom.-Voc. Plural the **-s** is general, and there is always one fix-grade vowel, **e**. So, the opposition Singular-Plural in **-s/-es** is actually \emptyset/e .

3. The Nom.-Voc. Plural Animate is made in **-es**, in full-grade **-ei-es** for **i**, **-eu-es** for **u**, and **-ijes**, **-uwes**, for **ī**, **ū**; as **ówējes**, **sūnewes**, **pṛtewes**, **bhruwes**.

4. The Accusative Plural Animate is in **-ns**: **owins**, **sūnúns**, **pṛtuns**, **cōns**.

5. Nom.-Voc. Acc. Plural Inanimate in **-a**: **pekwa**, **marja**, **swādwá**.

NOTE. The Athematic inanimate plural ending commonly represented by **-a** corresponds to an older collective **-h₂*, which sometimes lengthened the preceding vowel (**i** or **u**) instead; as, for Nom.-Acc.-Voc. Pl. **triH*, *three*, cf. Skr. *trī*, Lat. *trī*, Ir. *trī*, but Gk. *tría*; see §3.7.3.

6. Gen. Pl. in **-om** (Type I usually in full **-ei-om**, **-eu-om**); as, **ghóstejom**, **pṛtwom**.

NOTE. The **-m** of the Acc. sg. Animate, Nom.-Acc.-Voc. sg. Inanimate and this case could sometimes be confused. It was often disambiguated with the vocalic grade of the Genitive, full or lengthened, as the singular is always \emptyset .

7. For the Obliques Plural, cf. Dat.-Abl. **ówibhos**, **sūnumos**, **nóqtimos**; Loc. **sūnusu**, **nóqtisu**, Ins. **sūnubhis**, **ówimis**, **máribhis**.

NOTE. In the plural, as in the singular, the Genitive and the Obliques are made with the weak form (vowel change and accent shift), if it hadn't been replaced. This rule, common to the fourth declension, affects the oldest nouns; as, Nom. **owis**, Gen. **oweis**, but remade Nom. **owis**, Gen. **owjos**; old **pertus**, **pṛteus**, but remade **pṛtus**, **pṛtwos**; n. **kerd**, **kṛdés**, new **kṛdi**, **kṛdejós**.

	Type I		Type II		Diphth.
	<i>f. owi-</i>	<i>m. sūnu-</i>	<i>f. noqti-</i>	<i>n. peku-</i>	<i>m. cou-</i>
NOM.	ghóstejes	sūnewes	nóqtejes	pekwa	cowes
ACC.	ghostins	sūnúns	noqtins	pekwa	cōns
VOC.	ghóstejes	sūnewes	nóqtejes	pekwa	cowes
GEN.	ghóstejom	sūnewom	noqtjom	pékwom	cowom
DAT.	ghóstibhos	sūnumos	nóqtibhos	pékumos	coubhos
LOC.	ghóstisu	sūnusu	nóqtisu	pékusu	cousu
INS.	ghóstibhis	sūnumis	nóqtibhis	pékumis	coubhis
ABL.	ghóstibhos	sūnumos	nóqtibhos	pékumos	coubhos

4.5. FOURTH DECLENSION

4.5.1. FOURTH DECLENSION PARADIGM

1. The Stem of Nouns of the Second Declension ends in Consonant or Sonant, i.e. **-n**, **-r**, **-s**, Occlusive (especially **-t**), and rarely **-l**, **-m**. The inflection of animates is essentially the same as that of the Second or Thematic Declension.

2. Nouns of the Fourth Declension in MIE correspond to Latin nouns of First Declension in **-r** (cf. Lat. *magister*, *magistrī*), and Third Declension in consonant (cf. Lat. *prīnceps*, *prīncipis*, *phoenīx*, *phoenīcis*, *cōnāmen*, *cōnāminis*, etc.), and to the Ancient Greek Labial and Velar declension (cf. Gk. Ἄραψ, Ἄραβος, or Φρύξ, Φρυγός).

The Nominative ending is **-s** (with Occlusive, **-m**, **-l**), but there is also a Nominative Sg. with pure stem vowel (desinence **-Ø** and lengthened ending vowel), so that the full-grade Vocative is differentiated. And there is no confusion in Nom./Gen., as **-s** has a different vowel grade (Nom. **-s**, Gen. **-és** or **-os**).

Consonant-Declension Paradigm

	<i>Occlusive, -m, -l</i>	<i>-r, -n, -s</i>
NOM.	<i>-s</i>	<i>-Ø (long vowel)</i>
ACC.	<i>-ṁ</i>	
VOC.	<i>-Ø</i>	<i>-Ø (full grade)</i>
GEN.-ABL.	<i>-os</i>	
DAT.	<i>-ei</i>	
LOC.	<i>-i, -Ø</i>	
INS.	<i>-ē, -bhi/-mi</i>	

NOTE. Beside the usual Loc. ending **-i** there was also the bare stem without ending. Such unmarked ('flat') locatives are widely encountered in modern languages (cf. Eng. *next door*, *home*), and in PIE they are well-attested in n-stems, but are rare in other consonant stems.

3. Inanimates have pure vowel stems with different vowel grades. In nouns there should be no confusion at all, as they are different words, but neuter adjectives could be mistaken in Nominative or Vocative Animate. Distinction is thus obtained with vocalism, as in Animate **-ōn** vs. Inanimate **-on**, Animate **-ēs** vs. Inanimate **-es** (neuter nouns in **-s** are in **-os**).

4.5.2. IN OCCLUSIVE, M, L

1. Nominative Sg. Animate in **-s**; as, **Pods**, *foot*, **regs**, *king*, **preks**, *plea*, **bhurghs**, *watch-tower*, adj. **bélowents**, *strong*.

NOTE. The Nom. of some stems are often reconstructed in long vowel; as, **pōds**, **rēgs**, **prēks**. Such forms were probably levelled due to the loss of the Nom. ending **-s** in some dialects, v.i.

2. Accusative Singular Animate in **-ṁ**; as, **podṁ**, **regṁ**, **bhurghṁ**, **bélowentṁ**.

NOTE. Forms in **m** make the accusative by lengthening the root vowel, *Vmm > *V:m, as a consequence of Stang's Law (v.s.); as, Nom. **doms**, *house*, Acc. **dōm** (<*dom-ṁ), cf. Arm. *tun* or Gk. *δῶ*, or Nom. **dhghōm**, *earth*, Acc. **dhghōm** (<*dhghom-ṁ), cf. Skr. *kṣām*. Root nouns like these ones are quite old in the language history, and are therefore rare in Late PIE dialects, which had usually replaced them by newer derived nouns; as, MIE **domos**, *house*, or **dhghmós**, *earth*.

3. Vocative Singular Animate in **-Ø**; a sin **pod**, **reg**, **bhurgh**, **bélowent**.

4. The Nom.-Acc.-Voc. Singular Inanimate in **-Ø**; as **somṁt**, *body*, or adj. **bheront**.

5. Genitive Singular in **-os**; as, **pedos**, **rēgos**, **bhurghos**, **bélowentos**, **bhérontos**.

NOTE. Older root nouns made the Genitive-Ablative often in **-s**, **-és**, i.e. Ablaut and Accent on stem vowel; as, for strong Nom. **doms**, weak Gen. **dems** or **dmés**, for strong Nom. **dhghōm**, Gen. **dhghmés** or (probably already in Late PIE) metathesized **ghdhmés**. They appear in Late PIE dialects mainly frozen in compounds; as, **dems** in **demspots** (v.s.), because most of them were reinterpreted; as, Nom. **Pods**, Gen. **pedés**, into a newer paradigm **Pods**, **pedos**.

6. Dative Singular in **-ei**; **pedei**, **rēgei**, **bhurghei**, **bhérontei**.

7. Locative Singular in **-i**; **pedi**, **rēgi**, **bhurghi**, **bélowenti**.

	<i>m. pod-</i>	<i>f. prek-</i>	<i>f. bhurgh-</i>	<i>n. bheront-</i>
NOM.	Pods	preks	bhurghs	bheront
ACC.	podṁ	prekṁ	bhurghṁ	bheront
VOC.	pod	prek	bhurgh	bheront
GEN.	pedos	prēkos	bhurghos	bherontos
DAT.	pedei	prēkei	bhurghei	bherontei
LOC.	pedi	prēki	bhurghi	bheronti
INS.	pedmi	prēkbhi	bhurghmi	bherontbhi
ABL.	pedos	prēkos	bhurghos	bherontos

4.5.3. IN R, N, S

1. Nominative Singular Animate in $-\emptyset$ with lengthened vowel; as in **mātér** (also **mátēr**), *mother*, **elōr**, *swan*, **kwōn**, *dog*, **Osēn**, *autumn*, adj. **juwōn**, *young*.

NOTE. For those in **n**, a Nom. without **-n** is alternatively reconstructed; as, **kwō** (cf. Skr. *śvā*).

Stems in **s** don't show a systematic vowel lengthening; as, **opos**, *work*, **nebhos**, *cloud*, **ōs**, *mouth*, **mōs**, *character*, **spes**, *hope*, etc. Adjectives usually end in **-es**; as, **sugenés**, *well-born, of good stock* (cf. Gk. *eugenés*, O.Ind. *sujanāḥ*).

2. Accusative Sg. Animate in **-m**; as in **māterm**, **élorm**, **kwonm**, **júwonm**, **óposm**.

3. Voc. Sg. An. in $-\emptyset$ with full vowel; as **mátér**, **élor**, **kúon**, **juwon**, **opos**, **sugenés**.

4. The Nom.-Acc.-Voc. Singular Inanimate in $-\emptyset$; as in **nōm**, *name*, **genos**, *kin*.

The adjectives in **-s** have a neuter in **-es**; as, **sugenés**.

5. Genitive Singular in **-os**, usually with an **e**, not an **o**, as the final stem vowel; as, **éleros**, **nomenos**, **bhugenos**, **júwenos**, **nébheses**, **géneses**, **ópesos**, **ēsos**, **spēsos**; but cf. zero-grade in old stems, as **mātrós**, **kunos**, and also **o**, as **mosós**.

NOTE. Old root nouns made the Genitive in **-és**, with Ablaut and Accent shift; as, **kunés**. For **mātér**, **patér**, **bhrātér**, apart from standard Gen. **mātrós**, **patrós**, **bhrātros**, older Gen. **-és**), alternative **mātr̥s**, **patr̥s**, **bhrāt̥s**, existed in PIE; as, O.Ind. *mātúr*.

6. Dative Singular in **-ei**, **mātréi**, **élerei**, **kunei**, **júwenei**, **ópesei**, **sugenesei**.

7. Locative Singular in **-i**: **mātrí**, **éleri**, **kuni**, **júweni**, **ópesi**, **sugenesi**.

8. Instrumental Singular in **-ē** or **-bhi/-mī**: **mātr̥mī**, **élerbhi**, **patrē**, **kunmī**, **júwenbhi**, **ópesbhi**, **sugenesbhi**.

	<i>m. kwon-</i>	<i>f. pater-</i>	<i>n. genes-</i>	<i>n. nom̥-</i>	<i>adj. sugenes-</i>
NOM.	kwōn	patér	genōs	nōm̥	sugenés
ACC.	kwonm̥	paterm̥	genōs	nōm̥	sugenesm̥
VOC.	kwon	patér	genōs	nōm̥	sugenés
GEN.	kunos	patrós	génesos	nómenos	sugeneses
DAT.	kunei	patr̥éi	génesei	nómenei	sugenesei
LOC.	kuni	patr̥í	génesi	nómeni	sugenesi
INS.	kunmī	patr̥bhí	génesmī	nómenbhi	sugenesmī
ABL.	kunos	patrós	génesos	nómenos	sugeneses

4.5.4. THE PLURAL IN THE FOURTH DECLENSION

With a paradigm common to the Third Declension, here are some inflected examples.

	<i>m. pod-</i>	<i>f. prek-</i>	<i>m. kwon-</i>	<i>f. māter-</i>	<i>n. genes-</i>
NOM.	podes	prekes	kwones	māteres	génesa
ACC.	podṇs	prekṇs	kwonṇs	māternṇs	génesa
VOC.	podes	prekes	kwones	māteres	génesa
GEN.	pedom	prēkom	kunom	mātróm	génesosm
DAT.	pedmos	prēkbhos	kunmos	mātrbhós	géneshbos
LOC.	pedsu	prēksu	kunsu	mātrṣú	génesu
INS.	pedmi	prēkmi	kunmi	mātrbhís	géneshbhis
ABL.	pedmos	prēkmos	kunmos	mātrbhós	géneshbos

4.6. VARIABLE NOUNS

4.6.1. Many nouns vary in Declension, and they are called *Heteroclites*.

4.6.2. Heteroclitc forms are isolated and archaic, given only in Inanimates, as remains of an older system, well attested in Anatolian.

4.6.3. They consist of one form to mark the Nom.-Acc.-Voc, and another for the Obliques, usually **r/(e)n**; as, **ghēsṛ/ghésenos**, *hand*, **gutṛ/gútenos**, *throat*, **kowṛ/kówenos**, *cavern*, **ūdhr/ūdhenos**, *udder*, **bhemṛ/bhémenos**, *thigh*, **wedhr/wédhenos**, *weapon*, **gutṛ/gútenos**, *throat*, **kowṛ/kówenos**, *cavern*, etc.

4.6.4. Different paradigms are also attested:

- Opposition **r/(e)n**- (lengthened); as, **jeqr/jeqóneros**, *liver*,

NOTE. For PIE **jeqr**, cf. Ved. *yákṛt*, Gk. *hēpar*, Lat. *iecur*, Av. *yākarə*, and compare its Obl. Skr. *yakn-ās*, Gk. *hēpat-os* < *hēpṇt-, Lat. *iecinoris*.

- Alternating with other suffixes; as, **gheimṛ/gheims/ghjiems**, *winter*, **skīwṛ/kīwōn/skinōn**, *shinbone*, later *column*, **wēsṛ/wēsṇtós**, *spring*, **wedṛ/wédenos/wodā**, *water*, **swepṛ/swopnos**, *dream*.
- Formed from the consonant **r** or **n** of the heteroclitc; as, **pāwṛ/pūr/puōn**, *fire*, **nomṛ/nómeros/nómenos**, *precision*, *number*, Gk. *skōr* (gen. *skatos*), Hitt. *šakkar* (gen. *šaknaš*), Lat. *-scerda*, “*shit*”.

4.6.5. The *Heteroclites* follow the form of the Genitive Singular when forming the Obliques. That is so in the lengthening before declension, vocalism, and in the accent too.

4.7. VOCALISM BEFORE THE DECLENSION

4.7.1. The Predeclensional vowel is that which precedes the ending, even the \emptyset ending; i.e., we say that Nom. **patér** has a long predeclensional vowel; that the Vocative **patér** has a full one, and that **patréri** has it \emptyset . Other example of the three possibilities is the alternating **pod**, **ped** and **-pd-**.

NOTE. The vocalic changes in timbre and grade aren't meaningful by themselves, they are multifunctional: they can only have meaning in a specific declension, and it is not necessarily always the same. They are thus disambiguating elements, which help distinguish homophones, i.e., words that sound alike.

Changes in vocalism, as we have already explained, happens mainly in PIE roots, and is found in Late PIE dialects only in words that were not remade into the new declension paradigm, i.e. the standard fixed vowel grade and accent.

NOTE. The lengthening of the predeclensional vowel in **r/n/s** stems has been explained (Szemerényi's law) as a consequence of an older (*regular PIE*) Nom. **-s** ending; as, **ph₂tér-s* → **ph₂tér*, **kwon-s* → **kwōn*, etc. Cf. e.g. the evolution PIE **pod-s** (PII *pads*) → Skr. *pāt*.

4.7.2. Two kinds of nominal inflection have no alternating stem vowel: that in **i**, **u**, and that of the participles of Reduplicates.

4.7.3. Stems in **r** and **n** had two possibilities, both with a Nom. sg. in \emptyset and lengthened vowel.

1. Nom. with lengthened vowel, Acc., Voc. with full vowel, and Gen. \emptyset . The timbre can be **e** or **o**, depending on the words.

a. In **r**, as in Nom. **mātré**, Acc. **māterm**, Voc. **māté**, Gen. **mātrós**.

b. In **n**, as in Nom. **kwōn/kuwōn**, Acc. **kwonm/kuwonm**, Voc. **kuon/kuwon**, Gen. **kunós/kunés**.

2. Sometimes, the Genitive had a full grade, as the Accusative and the Vocative. This grade is redundant, not necessary for the disambiguation of the Genitive from the Nominative. There were different timbres **e** and **o**, sometimes **o** in Nom.-Acc.-Voc., and **e** in Gen., sometimes **o** in Acc.-Voc.-Gen. and **e** in Obl.

4.7.4. There was usually the same vocalism in nouns ending in Occlusive.

An exception is made in the adjectives and participles in **-nt**, which present full vowel in Nom.-Acc.-Voc., and zero-grade in the Genitive; as, Nom. **bheronts**, Acc. **bherontm**, Voc. **bherntós**.

NOTE. There are remains of what seems to be an old alternating vocalism in monosyllabics. The variants **dem/dom**, **ped/pod**, **neqt/noqt**, etc. suggest an original (i.e. IE II) paradigm Nom. **pod-s**, Acc. **pod-m**, Gen. **ped-ós**. This is, again, mostly irrelevant for Modern Indo-European, in which both alternating forms may appear in frozen vocabulary, either with **o** or **e**; as, i-declension **noqtis**, *night*.

4.7.5. Stems in **s** do not present a zero-grade. Animates, as already said, oppose a lengthened-vowel Nominative to the other cases, which have full vowel, i.e., Nom. **-ēs**, rest **-es**, Nom. **-ōs**, rest **-os**.

4.7.6. We know already what happens with stems in **i**, **u**, which have two general models or types:

Type I. In **i**, Nom. **-i-s**, Acc. **-i-m**, Voc. **-ei** or **-i**, Gen. **-ei-s** (or **-oi-s**).

In **u**, Nom. **-u-s**, Acc. **-u-m**, Voc. **-eu** or **-u**, Gen. **-eu-s** (or **-ou-s**).

Type II. In **i**, Nom. **-i-s**, Acc. **-i-m**, Voc. **-ei** or **-i**, Gen. **-(e)i-os**.

In **u**, Nom. **-u-s**, Acc. **-u-m**, Voc. **-eu** or **-u**, Gen. **-(e)u-os**.

NOTE. This is an inversion of the general paradigm: the Nom.-Acc.-Voc. has zero-grade (**i**, **u**) but for some Voc., the Gen. \emptyset or full (**ei**, **eu**). Distinction is obtained through alternating forms; as in Voc., in which the ending **-ei** distinguishes it from Neuters in **-i**; or with changes of Gen. **e/o**.

4.7.7. Those in Long Diphthong alternate the diphthong (or long vowel) with **j** or **w**, which represents the \emptyset -grade; as in **djēus**, **djēm**, **diwós**; or **nāu-s**, **naw-ós**. Uniform vocalism (i.e., no vowel change) is the general rule, though.

NOTE. These diphthongs reflect an older situation, of a vowel plus a laryngeal, and they are probably related to nouns in **a**, and also to those in **e** and **o**.

4.7.8. Stems in **ā** usually maintain an uniform vocalism: Nom.-Voc. **-ā**, Acc. **-ām**, Gen. **-ās**. But those in **ja/ī** may alternate Nom.-Voc. **-ja/-ī**, Gen. **-jās**.

NOTE. There are also remains of **-a** in Voc. (and even Nom.), as well as **-ai**, cf. Gk. γυναι (*gunai*, an example also found in Armenian), and other forms in **-ai** in Latin (as *rosae* < **rosai*), Old Indian and other IE dialects. Those in **ē** and **ō** show also traces of alternating phonetic changes.

4.7.9. Neuter stems distinguish the Nom.-Acc.-Voc. forms by having a predeclensional vowel, normally **Ø** (the ending is also **Ø**, but for thematic stems), as generally in nouns in **i, u, r, n** and Occlusive; as **kṛdi, madhu, nōmṇ**. There are exceptions, though:

1. Nouns with lengthened or full vowel; as, PGk. udōr for MIE **wedṛ**;
2. Nouns in **s** cannot have **-Ø-**, they have **-o-** in nouns, **-e-** in adjectives; as, **genōs, sugenēs**.
3. Finals **e/o** have a uniform predeclensional vowel, normally **o**, plus Nom.-Acc.-Voc ending **-m**.

In the Oblique cases, neuters are declined like the animates.

NOTE. There are no Neuters Sg. in **-ǎ**, but for those which became common plural nouns, as e.g. Nom. Sg. **Bublĵā**, *The Bible*, lit. “*the books*”, from Gk. *bubliom*, *book*.

4.8. VOCALISM IN THE PLURAL

4.8.1. Vocalism in the Plural is generally the same as in the Singular. In the straight cases, Nom.-Acc.-Voc. have full vowel grade (there is no Nominative with lengthened vowel), and the Gen. is in the zero-grade.

There are also some special situations:

1. There are examples of full vowel in Nom.-Voc.; as, **i, u** stems in **-ei-es** and **-eu-es**; **r** stems in **-er-es, -or-es**; **n** stems in **-en-es, -on-es**; **s** stems in **-es-es**.
2. Sometimes, the vowel timbre varies; as, **akmōn/ákmenes**, (*sharp*) *stone*, which give Lith. *akmuö/akmenes* and Sla. **kāmōn/kāmenes*, cf. O.C.S. *kamy/kamene*.
3. There are some **Ø**-grades, as Gk. *óies*, and analogical forms, as Gk. *kúnes*, Lat. *carnes*.

4.8.2. The **Ø**-grade, an exception in the Nom.-Voc., is usual in Accusative Plural in **i, u** stems; as in derivatives with forms **-i-ns, -u-ns**.

As a general rule, then, the Plural has a full vowel: **ákmenes, māteres**, etc.

4.8.3. In consonant declension, Inanimates in **s** have a Nom.-Acc.-Voc. Pl. **-es-** in the whole inflection (but Nom.-Acc.-Voc. Sg. in **-os**); the other stems are in **-Ø**.

4.8.4. The old vocalism of the Genitive Plural was **Ø**. The full grade is often found, though, especially in stems in **n** and often **r**; as, **ákmenom**, **júwenom**, **élerom**. Cf. also **mātróm**, or **māterom**. Type I **i**, **u** stems also show full grade in **-ei-om**, **-eu-om**.

To sum up, Nominative Plural is usually opposed to Nominative Singular, while Genitive and Accusative tend to assimilate Singular and Plural. When these are the same, full vowel is found in the Accusative, and **Ø** in the Genitive.

4.8.5. In the Obliques Plural, the zero-grade in the predeclensional syllable was very common, whether it has the Genitive vocalism or the full one; as, **kwōn/kunsí**. This **Ø**-grade is also found in **r** stems, as in **patrós**, **patr̥bhós**. And so in **i**, **u**, stems too, in Nom. and Acc. Sg., while **e** is otherwise found (in Nom. Pl., and sometimes in Gen. Sg. and Pl.). The Obliques Plural have **Ø**; as, **egnibhos**, **ówisu**, **ghóstibhis**, etc. Indeed those with a lengthened Genitive form had it also in the plural; as, **rēgbhis**, **prēksu**.

Where there was a distinction straight/oblique stem, the Oblique Plural stem is that of the Nom. Sg. Animate or Nom.-Acc.-Voc. Sg. Inanimate; and when, in any of them, there was a distinction between full- and **Ø**-grade, they take the last. An example of Animates is **ped-**, which gives Nom. **podś**, Gen. **pedés** (remade **pedos**) Obl. Pl. **pedbhís**.

In Inanimates it happens with **s** stems which have **-os** in Nom.-Acc. and **-es** in the other cases; as in **genōś**, **génesi**, **genesbhos**. And in Heteroclites that oppose an **-n** in the cases that are not Nom.-Acc.-Voc. with **r**, **s** or **Ø**.

4.9. ACCENT IN DECLENSION

4.9.1. Just like vocalic grades, the accent was used (normally redundantly) to oppose the *Straight* cases (Nom.-Acc.-Voc.) to the *Oblique* ones.

NOTE. This is one of the worst reconstructed parts of the oldest PIE, as each dialect developed its own accent system. Only Vedic Sanskrit, Greek and Balto-Slavic dialects appear to have more or less retained traces of the oldest accent system, and even these have undergone different systematizations, which obscure the original situation. See §2.6.

4.9.2. PIE Stress paradigms can be classed as Static or Mobile.

In a Static paradigm, the stress of each inflected form was fixed on the same syllable of the stem; as, Nom. **włqos**, Gen. **włqosjo**.

NOTE. Thematic nouns and adjectives were always of the static type; so were some common old athematic paradigms, as well as those Late PIE athematics that were remade as Static.

In a Mobile paradigm, the stress fell on the stem in some forms (usually the *strong* ones) and on the inflectional ending in others (usually the *weak* ones).

NOTE. Mobile stress was common among nouns belonging to athematic classes, especially when the stem ended in a consonant or was simply identical with the root (*root nouns*).

4.9.2. In monosyllabics, the oldest Mobile paradigm is clearly observed:

Nom. **pōds**, Acc. **pōdm̐**, Gen. **pedés**, remade (Static) **pedos**.

Nom. **kwōn**, Acc. **kwonm̐**, Gen. **kunés**, remade (Static) **kunos**.

NOTE. Even if the accent shift of the mobile paradigm was changed, remade declensions maintained the *weak* forms for the Oblique cases. According to Gąsiorowski, “[i]t is worth observing that in mobile paradigms the location of stress has an effect on vowel quality. Unstressed syllables may have so-called zero vocalism (where, in the absence of *e or *o glides, liquids or nasals take over their function as syllabic segments). A shift of stress may also lead to syncope, so that a vowel disappears altogether (as in *drous, leaving a consonant cluster. When neither syncope nor consonant syllabification seems possible, an unstressed vowel remains but *e is preferred to *o in this position (*pedós vs. *pódṃ). The result is a system involving complex alternations (so that the stem *kwon- may also be realised as *kuwōn, *kun- with a vocalised glide or *kwṇ- with syllabic [n]).

As complex systems are difficult to learn, many of the irregularities visible in the table tended to be levelled out already in PIE times. Static paradigms, with their immobilised stress and completely predictable forms, expanded at the cost of mobile declensions. This process was similar to the spread in English of regular plurals in -(e)s: *horses* (Old English *hors*), *hares* (OE *haran*), *cows* (OE *cy*), *sons* (OE *sunu*) etc.; only a handful of odd archaic plurals remain (*oxen*, *men*, *geese*, *deer*, *sheep*) to show that English once had a number of declensions.

4.9.3. In polysyllabics, there is e.g. **mātér**, **mātrós**, etc., but also **mātér**, **mātr̥s** (cf. O.Ind. *mātúr*), **patr̥s** (cf. Skr. *pitúr*), **bhrātr̥s** (cf. Skr. *bhartuḥ*), and so on.

1. Stems in **i**, **u**, had probably originally a root accent in Nom.-Acc., and a Genitive with accent on declension, as in the rest of examples.

2. For those in \bar{a} the oldest system is not clearly reconstructed.

3. The Vocative could be distinguished with the accent. The general rule is that it is unstressed, but for the beginning of a sentence; in this case, the stress is on the first syllable, to differentiate it from the Nominative, with accent on declension.

NOTE. Stress is thus related to the intonation of the sentence. Gąsiorowski states “[i]t seems that in the vocative case of PIE nouns the main stress was invariably word-initial even in those static declensions that had paradigmatically enforced stress on some other syllable. This seems to mean that PIE vocatives had a characteristic falling intonation”.

4.9.4. In the Plural system, Straight cases had the stress of the straight cases in the singular, and the Obliques shared the stress of the Genitive, when it was opposed to the Nom.-Acc; as in **patr̥bhós**, **pedmós**, **māt̥bhís**, etc.

4.10. NUMBER DEVELOPMENTS: THE DUAL

4.10.1. While Singular and Plural are relatively fixed values, the dual has proven to be unstable; it is found in Ind.-Ira., Gk., BSl. and Cel.

NOTE. Generally speaking, the rise and decline of the dual may be directly investigated in individual IE languages, e.g. in Greek, in which the dual is a fixed component of the language, while it is missing altogether in Ionic and Lesbian. The origins of the dual might be found in two word types: the personal pronoun and terms for paired body parts (as ‘ears’, ‘eyes’, ‘breasts’, etc.). It is uncertain whether the dual was an old category that gradually disappeared, or more likely a recent (Late PIE) development that didn’t reach all IE dialects. See Meier-Brügger (2003).

4.10.2. The formations vary depending on the stems.

The Nom.-Acc.-Voc. is made:

- Stems in **a**: in **-āī** for \bar{a} ; in **-ī** for **ja/ī**.
- Stems in **o**: Animate in **-ōu** (alternating **-ō/-ōu**); Inanimate in **-oi**.
- Stems in **i**, **u**: Animates and Inanimates in **-ī**, **-ū**.
- Consonant stems: in **-e** (not general).

NOTE. The endings are usually summed up as a common PIE $*-h_1(e)$, $*(i)h_1$.

The Obliques were still less generalized, the system being reconstructed as follows:

Gen. **-ous**, Dat.-Abl. **-bhos/-mos**, Loc. **-ou**, Ins. **-bhis/-mis**.

5. ADJECTIVES

5.1. INFLECTION OF ADJECTIVES

5.1.1. In Proto-Indo-European, the noun could be determined in three different ways: with another noun, as in “*stone wall*”; with a noun in Genitive, as in “*the father’s house*”; or with an adjective, as in “*paternal love*”. These are all possible in MIE too, but the adjective corresponds to the third way, i.e., to that kind of words – possibly derived from older Genitives – that are declined to make it agree in case, gender and number with the noun they define.

5.1.2. The adjective is from the older stages like a noun, and even today Indo-European languages have the possibility to make an adjective a noun (as *English*), or a noun an adjective (*stone wall*). Furthermore, some words are nouns and adjectives as well: **versis**, *male*, can be the subject of a verb (i.e., a noun), and can determine a noun.

Most stems and suffixes are actually indifferent to the opposition noun/adjective. Their inflection is common, too, and differences are usually secondary. This is the reason why we have already studied the adjective declensions; they follow the same inflection as nouns.

5.1.3. However, since the oldest reconstructible PIE language there were nouns different from adjectives, as PIE **wlqos** or **pods**, and adjectives different from nouns, as **rudhrós**, **solwos**, etc. Nouns could, in turn, be used as adjectives, and adjectives be nominalized.

NOTE. There were already in IE II some trends of adjective specialization, with the use of suffixes, vocalism, accent, and sometimes inflection, which changed a noun to an adjective and vice versa.

5.2. THE MOTION

5.2.1. In accordance with their use, adjectives distinguish gender by different forms in the same word, and agree with the nouns they define in gender, number and case. This is the *Motion* of the Adjective.

5.2.2. We saw in § 3.4 that there are some rare cases of Motion in the noun. Sometimes the opposition is made between nouns, and this seems to be the older situation; as, **patér/mātér, bhrātēr/swesōr**.

But an adjective distinguishes between masculine, feminine and neuter, or at least between animate and neuter (or inanimate). This opposition is of two different kinds:

a. Animates are opposed to Inanimates by declension, and also vocalism and accent; as, **-os/-om, -is/-ī, -nts/-nt, -ēs/-es**.

b. The masculine is opposed to the feminine, when it happens, by the stem vowel; as, **-os/-ā, -nts/-ntja, -us/-wja**.

The general system may be so depicted:

	<i>Animates</i>		<i>Inanimates</i>
	<i>Masculine</i>	<i>Feminine</i>	<i>Neuter</i>
1.	-os	-ā	-om
2.	-is	-is	-ī
3.	-nts	-ntja	-nt
4.	-ēs	-ēs	-es
5.	-us	-wja	-u

NOTE. The masculine-feminine opposition is possibly new to Late PIE; IE II – as the Anatolian dialects show – had probably only an Animate-Inanimate opposition. The existence of this kind of adjectives is very important for an easy communication, because e.g. adjectives in **ā** are only feminine (unlike nouns, which can also be masculine). An **o** stem adjective followed by an **-s** in Nom. Sg. is animate or masculine, never feminine only, whilst there are still remains of feminine nouns in **-os**.

5.2.3. Compare the following examples:

1. For the so-called *thematic adjectives*, in **-os, -ā, -om**, cf. **somós, -ā, -óm**, *equal*, **rudhrós, -ā, -óm**, *red*, **wolós, -ā, -óm**, *willing*, **kserós, -ā, -óm**, *dry*, etc. But note the root accent in **newos, -ā, -om**, *new*, **solwos, -ā, -om**, *whole*, **kaikos, -ā, -om**, *blind*, **lajos, -ā, -om**, *fat*, etc.

5. Adjectives

NOTE. Most adjectives have **o**-stem, among them verbal adjectives and compound adjectives, cf. **diwós**, *heavenly*, **klutós**, *heard*, *famous*. The corresponding feminine forms feature PIE **ā**.

2. For adjectives in **-us**, **-wja/-wī**, **-u**, cf. **ēsús**, **-wjá**, **-ú**, *good*, **mṛghús**, **-wjá**, **-ú**, *short*, **leghús**, **-wjá**, **-ú**, *light*, **ōkús**, **-wjá**, **-ú**, *swift*. With root accent, cf. **swādus**, **-wja**, **-u** (Southern IE *swādús*, **-wī**, **-ú**), *pleasant*, **młdus**, **-wja**, **-u**, *soft*, **tṇghus**, **-wja**, **-u**, *fat*, **tṇus**, **-wja**, **-u**, *thin*, **tṛsus**, **-wja**, **-u**, *dry*, **dhṛsus**, **-wja**, **-u**, *bold*, etc.

NOTE. On the original stress of PIE **swādus*, see the so-called *Erlangen School Ablaut system*, e.g. Lubotsky (1987) at <https://openaccess.leidenuniv.nl/bitstream/1887/2667/1/299_021.pdf> and Frazier (2006) at <<http://roa.rutgers.edu/files/819-0406/819-FRAZIER-0-0.PDF>>.

3. For adjectives in **-is**, **-i**, cf. **grṇdhís**, **-í**, *grown*, **lēnis**, **-i**, *weak*, **moinis**, **-i**, *obliged*, **muttis**, **-i**, *speechless*, **ṇwidis**, **-i**, *ignorant*, etc.

5.3. ADJECTIVE SPECIALIZATION

5.3.1. The specialization of adjectives from nouns is not absolute, but a matter of grade:

1. Stems in **-nt** are usually adjectives, but they were also assimilated to the verbal system and became (Present) Participles.

2. Words in **-ter** are nouns, and adjectives are derived usually in **-trjós** and others.

3. Nouns in **-ti** have adjectives in **-tjós**, or **-tikós**, usually with an ethnic meaning.

4. Sometimes distinction is made with alternating vowels: neuters in **-om** and adjectives in **-és**, **-és**.

The accent is normally used to distinguish thematic nouns in **-os** with adj. in **-ós** (mainly **-tós**, **-nós**).

NOTE. There are sometimes secondary processes that displace the accent from an adjective to create a noun; cf. Gk. *leukós*, “white”, *léukos*, “white spot”. These correlations noun-adjective were often created, but from some point onward the derivation of adjectives was made with suffixes like **-ment-** (**-went-**), **-jo-**, **-to-**, **-no-**, **-iko-**, etc. There are, however, abundant remains of the old identity between noun and adjective in Late PIE. For adjectival suffix **-jo-** and **-ijo-**, cf. *istarniya-* ‘central’ (<*īštarna* ‘between’), Ved. *dāmiya-* ‘domestic’, *gāvya-* ‘pertaining to cows’, Lat. *ēgregius* ‘outstanding’ (<*ē grege* ‘out of the herd’) etc. Other endings are dealt with as participles, v.i.

5.4. COMPARISON OF ADJECTIVES

5.4.1. In Proto-Indo-European, as in English, there are three degrees of comparison: the Positive, the Comparative and the Superlative.

5.4.2. The adjective in its natural or ‘positive’ state may be made comparative and superlative by the addition of suffixes.

5.4.3. The Comparative, a difference of grade between two compared values, is generally formed by adding the Primary Comparative suffix **-jos-** to the root; as, from **sen-os**, **sen-jos** (Lat. *senior*), *older*, from **mag-nos**, **mag-jos**, *bigger* (Lat. *maior*), etc.

NOTE. The form **-jos** varies allophonically with **-ijos**, cf. **new-jos**, **new-ijos**, *newer*. According to Meier-Brügger, “[**-ijōs*] replaces [**-jos*] in nominative singular masculine and feminine forms with the structure KV.K- and KVR.K-; whereas, according to rules of phonetics, **-jos-* is expected in forms with three or more syllables”.

The suffix **-(t)er-o-** is the basis for the Secondary Comparative forms; as, from **upo**, *up*, *upon*, **up-er-o-** (cf. O.Ind. *úpar-a-*) *beneath*, *nearer*.

NOTE. The suffix **-(t)ero-** is the *-o-* adjective form of adverbs ending in **-(t)ṛ** and **-(t)er**; as, **sup**, *under*, **sup-er-**, *over*, and **sup-er-o-**, *found above*; **pro**, *at the front*, forward, and **pró-ter-o-**, *toward the front*, *earlier*. Adverbs and adjectives that were derived from them were capable of marking relative contrast, e.g. in the case of opposites or selection from a pair; cf. from **sem-**, one, **sm-ter-o**, *the other of two in a unity*, v.i.

5.4.4. The Superlative marks the highest grade among two compared values. The same suffix (with the ablaut **-is-**) is the base for common PIE **-is-tos**, **-is-ṃos**; as, **senistos**, *oldest*, **magisṃos**, *biggest* (Lat. *maximus* < **magisemos*), **newistos**, *newest*, etc.

Superlative of the Secondary Comparative is made in **-ṃo-**; as, **uper-ṃo-**, **súp-mos** (Lat. *summus*), from **ṇdherós**, *underly*, **ṇdh-ṃos** (Lat. *infimus*, Skr. *ádhamas*), from **entós**, *inside*, **ent-ṃos**, (Lat. *intimus*), *innermost*.

NOTE. Dialectal Superlative suffixes include O.Ind. **-tṃo-** (cf. Skr. *-tama-*), and Gk. **-tḡ-to-** (cf. Gk. *tato*); **-ṃo-** appears in other PIE adjectives, but it took usually the Superlative degree.

These suffixes **-jo-**, **-tero-**, and **-is-to-**, had probably an original nominal meaning.

NOTE. Thus, the elongations in **-jos** had a meaning; as in Latin, where *iuniores* (< **jun-jos-es*) and *seniores* (< **sen-jos-es*) were used for groups of age; or those in **-teros**, as *mā́térterā* ‘aunt on the mother’s side’, *ekwā́teros* ‘mule’. Forms like **jun-jos-es* were not common in PIE, although indeed attested in different dialects; adjectival suffixes **-jós**, **-istós** are added to the root (in e-grade) without the initial suffixes, while **-teros** and **-ṃos** are added with the suffixes. Cf. O.Ir. *sír*, cp. *sía* < **sējós**, ‘longus, longior’; *lán* (*plēnus* cf. *lín* ‘numerus’), cp. *lia* < **plējós** (Lat. *plaios*, Gk. *pléos*); cf. Lat. *plorume*, zero-grade Lat. *maios*, O.Ir. *mía*. So, for **júwenos** we find Umb. cp.

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jovie<**jowjē-s**, O.Ir. *óac* ‘iuuenis’, *óa* ‘iunior’, *óam* ‘iuuenissimus’, O.Ind. *yúva(n)-* (*yūnah*), cp. *yávīyas-*, sup. *yávīṣṭa-h*.

5.5. NUMERALS

5.5.1. CLASSIFICATION OF NUMERALS

Modern Indo-European Numerals may be classified as follows:

I. Numeral Adjectives:

1. Cardinal Numbers, answering the question *how many?* as, **oinos**, *one*; **dwōu**, *two*.
2. Ordinal Numbers, adjectives derived (in most cases) from the Cardinals, and answering the question *which in order?* as, **přwos**, *first*; **ónteros**, *second*.
3. Distributive Numerals, answering the question *how many at a time?* as, **semli**, *one at a time*; **dwisni**, *two by two*.

II. Numeral Adverbs, answering the question *how often?* as, **dwis**, *twice*, **tris**, *thrice*.

5.5.2. CARDINALS AND ORDINALS

1. These two series are as follows, from one to ten:

	<i>Cardinal</i>	<i>Eng.</i>	<i>Ordinal</i>	<i>Eng.</i>
1.	oinos, oinā, oinom	<i>one</i>	přwos, přmos	<i>first</i>
2.	dwōu, dwāi, dwoi	<i>two</i>	ónteros (dwóteros)	<i>second</i>
3.	trejes, trja, trisores	<i>three</i>	tritjos	<i>third</i>
4.	qétwřes	<i>four</i>	qétwřtos	<i>fourth</i>
5.	penqe	<i>five</i>	penqtos	<i>fifth</i>
6.	s(w)eks	<i>six</i>	sekstos	<i>sixth</i>
7.	septm	<i>seven</i>	séptmos	<i>seventh</i>
8.	oktōu	<i>eight</i>	oktowos	<i>eighth</i>
9.	newn	<i>nine</i>	néwnos	<i>ninth</i>
10.	dekṃ	<i>ten</i>	dékṃtos, dékṃos	<i>tenth</i>

NOTE 1. From root **oi-**, PII *ai-kas* (<*oi-k-os), CAn *ei-kos*, PGk *oi-wos*. For **přwos**, *first*, cf. O.Ind. *pūrva-*, O.C.S. *prǔvŭ*. For **přmos**, cf. Gk.Dor. *pratos* (<*prā-wo-to<*prā-mo-), Lith. *pirmas*, O.Eng. *forma*, or Goth. *fruma*, Lat. *přmus* (<*pri-isamos<*př(w)isṃos, Pael. *prismu*).

NOTE 2. The Ordinals were formed by means of the thematic suffix *-o-*, which caused the syllable before the ending to have zero grade. The newer suffix *-to-* was the most productive in Late PIE. For internal reconstruction in PIH, Late PIE and early dialects, see Szemerényi (1970).

2. The forms from eleven to nineteen were usually formed by placing the number and then **dekṃ**, *ten*. Hence Modern Indo-European uses the following system:

	<i>Cardinal</i>	<i>Ordinal</i>
11.	óinodekṃ	óinodekṃtos
12.	dwódekṃ	dwódekṃtos
13.	tréjesdekṃ	tréjesdekṃtos
14.	qétwres-dekṃ	qétwres-dékṃtos
15.	penqe-dekṃ	penqe-dékṃtos
16.	seks-dekṃ	seks-dékṃtos
17.	septṃ-dekṃ	septṃ-dékṃtos
18.	oktōu-dekṃ	oktōu-dékṃtos
19.	newṇ-dekṃ	newṇ-dékṃtos

NOTE. Eleven and twelve were already fossilized collocations in O.Lat., O.Ind. (*áikadaḱṃ*), O.Gk. (*sémdekṃ*); also Gmc. and BSl. **óinoliqa**, “one left”, **dwóliqa**, “two left”, with ordinals **óinoliqtos**, **dwóliqtos**. For a frozen *thirteen*, cf. Skr. *trayodaśa*, Lat. *trēdecim* (<*trēsdecem).

3. The tens were normally formed with the units with lengthened vowel/sonant and a general **-kṃta** (<*h₁kṃth₂<*dkṃth₂?), “group of ten”.

	<i>Cardinal</i>	<i>Ordinal</i>
20.	(d)wīkṃtī	(d)wīkṃtṃos
30.	tríkṃta	tríkṃtṃos
40.	qetwřkṃta	qetwřkṃtṃos
50.	penqékṃta	penqékṃtṃos
60.	séskṃta	sekskṃtṃos
70.	septṃkṃta	septṃkṃtṃos
80.	októkṃta	októkṃtṃos
90.	newṇkṃta	newṇkṃtṃos
100.	kṃtóm	kṃtémtṃos

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4. The hundreds are made as compounds of two numerals, like the tens, but without lengthened vowel. The thousands are made of the numerals plus the indeclinable **túsnti**:

	<i>Cardinal</i>	<i>Ordinal</i>
200.	dwikm̃tós	dwikm̃témt̃mos
300.	trikm̃tós	trikm̃témt̃mos
400.	qetw̃rk̃m̃tós	qetw̃rk̃m̃témt̃mos
500.	penqekm̃tós	penqekm̃témt̃mos
600.	sekskm̃tós	sekskm̃témt̃mos
700.	sept̃mk̃m̃tós	sept̃mk̃m̃témt̃mos
800.	oktōkm̃tós	oktōkm̃témt̃mos
900.	new̃nk̃m̃tós	new̃nk̃m̃témt̃mos
1000.	sm̃ghslī/túsntī	sm̃ghslitos/túsntitos
2000.	dwōu/dwāi/dwoi sm̃ghslī/túsntī	ónteros sm̃ghslitos/túsntitos
3000.	trejes/trja/trísore sm̃ghslī/túsntī	tritjos sm̃ghslitos/túsntitos
4000	qétw̃res sm̃ghslī/túsntī	qétw̃rtos

NOTE. For *thousand*, adj. **sm̃ghslī** (<*sm̃-ih₂+ghsl-ih₂), cf. Lat. *n. mille*, (*n. pl*) *mi(l)lia*, Gk. *khīl(l)ioi* (<*ghsl-i-o-), Gk. *khīl(l)ioi*, i-stems **gh(e)sl-i-** of **ghesl-o-**, as in PII **sm̃-gheslo-m**, cf. Skr. *n. sa-hásra-*, Av. *ha-zaŋra*. For Eastern EIE **túsntī**, (<*tus-kmt-i-?, “fat hundred”), cf. Gmc. *pūsund-i*, pl. *pūsundjōs* Bal. *tūsunt-i*, O.Prus. *tūsimtons*, Toch. *tumame*, Sla. **tīsōt-j-ā*.

5. The other numerals are made similar to the tens, with the units in first place; as, **oinā-wīkm̃tī**, f. *twenty-one*; m. **qétw̃res-trīkm̃ta**, *thirty-four*.

NOTE. For the simple type **oinos-wīkm̃tī**, cf. Skr. *éka-viṃśati* (in compounds where the unit could be inflected); with copulatives, cf. Lat. *unus et uiginti*, Bret. *unan-warn-ugent*, Ger. *einundzwanzig*, Du. *eenentwintig*, Fris. *ienentweintich*, Da. *enogtyve*, etc.

Numbers beyond 100 usually have the copulative **-qe**; as, **kmtóm qétw̃res-qe**.

NOTE. The normal order of composite numerals is unit+tens, and there was a natural tendency to follow a ‘unit+ten+hundred+...’, e.g. RV *cátuḥ-śata-* (<**qetw̃res-kmtóm**), *one hundred and four*; nevertheless, an order ‘(large numbers)+hundred+unit-ten’ prevailed in all dialects, usually with a copulative particle; as, *śatám ekám ca* (= **kmtóm oinom-qe**), *one hundred and one*.

Only the last member signals the ordinal; as, **oinā-wīkm̃t̃mos**, *twenty-first*, **trikm̃tós trja-trīkm̃t̃mos-qe**, f. *three hundred thirty-third*.

NOTE. Cf. Skr. *ékaviṃśa-*, Lat. *unus et vicensimus*, Ger. *einunzwanzigste*, etc.

6. Numerals were often inserted as prefixes of possessive compound forms, cf. the type Gk. **tri-pod-**, *tripod*. As first members, numbers 1-4 had a special zero-grade form: **sm-**, *one-*; **dwi-**, *two-*, **tri-**, *three-*, and also **q(a)tur-**, *four-*.

5.5.3. DECLENSION OF CARDINALS AND ORDINALS

Of the Cardinals only **oinos**, **dwōu**, **trejes** (and dialectally **qétwres**), are declinable.

a. The declension of **oinos**, **-ā**, **-om** has often the meaning of *certain*, *a*, *single*, *alone*; as, **oinā dinā**, *a certain day*. Also, as a simple numeral, to agree with a plural noun of singular meaning. The plural occurs also in phrases like **oinōs álterōs-qe**, *one party and the other one* (*the ones and the others*).

The root **sem-**, in **semos**, *one*, refers the unity as a whole, found in adj. **somós**, *equal*.

NOTE. Gk., Arm., Toch., show an old N. m. **sems**, A. **sēm**, N.-A. n. **sem** (G.-Ab. **smes**, D. **smei**, L. **sem(i)**, I. **smē**), and f. **smja/ī** (A. **smja/īm**, G.-Ab. **smjās**, D. **smjāi**, L. **smjā(i)**, I. **smjā**).

c. The inflection of **d(u)wōu**, *two*, is irregular, connected to issues concerning the dual:

	<i>mas.</i>	<i>fem.</i>	<i>neu.</i>
N.-A.-V.	d(u)wōu	d(u)wāi	d(u)woi
GEN.	dwous		
DAT.-ABL.	dwobhos/dwomos		
LOC.	dwou		
INS.	dwobhis/dwomis		

NOTE. Apparently an older *n./f. dwoi* was separated into a newer Late PIE *f. dwāi*. Also, PIE **ambhōu**, *both*, is inflected like **dwōu**.

c. The inflection of **trejes**, *three*, is mostly a regular i-stem one:

	<i>m.</i>	<i>f.</i>	<i>n.</i>
NOM.-VOC.	trejes	trija/trī	trísores
ACC.	trins	trijans/trīns	trísores
GEN.	trijom		
DAT.-ABL.	tribhos/trimos		
LOC.	trisu		
INS.	tribhis/trimis		

5. Adjectives

d. **smīghslī/tūsntī**, *thousand*, functions as an indeclinable neu. adjective:

smīghslī modōis, *in a thousand ways*; **kom tūsntī wīrōis**, *with a thousand men*.

dwāi smīghslī penqekmtós trejesdekṃ-qe cenām, (Acc. f.) *to 3513 women*.

NOTE. PIE plural nouns neu. **smīghslī/tūsntī**, are old abstract (collectives) in **-ja/ī** (<*-i-h₂), etymologically identical to neuter plurals in Nom.-Acc.-Voc. **-a**; therefore, unlike feminine nouns of the first declension in **-ja/ī** (an innovation in Late PIE), their stems follow the old neuter plural declension in **i**, of the same type as **trja/trī** (which is nevertheless a PIE feminine). As, specific plural **smīghsljom/tūsntijom cenām**, *of thousands of women*. From **sm-ih₂-ghsl-ih₂*, giving **smīghslī**, **smīghslja**, both Lat. **mīl(l)i* and *mīlia* “might be postulated as free forms within the same synchronic structure” J. Gvozdanović (1992) against a starting point **-ijā* (E. Hamp, 1968).

e. The ordinals are adjectives of the **o** and **ā** declensions, and are regularly declined.

6.3.2. Cardinals and Ordinals have the following uses:

a. Numbers 11-13 have no gender or flexion; as, m., f., n. **óinodekṃ**, **dwódekṃ**, **tréjesdekṃ**; numbers above 20 have gender and flexion; as, f. **oinā-sékskṃta**, f. **dwāi-wīkṃtī**, n. **trisores-qetwṛkṃta**, n. **oinom-wīkṃtī putlā**, Acc. *21 children*.

b. In numbers above 100 the highest denomination generally stands first, the next second, etc., and the ‘ten’ is last, as in German; as, **smīghslī/tūsntī septṃkmtós qetwṛes-sékskṃta-qe**, *1764*.

c. PIE had no special words for *million*, *billion*, *trillion*, etc. They were expressed by multiplication. In MIE they are formed with common loan *million*, from Lat. *mille*, “one thousand”; as, **smīghsljōn**, *million*, **dwīghsljōn**, *billion*, **trīghsljōn**, *trillion*, etc.

d. A common expression in PIE is the adverbial use of the accusative singular neuter of the ordinal; as, **pṛwom**, *firstly*; **ónterom**, *secondly*, etc.

e. Fractions are expressed, as in English, by cardinals in the numerator and ordinals in the denominator. The neuter is generally used for substantivized ordinals, or the feminine with noun ‘part’; as, n. **dwōi séptmā** (or f. **dwāi septṇāi pṛtes**) *two-sevenths*; n. **trisores oktowā**, *three-eighths*.

When the numerator is one, it is usually omitted: **tritjom**, *one-third*; **qetwṛtom**, *one-fourth*, and so on.

NOTE. Indo-Iranian exhibits an old trend omit the parts in which it is divided, if only one is left; as, **dwāi pṛtes**, *two-thirds* (“two parts”), **trja pṛtes**, *three-fourths*.

The compositional PIE **sēmi-**, *half*-, is combined with ordinals to express cardinals plus *half*; as, **sēmi-tritjos**, *two and a half*, i.e. “*having a half of the third (item)*”.

NOTE. For MIE *half*, a loan from Lat. adj. **dwismedhjos**, noun **dwismedhjom**, “*divided medially*”, could be used; however, proper forms meaning *divided in two* are reconstructed from multiplicatives, v.i.

f. In Approximatives, the old disjunctive use of numerals was made by collocations of adjacent cardinals in ascending order, e.g. **penqe seks septm**, *five, six, or seven*. In MIE, a common IE **penqe-septm** (or **penqe septm-we**), *six or seven*, is also possible.

g. Time periods are made with compounds:

For years, as **dwiatnjom**, *a period of two years*, **triatnjom**, **qetwratnjom**, **smighsliatnjom**, *millenium*, etc.

For days, as **dwidjówijom**, *a period of two days*, **tridjówijom**, **qetwrdjówijom**.

For months, as **dwimēnstris**, *a period of two months, bimester*, **trimēnstris**, *trimester*, **qetwrmēnstris**, **seksmēnstris**, *semester*, etc.

NOTE. For month names, a compound with **mēns-ri-** is followed; as, **Septmēmnsris**, *september*, **Oktōmēnsris**, *october*, etc.

5.5.4. DISTRIBUTIVES

1. Distributive Numerals are number words which express group membership. They are used mainly in the sense of *so many apiece* or *on each side*, and also in multiplications. They answer to the question *how many of each? how many at a time?*

2. The oldest formations are collocations of geminated cardinals, with both members inflected; as, **semos-semos**, **oinos-oinos**, *each one*, **penqe-penqe**, *each five*, etc.

NOTE. For this kind of distributives, cf. Gk. *tri tri*, O.Ind., *éka- eka-*, Zor. Pahl. *ēk ēk*, Pers. *das das*, Parth. Sogd. ‘*yw yw*’, Arm. *tasn tasn*, Toch. A *sam sam*, B *šeme šeme*, *okt okt*, *ñu ñu*; also in Hittite iterated groups, in place of distributives, *1-aš 1-aš*, *1-an 1-an*. Even in nouns, cf. Lat. *alteros alterom*, *each other*, O.Ind. *dīve dīve*, *each day*; Myc. *we-te we-te*, *each year*; etc. etc.

3. Some PIE distributives were formed with adj. suffix **-(s)no-**, and abstract/collective suffix **-ī**; as, **dwīsnī**, *two at a time, two each*, **trīsnī**, **qátrusnī**.

NOTE. For this formation e.g. **dwīsnī**, cf. Lat. *bīnī*, Gmc. **twīznaz* (<**dwīsnōs**, cf. O.N. *tvenner*, O.H.G. *zwīrnēn*, O.Eng. *twīn*, Du. *twijn*), Russ. *dvojni* Lith. *dvynū*, Arm. *krkin*, Lyc.

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kbisāni. Also, it is believed that **oi-no-** was originally the first member of that series (remember dialectal **oi-wos**, **oi-kos**), meaning “singleness, unity”, before replacing **sem-**. Distributives for higher numerals were later expressed in EIE languages using a word that meant ‘each’, as, Eng. *each*, Fr. *chaque*, Alb. *kaa*, Bret. *cach*, etc.

4. Distributives can be used to express percentage; as, *twenty percent*, **dekṃ-dekṃ dwōu**, “two for each ten”, **kṃtóm-kṃtóm wīkṃtī**, “twenty for each hundred”.

5.5.5. NUMERAL ADVERBS

1. The so-called Numeral Adverbs are a distinctive class of adverbs which specifically answer the question **qoti**, *how many times? how often?*

2. The most common ones are formed with zero-grade and a lengthening in **-s**; as, **semli**, *once*, **dwis**, *twice*, **tris**, *thrice*, and **qatrus** (<*qatwṛ-s), *four times*.

NOTE. For EIE **semli**, cf. O.Lat. *semol*, Umb. *sumel*, Goth. *simble*, O.H.G. *simlē*, O.Ir. *amal*; for the expected **sṃni-*, maybe Hitt. *šani*. In PII, it is formed as *sṃkṛt*, from PIE **-qṛt**, *v.i.*; in PGk, **sṃ-pṇqus**, *alone*, cf. Gk. *hapaks*, Hitt. *pa-an-ku-uš*, L. *cūnctus*. For the rest, e.g. **tris**, cf. Lat. *ter*, Myc. *ti-ri-se-roe* (<*Tris-(h)érōhei*), Gk. *tris*, O.Ind. *triḥ*, Goth. *driror*, O.Ir. *thrí*, Luv. *tarisu*, Lyc. *trisu*. Higher numbers are found in Lat. and maybe behind Hitt. 3-*iš*, 10-*iš*, 20-*iš*, 30-*iš*, etc.

3. Some old compounds are also found in **-ki**.

NOTE. A certain reconstruction is nevertheless difficult; cf. Hitt. *-an-ki*, Gmc. *zwis-ki*, Gk. *-ki*, Indian **-ki* (cf. Sogd. *-ky*, Yaghnoibi *īki īki*, “one by one, one each”, Chorasmanian *-c*); maybe also in Arm. *erkics*. Variant Gk. *-kis*, Hitt. *-kis* are probably due to an assimilation to the type **dwis**, *twice*, *twofold*. For higher numbers, probably an innovation, cf. Greek numeral adverbs in *-a-kis*, and Hittite in *-an-ki*, maybe from a common PIE **-ṇki*.

4. A system of simple collocations is used, placing the cardinal number before a noun meaning ‘time’; as, **penqe qṛtewes**, *five times*, **oktōu qṛtewes**, *eight times*, and so on.

NOTE. For *m. qṛtus*, *time*, cf. O.Ind. *-kṛtwaḥ* (<**qṛt-wṇt-m**, see Hollifield 1984), Bal. **kaṛt-a-*, Sla. **kortŭ*, O.Ir. *cruth*, O.Welsh *pryd*. For (rare) compounds, viz. **sṃ-kṛt*, ‘once’, cf. O.Ind. *sa-kṛt*, Av. *ha-karət*, also in Umb. *trioper*, ‘three times’, Osc. *petiropert*, ‘four times’.

5.5.6. MULTIPLICATIVES

1. Multiplicatives like *single*, *double*, *triple*, etc. which answer the question *how many fold?*, had a variety of compounds for the first numerals.

3. The oldest PIE multiplicatives found were Collectives, made in **-jo-**, **-t-** and **-k-**; as, **óinokos**, *single, sole, unique*, **dwójós**, *two-fold, group of two, duad*, **trejós**, *three-fold, triad*, **penqstís**, *group of five*, **dekrínts**, *group of ten, decade*.

NOTE. For North-West common **óinokos**, cf. Gmc. **ainagas* (cf. Goth *ainahs*, O.N. *einga*, O.Eng. *anga*, O.Sax. *enag*, O.H.G. *einac*), O.C.S. *inokŭ*, Lat. *unicus* (<**oine-kos?* or **oino-ikos?*); suffix **-ko-** is also found in O.Ind. *-śáh*, Gk. *-kás*, Hitt. *-kaš*. For PIE **dwójós**, cf. RV *tvayá-*, *trayá*, Myc. *duwojo-/dwojo-*, Gk. *doiós*, O.H.G. *zwī*, g. *zwīes*, Lith. *dvejì*, *trejì*, O.C.S. *ďivojŭ*, *trojŭ*, O.Ir. *trēode*. Apart from **-jo-**, common PIE collectives are found in **-t-**, usually **-ti-**, as **penq-s-tis**, *group of five, fist*, cf. O.Ind. *pañktí-*, Av. *sastí-*, *xsvasti-*, O.C.S. *peštŭ*, *-tŭ*, Lith. *-t-*, *-ti-*, Gmc. *funxstiz* (cf. Goth. *fūst*) O.Ir. *bissi*, O.Welsh *bys*, but also **-ts**, as, **dekrń-ts**, Gk. *δεκάς*, Lat. **dekents>*dekients*, spreading **j-ŋts* as new formant, into Gk. *πεντάς*, then *τριάς*, etc. Lat. **quinquens>quinqüens*, then *triēns*, etc; cf. e.g. neuter plurals **wīkmtī** (interpreted as dual), “a group of two decades, double decads”, twenty, **trīkmta**, “triple decads”, thirty, and so on.

4. Proportional or Relative numerals express how many times more (or less) one thing is than another; they are made as follows:

a. in **-plós**, as **smpłós**, *simple*, **dwiplós**, *two-fold, double, twice as much, twice as large*, **triplós**, *three-fold, triple*.

NOTE. For **dwi-plos**, cf. Lat. *duplus*, Hom. Gk. f. acc. *diplén* (<*dwi-plá-m*) Umbr. *dupla*, Goth. *twēi-fls*, O.H.G. *zwī-fal*, “doubt”, O.Ir. *diabul*, maybe Av. *bi-fra-*, “comparison”, Lyc. B *dwiplē*. **sm-plos** is found in Gk. *ἁ-πλός*, Lat. *simplus*, **tri-plos** is found in Gk. *τριπλοῦς*, Lat. *tripplus*, Umb. *tripler*. For **-plos** (cf. Arm. *-hal*), a connection with PIE **pel-**, *fold*, is usually assumed.

b. in **-plks**, as, **dwiplks**, “with two folds”, **duplex**, **triplks**, “with three folds”.

NOTE 2. For **plk-**, also reconstructed as from root **pel-**, cf. Lat. *-plicare*, Gk. *plekō* <**pl-ek*, ‘to fold’. For **dwiplks**, cf. Lat. *duplex*, Gk. *δίπλαξ*, Umbr. *tuplak*.

c. with verbal adjective **-plťós**, *folded*, is used to denote something divided in *n* parts; as, **dwiplťós**, *an object folded in two*.

NOTE. Cf. Gk. *-plasio-<*-platio-<*plť-jo-s*, a derivative that could express ‘belonging to the class of objects folded in two’ (Gvozdanović, 1992); maybe also here i-stem O.Ir. *trilis<*triplťis?* For **dwiplťós**, cf. Gk. *διπλάσιος*, Ger. *zwifalt*. A similar form is in Gmc. **poltos*, *fold*.

d. with suffix **-dhā**, as **dwidhā**, *two-fold, divided in two parts*.

NOTE. cf. Skr. *duví-dha*, *dve-dha*, Gk. *διχθα* (<**di-tha*), and maybe also (with the meaning “half”) O.N. *twēdi*, O.Eng. *twæde*, O.H.G. *zwitaran*, O.Ir. *dēde*, Hitt. *dak-ša-an*.

6. PRONOUNS

6.1. ABOUT THE PRONOUNS

6.1.1. Pronouns are used as Nouns or as Adjectives. They are divided into the following seven classes:

1. Personal Pronouns: as, **egŏ́**, *I*.
2. Reflexive Pronouns: as, **se**, *himself*.
3. Possessive Pronouns: as, **ŋserós**, *our*.
4. Demonstrative Pronouns: as, **so**, *this, that*.
5. Relative Pronouns: as, **jŋs**, *who*.
6. Interrogative Pronouns: as, **qis?** *who?*
7. Indefinite Pronouns: as, **qis**, *anyone*.

6.1.2. Pronouns have a special declension.

6.2. PERSONAL PRONOUNS

6.2.1. The Personal pronouns of the first person are **egŏ́**, *I*, **wejes**, *we*; of the second person, **tū**, *thou*, **juwes**, *you*. The personal pronouns of the third person - *he, she, it, they* - are wanting in Indo-European, an anaphoric (or even a demonstrative) being used instead.

NOTE. IE III had no personal pronouns for the third person, like most of its early dialects. For that purpose, a demonstrative was used instead; as, from **ki**, **id**, cf. Anatolian *ki*, Gmc. *khi-*, Lat. *cis-*, *id*, Gk. *ekeinos*, Lith. *sis*, O.C.S. *si*, etc. It is this system the one used in Modern Indo-European; although no unitary form was chosen in Late PIE times, the general pattern (at least in the European or North-Western dialects) is obvious.

6.2.2. Since every finite verb form automatically indicates de ‘person’ of the verb, the nominal pronoun forms are already adequately marked.

In comparison with the Orthotonic forms, often strengthened by particles, the special Enclitic forms feature the minimal word stem and may be used in multiple cases.

6.2.3. The Personal (Non-Reflexive) Pronouns are declined as follows:

A GRAMMAR OF MODERN INDO-EUROPEAN

1st PERSON

	Singular <i>eg-, me-</i>		Plural <i>we-, no-</i>	
	Orthotonic	Enclitic	Orthotonic	Enclitic
NOM.	eg(h)óm, egó, I		wejes, ŋsmés, we	
ACC.	mewóm, me	me	ŋsmé, nōns, us	nos
GEN.	mene, of me	moi	ŋseróm, of us	nos
DAT.	meghei, meghjom	moi	ŋsméi, nosbhos	nos
LOC.	mei		ŋsmí, nosi	
INS.	mojo		nosbhis	
ABL.	med		ŋsméd	

2nd PERSON

	Singular <i>tu-, te-</i>		Plural <i>ju-, we-</i>	
	Orthotonic	Enclitic	Orthotonic	Enclitic
NOM.	tū, tu, thou		juwes, jusrés, you	
ACC.	tewóm, thee	t(w)e	jusré, wōns, you	wos
GEN.	tewe; of thee	t(w)oi	wesróm, of you	wos
DAT.	tebhei, tebhjo	t(w)oi	jusréi, wosbhos	wos
LOC.	t(w)ei		jusrí, wosi	
INS.	t(w)ojo		wosbhis	
ABL.	t(w)ed		jusréd	

NOTE. 1) For 1st P. Nom. **eghóm** (<*egh₂-óm), emphatic from **egó** (<*eg-óh₂), cf. O.Ind. *ahám*, Av. *azəm*, Hom.Gk. *εγω*, Ven. *ehom*. 2) Enclitics **moi**, **mei**, and **t(w)oi**, **t(w)ei**, are found in Gen., Dat. and Loc., but they are deliberately specialized in this table. 3) 1st P. Dat. often found reconstructed as **mebhi/mebhei**, following the 2nd P. **tebhei/tebhi**. 4) **-es** endings in Nom. pl., **ŋsmés**, **(j)usrés** (<*jusrés?) attested in Att.-Ion. Gk. and Gothic. 5) An older **ju(s)wes** is behind the generally reconstructed Nom. **jūs**. 6) Zero-grade forms in **jus-** are also found as **us-** (from **wes-**? cf. Goth. *izwis*<*uswes?). 7) Possibly Accusatives **jusré**<*jusrēm<*jusrēns, and **ŋsmé**<*ŋsmēm<*ŋsmēns. 8) Probably Acc. Pl. **nos-m-s*→**nōns** and **wos-m-s*→**wōns**. 9) Gen. **nōsom**, **wōsom**, is also attested. 10) Osc.-Umb., O.Ind. variant (orthotonic) series of Acc. Sg. in **-m**, as **mēm(e)**, **twēm**, **tewem**, **usóm**, **s(w)ēm**. Dual forms (in *-h₁) are in Nom. for the 1st P. **wē** or **nō**, for the 2nd P. **wō**. For detailed etymologies, see Appendix III.2.3 or online at <dnghu.org>.

For the Personal Pronouns of the third person singular and plural, the anaphoric **i-** is used. See §6.5 for more details on its use and inflection.

a. The plural **wejes** is often used for the singular **egō**; the plural **juwes** can also be so used for the singular **tū**. Both situations happen usually in formal contexts.

b. The forms **nseróm**, **wesróm**, etc., can be used partitively:

óinosqisqe nseróm, *each one of us*.

wesróm oljom, *of all of you*.

c. The genitives **mene**, **tewe**, **nseróm**, **wesróm**, are used objectively:

es mnāmōn nseróm, *be mindful of us*.

6.3. REFLEXIVE PRONOUNS

6.3.1. Reflexive Pronouns are used in the accusative and the oblique cases to refer to the subject of the sentence or clause in which they stand; as, **se lubhéjeti**, *he/she loves himself/herself*; **sewe bhāmi**, *I talk about (of) me*, and so on.

a. In the first and second persons, the oblique cases of the personal pronouns were later commonly used as Reflexives: as, **me widējō** for **se widējō**, *I see myself*; **nos perswādējomos** for **se perswādējomos**, *we persuade ourselves*, etc.

b. The Reflexive pronoun of the third person has a special form used only in this sense, the same for both singular and plural. It is thus declined:

se, *-self*

ACC.	se , <i>myself, yourself, himself/ herself/ itself, ourselves, yourselves, themselves</i> .
GEN.	sewe , soi , <i>of myself, yourself, himself/ herself/ itself, ourselves, etc.</i>
DAT.	sebhei , soi , <i>to myself, yourself, himself/ herself/ itself, ourselves, etc.</i>
LOC.	sei , <i>in/ with myself, yourself, himself/ herself/ itself, ourselves, etc.</i>
ABL.	swed , <i>by/ from/ etc. myself, yourself, himself/ herself/ itself, ourselves, etc.</i>

NOTE. Particular IE languages show an old **swoi** and **swe**, cf. Gk. Lesb. $\phi\epsilon$. According to J.T. Katz precisely this **swe** is regarded as ancient and **se** as secondary. In contrast, G.E. Dunkel connects **se/soi**, which he considers more ancient, with the demonstrative pronoun **so**.

6.4. POSSESSIVE PRONOUNS

6.4.1. From the bases of the personal pronouns, the oldest Possessive Pronouns seem to have been **(e)mos**, *mine*, **ṛsmós**, *ours*, **t(e)wos**, *thine*, **usmós**, *yours*, **s(e)wos**.

NOTE. So e.g. in Gk. *emós* (<**emós**>), *ammos*, *sós*, *ummos*, *hos*, Av. *ma-*, *θwa-*, O.Ind. *tva-*. Variants exist in **twos/tewós** (as Gk. *tefós*, Lat. *tuus*), **swos/sewós** (as Gk. *hefós*, Lat. *suus*).

6.4.2. The common Late PIE Possessives were formed from the same bases with suffixes **-(i)jo-** in the singular, **-(t)ero-** in the plural; as, **méwijos**, **menjos**, *my*, **ṛserós**, *our*, **téwijos**, *thy*, **userós**, *your*, **séwijos**.

NOTE. For such common PIE forms, similar to the genitives of the personal pronouns (v.s.), cf. Gk. *ēméteros* (<**ṛsmé-tero-**>), *uméteros* (<**usmé-tero-**>), O.Lat. *noster* (<**nos-tero-**>) *uoster* (<**wos-tero-**>), Goth. *unsara-*, (<**ṛs-ero-**>), *izwara-* (<**wesw-ero-**>?), etc. all used as possessive pronouns; for the singular, cf. Lat. *meus*, O.C.S. *moŭi*, Goth *meina-*, etc. O.Ind. *madīya-*, *tvađīya*, etc. were formed from the ablatives *mad*, *tvađ*, etc., while possessives *mamaka-*, *asmāka-*, *jusmāka-*, were made from the genitives. See Szemerényi (1970), Adrados (1998), Meier-Brügger (2003).

6.4.3. Possessives are declined like adjectives of the first type, in **-os**, **-ā**, **-om**.

NOTE. PIE **s(e)wos**, **séwijos**, are only used as reflexives, referring to the subject of the sentence. For a possessive of the third person not referring to the subject, the genitive of a demonstrative (anaphoric) must be used. Thus, **paterm séwijom chenti**, (*he/she/it*) *kills his [own] father*; but **paterm esjo chenti**, (*he/she/it*) *kills his [somebody (m.) else's] father*.

6.4.4. Other forms are the following:

a. A possessive **qosjos**, **-ā**, **-om**, *whose*, is formed from the genitive singular of the relative or interrogative pronoun **qo-** (v.i.). It may be either interrogative or relative in force according to its derivation, but is usually the former.

b. The Reciprocals *one another*, *each other*, were expressed like the distributives (v.s.); as, **oinos oinos**, **áleros áleros**, **aljos aljos**, **onjos onjos**, etc. For example,

áleros álerosjo prō autons énkonti, *they drive each other's cars* (*one drives the car of the other*),

aljōs aljons lubhējonti, *they love each other* (*the ones love the others*).

NOTE. Cf. Hitt. '1-aš 1-an ku-w-aš-ki-it', "one killed the other continuously", O.Ind. *anyonya-*, Av. *aniīō.aniia-*, Chor. *nywny*, Lat. *alterius alterum*; **oinos álerom**, as in Latin *unus alterum*, Eng. *one another*, Ger. *einander*, etc. Reciprocity is one of the principal meanings of middle voice

forms in Sanskrit and Ancient Greek, and also in Latin -r forms, therefore assumed to have been inherited from the proto-language (cf. Hirt 1934, Georgiev 1935). For *mutually, each other, reciprocally*, an adv. **mistós** (<*mit-to-), Ø-grade from **meit-**, *change*, exists; cf. O.Ind. *mithás*, Goth. *missō*, Lat. *mūtuum*, O.Ir. *mis-*, *mith*, Bal. **meit-u-*, O.C.S. *мѣтъ*, *mētā*; e.g. Goth. ‘*ni liugid iswis misso*’, “do not lie to one another”.

6.5. ANAPHORIC PRONOUNS

6.5.1. Anaphora is an instance of an expression referring to another, the weak part of the deixis. In general, an anaphoric is represented by a pro-form or some kind of deictic. They usually don’t have adjectival use, and are only used as mere abbreviating substitutes of the noun.

NOTE. Old anaphorics are usually substituted in modern IE dialects by demonstratives.

They are usually integrated into the pronoun system with gender; only occasionally some of these anaphorics have been integrated into the Personal Pronouns system in Indo-European languages.

6.5.2. Modern Indo-European has a general Anaphoric pronoun, **is**, **ja**, **id**, an old demonstrative pronoun with basis on PIE root **i-** with ablaut **ei-**.

NOTE. PIE root **i-** is also the base for common PIE relative **jo-**. Demonstrative **is**, **ja/ī**, **id**, with anaphoric value, “he/she/it”, in Italic (e.g. Lat. *is*, *ea*, *id*), Germanic (e.g. O.H.G. *ir*, *er/iz*, *ez*), Baltic (e.g. Lith. *jis/ji*), Greek (e.g. Cypriot *in*), Indo-Iranian (e.g. Skr. *ay-ām*, *iy-ām*, *i-d-ām*).

6.5.3. The other Demonstrative pronoun, **so**, **sā**, **tod**, functions as anaphoric too, but tends to appear leading the sentence, being its origin probably the relative. They are also used for the second term in comparisons.

NOTE. Demonstrative **so**, **sā**, **tod** is also widely attested in Celtic (e.g. O.Ir. *-so/-d*), Italic (e.g. Lat. *is-te*, *is-ta*, *is-tud*), Germanic (e.g. Goth. *sa*, *sō*, *þata*, O.Eng. *sē*, *sēo*, *þæt*, O.H.G. *der*, *die*, *daz*), Baltic (e.g. Lith. *tàs*, *tà*), Slavic (e.g. O.C.S. *tŭ*, *ta*, *to*), Alb. *ai*, *ajo*, Gk. *ho*, *hē*, *tó*, Indo-Iranian (e.g. Skr. *sá*, *sā*, *tát*), Toch B *se*, *sā*, *te*, Arm. *ay-d*, Hitt. *ta*. Modern IE languages have sometimes mixed both forms to create a single system, while others maintain the old differentiation.

6.6. DEMONSTRATIVE PRONOUNS

6.6.1. The function of Demonstrative pronouns, *deixis*, includes an indication of position in relation to the person speaking. It is possible to express a maximum of four (generally three) different degrees of distance; as, *I-deixis* (here, near the speaker), *thou-*

deixis (there, near the person addressed), *that-deixis* (there, without a particular spatial reference), *yonder-deixis* (yonder, over there).

6.6.2. The Demonstrative Pronouns **so**, *this*, *that*, and **is**, *this one*, *that one*, “*the (just named)*”, are used to point out or designate a person or thing for special attention, either with nouns, as Adjectives, or alone, as Pronouns, and are so declined:

so, *sā*, **tod**, *this*, *that*

	<i>Singular</i>			<i>Plural</i>		
	<i>m.</i>	<i>n.</i>	<i>f.</i>	<i>m.</i>	<i>n.</i>	<i>f.</i>
NOM.	so	tod	sā	toi	tā	tāi
ACC.	tom		tām	tons		tāns
GEN.	tosjo		tesjās	toisom		tāsom
DAT.	tosmōi		tesjāi	toibhos/toimos		tābhos/tāmos
LOC.	tosmi		tesjāi	toisu		tāsu
INS.	toi		tesjā	tōis		tābhis/tāmis
ABL.	tosmōd		tesjās	toibhos/toimos		tābhos/tāmos

NOTE. Different variants are observed in the attested dialects: 1) Nom. **so** is also found as **sos** in Old Indian, Greek and Gothic, and as **se** in Latin (cf. Lat. *ipse*). 2) Nom. **sā** is found as **sja/sī** in Gothic and Celtic. 3) Nom. Pl. **tāi** is general, while **sāi** is restricted to some dialects, as Attic-Ionic Greek, possibly (Meier-Brügger) from original *f. *tā* and *m. *to*. However, linguists like Beekes or Adrados reconstruct the Nominative form in **s-** as the original Proto-Indo-European form. 4) The Instrumental singular forms are difficult to reconstruct with the available data.

is, **ja**, **id**, *this one*, *that one*

	<i>Singular</i>			<i>Plural</i>		
	<i>m.</i>	<i>n.</i>	<i>f.</i>	<i>m.</i>	<i>n.</i>	<i>f.</i>
NOM.	is	id	ja/ī	eyes	ī/ja	jās
ACC.	im		jam/īm	ins		jāns
GEN.	esjo		esjās	eisom		
DAT.	esmōi		esjāi	eibhos/eimos		
LOC.	esmi		esjāi	eisu		
INS.	ei		esjā	eibhis/eimis		
ABL.	esmōd		esjās	eibhos/eimos		

NOTE. Some emphatic forms exist; as, **ejóm** for **is**, **idóm** for **id**, **ijóm** for **ja**.

6.6.2. Distance degrees in Demonstratives might be classified as follows: **kos**, **kā**, **kod** (also **ghei-ke**, **ghāi-ke**, **ghod-ke**), *I-deixis*, “*this here*”, **oisos**, **oisā**, **oisom**, *thou-deixis*, “*this there*”, general **so**, **tod**, **sā**, *that-deixis*; **elne**, **elnā**, **elnod**, *yonder-deixis*.

6.6.3. Deictic particles which appear frequently with demonstrative pronouns include -**ke/-ko-**, *here*; -**ne/-no-**, *there*; -**wo-**, *away, again*.

NOTE. For PIE **i-**, **se-**, *he*, cf. Lat. *is*, O.Ind. *saḥ*, *esaḥ*, Hitt. *apā*, Goth. *is*, O.Ir. *(h)í*; for **(e)ke**, **ghei-(ke)**, **se-**, **te-**, *this (here)*, cf. Lat. *hic* (<**ghe-i-ke*), Gk. *οὗτος*, O.Ind. *ay-am*, *id-am*, *esaḥ*, Hitt. *kā*, *eda* (def.), Goth. *hi-*, *sa(h)*, O.Ir. *sin*, O.Russ. *ceŭ*, *əmom*; for **oi-se**, **is-te**, **ene**, *this (there)*, cf. Lat. *iste*, Gk. *οἷος* (<**oihos*), O.Ind. *enam* (clit.); for **el-ne**, *that*, cf. Lat. *ille* (<**el-ne**), *ollus* (<**ol-nos**), Gk. *ἐκεῖνος*, O.Ind. *a-sau*, *u-*, Goth. *jains*. Common derivatives **kei**, *here* (Loc. from **ke**), **num-ke**, *now* (from **nū**, *now*), or **i-dhei**, *there*, **tom-ke**, *then* (from **tom**, *then*). See Appendix III.2.2 for more information.

6.7. INTERROGATIVE AND INDEFINITE PRONOUNS

6.7.1. INTRODUCTION

1. There are two forms of the Interrogative-Indefinite Pronoun in Modern Indo-European, and each one corresponds to a different class in our system, **qi-** (with ablaut **qei-**) to the Substantive, and **qo-** to the Adjective pronouns.

SUBSTANTIVE	ADJECTIVE
qis bhéreti? <i>who carries?</i>	qos wīrós bhéreti? <i>what man carries?</i>
qid widéjesi? <i>what do you see?</i>	qom autom widéjesi? <i>which car do you see?</i>

NOTE. In the origin, **qi-/qo-** was possibly a noun which meant “the unknown”, and its interrogative/indefinite sense depended on the individual sentences. Later both became pronouns with gender, thus functioning both as (orthotonic) interrogatives or (enclitic) indefinites (Szemerényi, 1970). The form **qi-** is probably the original independent form (compare the degree of specialization of **qo-**, further extended in IE dialects), for which **qo-** could have been originally the o-grade form (Beekes 1995, Adrados 1998). The Substantive Interrogative pronoun in PIE was **qi-**, whereas **qo-** was used to fill adjectival functions (Meier-Brügger, 2003), hence MIE Substantive-**qi** and Adjective-**qo**. Some IE dialects have chosen the o-stem only, as Germanic, while some others have mixed them together in a single paradigm, as Indo-Iranian, Balto-Slavic or

Italic. Cf. Gmc. *khwo-* (cf. Goth. *hwas*, O.N. *hverr*, O.S. *hwe*, O.E. *hwā*, Dan. *hvo*, O.Fris. *hwa*, O.H.G. *hwēr*), Lat. *qui, quae, quod; quis, quid*, Osc. *pisi*, Umb. *púí, svepis*, Gk. *tis*, Sktr. *kaḥ*, Av. *ko*, O.Pers. *čiy*, Pers. *ki*, Phryg. *kos*, Toch. *kus/kūse*, Arm. *ov, inč'*, Lith. *kas*, Ltv. *kas*, O.C.S. *kuto*, Rus. *kto*, Pol. *kto*, O.Ir. *ce, cid*, Welsh *pwyl*, Alb. *kush*, Kam. *kâča*; in Anatolian, compare Hitt. *kuiš*, Luw. *kui-*, Lyd. *qi-*, Lyc. *tike*, and Carian *kuo*.

2. The Substantive Interrogative Pronoun **qis?** *who?*, **qid?** *what?*, is declined like **i-**:

	<i>Singular</i>			<i>Plural</i>		
	<i>m.</i>	<i>f.</i>	<i>n.</i>	<i>m.</i>	<i>f.</i>	<i>n.</i>
NOM.	qis		qid	qejes		qī/qja
ACC.	qim			qins		
GEN.	qesjo			qeisom		
DAT.	qesmei			qeibhos/qeimos		
LOC.	qesmi			qeisu		
INS.	qī			qeibhis/qeimis		
ABL.	qesmōd			qeibhos/qeimos		

NOTE. PIE **-qe**, *and*, is derived from this root and was originally a modal adverb meaning “*as, like*”; e.g. **patér mātér-qe**, *father like mother*. Szemerényi (1970). Similarly, **jo-** is probably behind Hit. *-ya*.

3. The Adjective Interrogative Pronoun, **qos?** **qā?** *who (of them)?*, **qod?** *what kind of? what one?*, is declined throughout like the Relative:

	<i>Singular</i>			<i>Plural</i>		
	<i>m.</i>	<i>f.</i>	<i>n.</i>	<i>m.</i>	<i>f.</i>	<i>n.</i>
NOM.	qos	qā	qod	qoi	qās	qā
ACC.	qom	qām		qons	qāns	
GEN.	qosjo			qoisom		
DAT.	qosmōi			qoibhos/qoimos		
LOC.	qosmi			qoisu		
INS.	qoi			qoibhis/qoimis		
ABL.	qosmōd			qoibhos/qoimos		

4. The Indefinite Pronouns **qi-**/**qo-**, *any one, any*, are declined like the corresponding Interrogatives.

<i>SUBSTANTIVE</i>	qis , <i>anyone</i> ; qid , <i>anything</i>
<i>ADJECTIVE</i>	qos , qā , qod , <i>any</i>

5. PIE had other interrogative or relative particle, **me-**/**mo-**.

NOTE. It survived in Celtic (e.g. Bret *ma*, *may*, “*that*”), Anatolian (Hit. *masi*, “*how much*”), and Tocharian (Toch. A *mānt*, “*how*”).

6.7.2. COMPOUNDS

1. The pronouns **qi-** and **qo-** appear in different combinations:

a. The forms can be repeated, as in substantive **qisqis**, *anyone*, **qidqid**, *anything*, or adjective **qāqos**, **qāqā**, **qāqod**, *whoever*.

NOTE. For this use, similar to the distributive ones, e.g. EIE **qāqos**, *whoever*, Gaul. *papon*, O.Ir. *cāch*, O.C.S. *kakŭ*, Lith. *kók(i)s*, and also Gk. *κατερος, εκαστος*, O.Ind. *pratieka*, Hitt. *kuissa*, Goth. *ainhvaþaruh*; for **qisqis**, *anyone*, cf. Gk. *τις, οστις*, O.Ind. *kim kid*, *kacit*, *kaścana*, *kopi*, Hitt. *kuis* *kuis*, *kuis-as* *kuis*, Lat. *quisquis*, *quīlibĕt*, *quīvis*, Goth. *hvazuh*, *hvarjizuh*, Arm. *in-ĉ*.

Other common PIE forms include (**sol**)**wos**, *all*, cf. Gk. *ολοι*, O.Ind. *visva*, *sarva*, Hitt. *hūmant-*, O.Ir. *u(i)le*; **enis**, *certain*, cf. Gk. *ενιαντον*, O.Ind. *ekaścana* Lat. *quīdam*; **ālteros**, **ōnteros**, *the other*, from **aljos**, **onjos**, *some other*, etc.

b. In some forms the copulative conjunction **-qe** is added to form new pronouns, usually *universals*; as, **qiskomqe**, **qisimmoqe**, *whoever*. Indefinites **itaqe**, *and also*, **toqe**, *also*, **joqe**, *and*.

NOTE. Cf. Gk. *τις αν, τις εαν*, O.Ind. *yaḥ kaś cit*, *yo yaḥ*, *yadanga*, Hitt. *kuis imma*, *kuis imma* *kuis*, *kuis-as imma* (*kuis*), Lat. *quiscumque*, Goth. *sahvazuh saei*, Ger. *wer auch immer*, O.Ir. *cibé duine*, Russ. *кто бы ни*;

c. Some forms are made with prefixes, like (substantive) **edqis**, *some(one) among many*, **edqid**, *something*, (adjective) **edqos**, **edqā**, **edqod**, *whether, some*. Other forms with suffixes; as, **qéjespejoi**, *some*.

NOTE. For **(ed)qis**, cf. Gk. *τις*, O.Ind. *anyatama*, Hitt. *kuis ki*, Lat. *ecquis, quis, aliquis*, Goth. *hvasun*, Russ. *edvá*, O.Ir. *nech, duine*. For **qéjespejoi** cf. Gk. *οιτινες*, O.Ind. *katipaya*, Hitt. *kuis ki*, Russ. *несколько*.

d. The negatives are usually composed with negation particles, usually **ne**; as, **neqis**, *nobody*, **neqid**, *nothing*, **neqom**, *never*; but **neqos**, *someone*.

NOTE. For **neqis**, *nobody, no one*, cf. Gk. *ουδεις*, O.Ind. *na kaḥ*, Hitt. *UL kuiski*, Goth. *(ni) hvasun*, Gaul. *nepon*, O.Ir. *ní aon duine*, Lat. *nec quisquam*, Russ. *никто*.

e. It is also found as in compound with relative **jo-**; as, **josqis**, *anyone*, **jodqid**, *anything*, cf. Gk. *hóstis hótti*, Skr. *yás cit, yác cit*.

f. With identity or oppositive forms; as, **qidpe**, *indeed*, **aljudhei**, *elsewhere*.

2. There are compounds with numerals; as, **ghei-sem**, *exactly so, in this one way*.

NOTE. Cf. Hitt. *ki-ššan*, ‘thus, in the following way’, from **ghei-sem**, ‘in this one way, exactly so’, also found in *eni-ššan*, ‘thus, in the manner mentioned’, *apeni-ššan*, ‘thus, in that way’, etc. For **ne-oinom**, ‘no one’, *none, not any*, cf. Eng. *none*, Ger. *nein*, maybe Lat. *nōn*. Also, Latin loan *nūllus* (<**ne-oinolos**, ‘not any’), *none, null*.

3. Reflexives are found in **jota sei**, *alike, nearly*, **sweike**, *thus*, **swāi**, *so*, etc.

6.7.3. CORRELATIVES

1. Many Pronouns, Pronominal Adjectives and Adverbs have corresponding demonstrative, relative, interrogative, and indefinite forms in Proto-Indo-European. Such parallel forms are called Correlatives, and some are shown in the following table:

<i>Demonstrative</i>	<i>Relative</i>	<i>Interrogative</i>
so, sā, tod	jos, jā, jod	qis? qid?, qos? qā? qod?
<i>this, that</i>	<i>who, which</i>	<i>who?, what? which?</i>
ita	jota	qota?
<i>so</i>	<i>so</i>	<i>how?</i>
tālis	jālis	qālis?
<i>so constituted</i>	<i>as</i>	<i>of what sort?</i>
tām	jām	qām?
<i>that way</i>	<i>which way</i>	<i>how, in what way?</i>

tom, todá <i>then</i>	jom <i>when</i>	qom? qodá? <i>when?</i>
idhei, tor <i>here, there</i>	jodhei <i>where</i>	qor? qodhei? <i>where?</i>
toi <i>thither</i>	joi <i>whither</i>	qoi?qote? <i>whither?</i>
totrōd <i>from there</i>	jomde <i>wherefrom</i>	qomde? qotrōd? <i>from which?</i>
totjos <i>so many</i>	jotjos <i>as many</i>	qotjos? <i>how many?</i>
toti <i>so often</i>	joti <i>as often</i>	qoti? <i>how often?</i>
táwn̄tos <i>so much/large</i>	jáwn̄tos <i>as much/large</i>	qáwn̄tos? <i>how much/large?</i>
to(s)jos <i>of whom/which</i>	josjo <i>whose</i>	qosjos? <i>pertaining to whom/what?</i>
íteros <i>(an)other</i>	jóteros <i>which (of two)</i>	qóteros? <i>which (of two)?</i>
tori <i>therefore</i>	jori <i>wherefore</i>	qori? <i>why?</i>

NOTE. Latin *(c)ibī*, *(c)ubī* is frequently reconstructed as a conceivable PIE **ibhi*, **qobhi*, but it is not difficult to find a common origin in PIE *i-dhei*, *qo-dhei* for similar forms attested in different IE dialects; cf. Lat. *ubī*, Osc. *puf*, O.Ind. *kuha*, O.Sla. *kude*, etc. Relative forms in italics are reconstructed following the general paradigm; some relatives were made with the interrogative **qo-**, mainly used with this value in Anatolian and Northern IE, especially in the Western core; as, int. **qām?** *how, in what way?* and rel. **qām**, *which way*, cf. Lat. *quam*, Arm. *k'an*, v.i. For more information, see Appendix III.2.1 and <http://dnghu.org/indoeuropean_pronouns.pdf>.

6.8. RELATIVE PRONOUNS

6.8.1. There are two general pronominal stems used as relative pronouns, one related to the anaphorics (**jo-**), and one to the interrogative-indefinites (**qi-/qo-**).

NOTE. The interrogative pronoun is also used as indefinite in all IE languages. In some it is used additionally as relative, without differentiation in Anatolian, with it in Italic (e.g. Lat. *quo-* opposed to *quis*), Tocharian, later Celtic and Germanic; the other group, comprising Aryan, Greek, Phrygian and Slavic kept using the PIE relative pronoun **jo-** (<*Hjo-), from the anaphoric root **i-**; cf. Gk. *hós, hē, ho*, Skr. *yás, yā, yad*, Av. *ya-*, Phryg. *ios*, Sla. *i-že*, Cel. *io*, Goth *ja-bai*, maybe Hitt. *ya*, Toch. A *yo*. Despite Szemerényi (1970), who considers it mainly a Southern innovation, only Proto-Italic shows no traces of the common PIE relative, and because of that it is generally considered lost in that branch, not an innovation of the others; hence its specialized use in MIE. Relatives **qi-/qo-** are found in Anat., Bal., Toch., Lat. and Gmc. It is used for indirect interrogatives, cf. O.H.G. *ni weistu hwaz ih sagen thir*, ‘you don’t know what I say to you’; and for indefinites, cf. Lat. *pecuniam quis nancitor habeto*, ‘fortune, who acquires it own it’.

6.8.2. MIE general Relative Pronoun **jós, jā, jod**, the o-stem derivative from **i-**, is inflected like **so, sã, tod**.

6.9. OTHER PRONOUNS

6.9.1. Identity pronouns are those generally called intensifiers or emphatic pronouns, expressions like Eng. ‘*x-self* (*himself, herself, myself, oneself*, etc.), Ger. *selbst, selber*, Lat. *ipse*, Ita. *stesso* or Russ. *sam*.

Proto-Indo-European formations that function as identity pronouns stem from a common **epe, self**, as, **se epse, s(w)el (e)pe, -self**.

NOTE. cf. Hitt. *apāsila*, O.Lat. *sapsa, sumpse, ipse*, Goth. *silba*, O.Ir. *fessin, fadessin* (>*féin*), Russ. *сам*.

6.9.2. Oppositive pronouns are usually derived from suffix **-tero-**; as, **qóteros?** *which of two?* **íteros**, *another*, **álteros**, *the other one*, **próteros**, *first (of two)*.

NOTE. For **qóteros**, cf. Lat *uter*, O.Eng. *hwæðer* (Eng. *whether*), Lith *kataràs*, OCS *koteryŭ*, Gk. *póteros*, Skr. *katará-*; from this word is common Latin loan ‘*neuter*’, MIE **neqóteros**, ‘*neither one nor the other*’. For **snterí**, *missing*, cf. Gmc. **sun-dr-* (e.g. Ger. *sonder*), Gk *ατερ*, O.Ind. *sanutar*, from **sni**, *apart*, cf. Lat. *sine*, ‘*without*’, O.Sla. *svene*, O.Ir. *sain*, ‘*different*’.

6.9.3. Adjectival pronouns include identity as well as oppositive pronouns; as, **somós**, *the same*, or **aljos, onjos**, *the other*.

NOTE. Such nominal forms, properly categorized as vaguely belonging to the field of pronouns, receive pronominal inflection. For adj. **somós**, *equal, same*, cf. Gmc. **samaz*, Gk. *ὁμός, ὁμοῦ, ὁμαλός*, Skr. *samaḥ*, Av. *hama*, O.C.S. *самъ*, O.Ir. *som*.

7. VERBS

7.1. INTRODUCTION

7.1.1. VOICE, MOOD, TENSE, PERSON, NUMBER

1. The inflection of the Verb is called its Conjugation.
2. Through its conjugation the Verb expresses Voice, Mood, Tense, Person and Number.
3. The Voices are two: Active and Middle (or *Middle-Passive*).
4. The Moods were up to five: Indicative (plain statement of objective fact) and Imperative (commands) are the oldest ones, while the Optative (intentions or hoped for action) is from Late PIE, and still more recent the Subjunctive (potentiality, possibility); an Injunctive (perhaps mild commands or prohibitions) is also reconstructed.
5. The General Tenses are three, *viz.*:
 - a. The Present.
 - b. The Past or Preterite.
 - c. The Future.

NOTE. The Future Stem is generally believed to have appeared in Late PIE, not being able to spread to some dialects before the general split of the proto-languages; the distinction between a Present and a Future tense, however, is common to all IE languages.

6. The Aspects were up to three:
 - a. For continued, not completed action, the Present.
 - b. For the state derived from the action, the Perfect.
 - c. For completed action, the Aorist.

NOTE 1. There is some confusion on whether the Aorist (from Gk. *αοριστος*, “*indefinite or unlimited*”) is a tense or an aspect. This reflects the double nature of the aorist in Ancient Greek. In the indicative, the Ancient Greek aorist represents a combination of tense and aspect: past tense, perfective aspect. In other moods (subjunctive, optative and imperative), however, as well as in the infinitive and (largely) the participle, the aorist is purely aspectual, with no reference to

any particular tense. Modern Greek has inherited the same system. In Proto-Indo-European, the aorist was originally just an aspect, but before the split of Late PIE dialects it was already spread as a combination of tense and aspect, just as in Ancient Greek, since a similar system is also found in Sanskrit.

NOTE 2. The original meanings of the past tenses (Aorist, Perfect and Imperfect) are often assumed to match their meanings in Greek. That is, the Aorist represents a single action in the past, viewed as a discrete event; the Imperfect represents a repeated past action or a past action viewed as extending over time, with the focus on some point in the middle of the action; and the Perfect represents a present state resulting from a past action. This corresponds, approximately, to the English distinction between “I ate”, “I was eating” and “I have eaten”, respectively. Note that the English “I have eaten” often has the meaning, or at least the strong implication, of “I am in the state resulting from having eaten”, in other words “I am now full”. Similarly, “I have sent the letter” means approximately “The letter is now (in the state of having been) sent”. However, the Greek, and presumably PIE, perfect, more strongly emphasizes the *state* resulting from an action, rather than the action itself, and can shade into a present tense.

In Greek the difference between the present, aorist and perfect tenses when used outside of the indicative (that is, in the subjunctive, optative, imperative, infinitive and participles) is almost entirely one of grammatical aspect, not of tense. That is, the aorist refers to a simple action, the present to an ongoing action, and the perfect to a state resulting from a previous action. An aorist infinitive or imperative, for example, does *not* refer to a past action, and in fact for many verbs (e.g. “kill”) would likely be more common than a present infinitive or imperative. In some participial constructions, however, an aorist participle can have either a tensal or aspectual meaning. It is assumed that this distinction of aspect was the original significance of the Early PIE “tenses”, rather than any actual tense distinction, and that tense distinctions were originally indicated by means of adverbs, as in Chinese. However, it appears that by Late PIE, the different tenses had already acquired a tensal meaning in particular contexts, as in Greek, and in later Indo-European languages this became dominant.

The meanings of the three tenses in the oldest Vedic Sanskrit, however, differs somewhat from their meanings in Greek, and thus it is not clear whether the PIE meanings corresponded exactly to the Greek meanings. In particular, the Vedic imperfect had a meaning that was close to the Greek aorist, and the Vedic aorist had a meaning that was close to the Greek perfect. Meanwhile, the Vedic perfect was often indistinguishable from a present tense (Whitney 1924). In the moods other than the indicative, the present, aorist and perfect were almost indistinguishable from each other. The lack of semantic distinction between different grammatical forms in a literary language often indicates that some of these forms no longer existed in the spoken language of the time. In

7. Verbs

fact, in Classical Sanskrit, the subjunctive dropped out, as did all tenses of the optative and imperative other than the present; meanwhile, in the indicative the imperfect, aorist and perfect became largely interchangeable, and in later Classical Sanskrit, all three could be freely replaced by a participial construction. All of these developments appear to reflect changes in spoken Middle Indo-Aryan; among the past tenses, for example, only the aorist survived into early Middle Indo-Aryan, which was later displaced by a participial past tense.

7. There are four IE Verbal Stems we will deal with in this grammar:

I. The Present Stem, which gives the Present with primary endings and the Imperfect with secondary endings.

II. The Aorist Stem, always Past, with secondary endings, giving the Aorist, usually in zero-grade, with dialectal augment and sometimes reduplication.

III. The Perfect Stem, giving the Perfect, only later specialized in Present and Past.

IV. The Future Stem, an innovation of Late PIE.

NOTE. From the point of view of most scholars, then, from this original PIE verbal system, the Aorist merged with the Imperfect Stem in Balto-Slavic, and further with the Perfect Stem in Germanic, Italic, Celtic and Tocharian dialects. The Aorist, meaning the completed action, is then reconstructed as a third PIE *tense-aspect*, following mainly the findings of Old Indian, Greek, and also – mixed with the Imperfect and Perfect Stems – Latin.

8. The Persons are three: First, Second, and Third.

9. The Numbers in Modern Indo-European are two: Singular and Plural, and it is the only common class with the name. It is marked very differently, though.

NOTE. The reconstructed Dual, as in nouns, whether an innovation or (unlikely) an archaism of Late Proto-Indo-European dialects, is not systematized in MIE, due to its limited dialectal spread and early disappearance

7.1.2. NOUN AND ADJECTIVE FORMS

1. The following Noun and Adjective forms are also included in the inflection of the Indo-European Verb:

A. Verbal Nouns existed in Proto-Indo-European, but there is no single common prototype for a PIE Infinitive, as they were originally nouns which later entered the

verbal conjugation and began to be inflected as verbs. There are some successful infinitive endings, though, that will be later explained.

NOTE 1. It is common to most IE languages that a special case-form (usually dative or accusative) of the verbal nouns froze, thus entering the verbal inflection and becoming infinitives. Although some endings of those successful precedents of the infinitives may be reproduced with some certainty for PIE, the (later selected) dialectal case-forms may not, as no general pattern is found.

NOTE 2. A common practice in Proto-Indo-European manuals (following the Latin tradition) is to name the verbs conjugated in first person present, e.g. **esmi**, *I am*, for the verb **es-**, *to be*, or **bherō** (probably from an older Athematic **bhermī**), *I carry*, for the verb **bher-**, *to carry*.

B. The Participles are older adjectives which were later included in the verbal inflection.

I. The oldest known is the Present Participle, in **-nt-**.

II. The Perfect Participle, more recent, shows multiple endings, as **-wes-/ -wos-**.

III. Middle Participles, an innovation in Late PIE, end in **-meno-**, **-mno-**; and also some in **-to-**, **-no-**, **-lo-**, **-mo-**, etc.

C. The Gerund and the Absolutive, not generalized in Late PIE, indicated possibility or necessity.

2. The Participles are used as follows:

A. The Present Participle has commonly the same meaning and use as the English participle in **-ing**; as, **bheronts**, *calling*, **sont**, *being*.

NOTE. Some questions about the participles are not easily conciled: in Latin, they are formed with **e** ending for stems in **-i-**; in Greek, they are formed in **o** and are consonantal stems. Greek, on the other hand, still shows remains of the thematic vowel in participles of *verba vocalia* **-ājont-**, **-ējont-**, etc. Latin doesn't.

B. The Perfect Participle has two uses:

I. It is sometimes equivalent to the English perfect passive participle; as, **tegtós**, *sheltered*, **klaustós**, *closed*, and often has simply an adjective meaning.

II. It is used with the verb **es-**, *to be*, to form the static passive; as, **gnōtós esti**, *it is known*.

NOTE. The static passive is a new independent formation of many Indo-European dialects, not common to Late PIE, but a common resource of North-West Indo-European, easily loan translated from Romance, Germanic and Balto-Slavic languages into Modern Indo-European as auxiliary verb *to be* + *perfect participle*.

C. The Gerundive is often used as an adjective implying obligation, necessity, or propriety (*ought* or *must*); as, **awisdhijendhos esti**, *he must be heard*.

NOTE. The verb is usually at the end of the sentence, as in Latin, Greek and Sanskrit. In Hittite, it is behind the particles (up to seven in succession). In Old Irish it was either at the beginning of the sentence or in second place after a particle. For more on this, see PIE Syntax.

7.1.3. VOICES

1. In grammar, Voice is the relationship between the action or state expressed by a verb and its arguments. When the subject is the agent or actor of the verb, the verb is said to be in the Active. When the subject is the patient or target of the action, it is said to be in the Passive.

2. The Active and Middle (or *Mediopassive*) Voices in Modern Indo-European generally correspond to the active and passive in English, but:

a. The Middle voice often has a reflexive meaning. It generally refers to an action whose object is the subject, or an action in which the subject has an interest or a special participation:

gnāskai (only middle), *I am born*.

wéstijontoi, *they dress (themselves), they get dressed*.

NOTE. This reflexive sense could also carry a sense of benefaction for the subject, as in the sentence “I sacrificed a goat (for my own benefit)”. These constructions would have used the active form of “sacrificed” when the action was performed for some reason other than the subject’s benefit.

b. The Mediopassive with Passive endings (in *-r*) is reserved for a very specific use in Modern Indo-European, the Dynamic or Eventive passives; as

moiros píngetor, *the wall is being painted, someone paints the wall*, lit. “*the wall paints* (+ impersonal mark)”.

stoighōs péwontor, *streets are being cleaned, someone cleans the streets*.

NOTE 1. The dynamic passive usually means that an action is done, while the static or stative passive means that the action was done at a point in time, that it is already made. The last is obtained in MIE (as usually in Germanic, Romance and Balto-Slavic dialects) with a periphrasis, including the verb **es**, *be*. Following the above examples:

moiros pigtósⁱ esti, *the wall (is) [already] painted*.

stoighōs pūtōs senti, *the streets (are) cleaned*.

ⁱ The infix **-n** is lost outside the Present Stem; thus, the Participle is not **pingtós**, but **pigtós**. Nevertheless, when the **n** is part of the Basic Stem, it remains. See the Verbal Stems for more details on the Nasal Infix.

NOTE 2. The Modern Indo-European Passive Voice endings (in **-r**) are older Impersonal and PIE Middle Voice alternative endings, found in Italic, Celtic, Tocharian, Germanic, Indo-Iranian and Anatolian, later dialectally specialized for the passive in some of those dialects. The concepts underlying modern IE Passives are, though, general to the Northern dialects (although differently expressed in Germanic and Balto-Slavic), and therefore MIE needs a common translation to express it. For the stative passive, the use of the verb **es-**, *to be*, is common, but dynamic passives have different formations in each dialect. The specialized Mediopassive dialectal endings seems thus the best option keeping thus tradition and unity, *v.i.*

c. Some verbs are only active; as, **esmi**, *be*, **edmi**, *eat*, or **dōmi**, *give*.

d. Many verbs are middle in form, but active or reflexive in meaning. These are called Deponents; as, **keimai**, *lie, lay*; **séqomai**, *follow*, etc.

7.1.4. MOODS

1. While the oldest PIE had possibly only Indicative and Imperative, a Subjunctive and an Optative were added in Late Proto-Indo-European, both used in the Present, Perfect and Aorist. Not all dialects, however, developed those new formations further.

2. The Imperative is usually formed with a pure stem, adding sometimes adverbial or pronominal elements.

3. Some common Subjunctive marks are the stem endings **-ā**, **-ē**, and **-s**, but it is more usually formed with the opposition Indicative Athematic vs. Subjunctive Thematic, or Indicative Thematic vs. Subjunctive Thematic with lengthened vowel.

4. The Optative is differentiated from the Subjunctive by its characteristic suffix **-jē/-ī-**; in thematic Tenses it is **-oi**, i.e. originally the same Subjunctive suffix added to the thematic vowel **-o-**.

5. The Moods are used as follows:

a. The Indicative Mood is used for most direct assertions and interrogations.

b. The Subjunctive Mood has many idiomatic uses, as in commands, conditions, and various dependent clauses. It is often translated by the English Indicative; frequently by means of the auxiliaries *may, might, would, should*; sometimes by the (rare) Subjunctive; sometimes by the Infinitive; and often by the Imperative, especially in prohibitions.

c. The Imperative is used for exhortation, entreaty, or command; but the Subjunctive could be used instead.

d. The Infinitive is used chiefly as an indeclinable noun, as the subject or complement of another verb.

7.1.5. TENSES OF THE FINITE VERB

1. The Tenses of the Indicative have, in general, the same meaning as the corresponding tenses in English:

a. Of continued action,

I. Present: **bherō**, *I bear, I am bearing, I do bear.*

II. Imperfect: **bheróm**, *I was bearing.*

III. Future: **bhersjō**, *I shall bear.*

b. Of completed action or the state derived from the action,

IV. Perfect: **(bhé)bhora**, *I have borne.*

V. Aorist: **(é)bheróm**, *I bore.*

NOTE. Although the Aorist formation was probably generalized in Late PIE, Augment is a dialectal feature only found in Ind.-Ira., Gk., Arm and Phryg. The great success of that particular augment (similar to other additions, like Lat. *per-* or Gmc. *ga-*) happened apparently later in the Southern proto-languages. Vedic Sanskrit clearly shows that Augment was not obligatory, and for Proto-Greek, cf. Mycenaean *do-ke/a-pe-do-ke*, Myc. *qi-ri-ja-to*, Hom. Gk. *πριατο*, etc.

7.2. FORMS OF THE VERB

7.2.1. THE VERBAL STEMS

1. The Forms of the verb may be referred to four basic Stems, called (1) the Present, (2) the Aorist, (3) the Perfect and (4) the Future.

NOTE. There are some characteristic forms of each stem, like the suffix **-n-** or **-sko**, which give mostly Present stems. Generally, though, forms give different stems only when opposed to others.

2. The different stems are used in the verbal conjugation as follows:

STEMS	WHERE USED
Present	Present and Imperfect (Active and Middle)
Aorist	Aorist (Active and Middle)
Perfect	Perfect
Future	<i>Future and Conditional</i>

NOTE. Following Meier-Brügger (2003), “The actual verbal stem is in use either as the present stem, the aorist stem, or the perfect stem. The terms present, aorist and perfect all indicate aspect, which is a grammatical dimension. The aorist stem indicates the perfective aspect. The present stem indicates the imperfective aspect. The perfect stem indicates a sort of resultative aspect (...) The present, aorist, or perfect stem forms the basis of the tempus-modus stem, which serves in the expression of the categories of tempus and modus, and is created through the addition of tempus-modus suffixes:

Suffixes	Athematic	Thematic
Present	-Ø-	-e- + -Ø- = -e- in alternance with -o- + -Ø- = -o-
Subjunctive	-e- in alternance with -o-	-e- + -e- = -ē- in alternance with -o- + -o- = -ō-
Optative	-jeh ₁ - in ablaut with -ih ₁ -	-o- + -ih ₁ - = -oi-

The stem with the suffix -Ø- is automatically the indicative stem. In the present and aorist systems, the injunctive and the imperative are both formed from, and attributed to, the indicative stem. With his use of the indicative stem, the speaker indicates that he attributes validity to the contents of his statement. Stems that are marked with the addition of -e- (in alternance with -o-) indicate the subjunctive; while those featuring the suffix *-jeh₁-* (ablaut *-ih₁-*) indicate the optative”.

3. There are some monothematic verbs, as **esmi**, *to be*, or **edmi**, *eat* – supposedly remains of the oldest PIE. And there are also some traces of recent or even nonexistent mood oppositions. To obtain this opposition there are not only reduplications, lengthenings and alternations, but also vowel changes and accent shifts.

4. Most Late PIE verbs are built with a series of derivational suffixes that alter the root meaning, creating Denominatives and Deverbatives. The first are derived from nouns and adjectives; as, **torsējō**, *dry*, “*make dry*”, from **ters-**, *dry*, or **newājō**, *make new*, from **new-**, *new*. The last are derived from verbs, as **widējō**, *see*, from **weid-**.

NOTE. It is not clear whether these Deverbatives – Causatives, Desideratives, Intensives, Iteratives, etc. – are actually derivatives of older PIE roots, or are frozen remains, formed by compounds of older PIE independent verbs added to other verbs, the ones regarded as basic.

5. Reduplication is another common resource; it consists of the repetition of the root, either complete or abbreviated; as, **sisdō**, *sit down, settle down*, from **sed-**, *sit*, **gígnōskō**, *know*, from **gnō-**, **mímnāskō**, *remember*, from **men-**, *think*, etc.

6. Thematic **e/o** has no meaning in itself, but it helps to build different stems opposed to athematics. Thus, It can be used to oppose a) Indicative Athematic to Subjunctive Thematic, b) Present Thematic to Imperfect Athematic, c) Active to Middle voice, etc. Sometimes an accent shift helps to create a distinctive meaning, too.

7. Stems are inflected, as in the declension of nouns, with the help of vowel grade and endings or *desinences*.

7.2.2. VERB-ENDINGS

1. Every form of the finite verb is made up of two parts:

I. The Stem. This is either the root or a modification or development of it.

II. The Ending or *Desinence*, consisting of:

a. The signs of Mood and Tense.

b. The Personal Ending.

So e.g. the root **bher-**, *carry*, lengthened as thematic future verb-stem **bher-sje/o-**, *will carry*, and by the addition of the personal primary ending **-ti**, becomes the meaningful **bhér-sje-ti**, *he will carry*.

NOTE. The ending **-ti**, in turn, consists of the (probably) tense-sign **-i** and the personal ending of the third person singular, **-t** (Adrados 1996).

2. Verbal endings can thus define the verb Stem, Tense and Mood:

DESINENCES	WHERE USED
Primary active	Present Indicative and Subjunctives (Active)
Secondary active	Imperfect, Aorist and Optatives (Active)
Primary middle	Present Indicative and Subjunctives (Middle)
Passive	(Passive)
Secondary middle	Imperfect and Aorist (Middle)
Perfect	Perfect
Imperative	Imperative

NOTE. This table was partly taken from Fortson (2004).

3. The primary series indicates present and future, and **-mi**, **-si**, **-ti**, and 3rd Pl. **-nti** are the most obvious formations of Late PIE. The secondary endings indicate Past; as, **-m**, **-s**, **-t** and 3rd Pl. **-nt**. The subjunctive and optative are usually marked with the secondary endings, but in the subjunctive primary desinences are attested sometimes. The imperative has Ø or special endings.

NOTE. Although not easily reconstructed, Late PIE had already independent formations for the first and second person plural. However, there were probably no common endings used in all attested dialects, and therefore a selection has to be made for MIE, *v.i.*

They can also mark the person; those above mark the first, second and third person singular and third plural. Also, with thematic vowels, they mark the voice: **-ti** Active Primary | **-t** Active Secondary; **-toi** Middle Primary | **-to** Middle Secondary.

4. The Augment appears in Ind.-Ira., Gk., and Arm., to mark the Past Tense (i.e., the Aorist and the Imperfect). It was placed before the Stem, and consisted generally of a stressed **é-**, which is a dialectal Graeco-Aryan feature not generally used in MIE.

NOTE. Some common variants existed, as lengthened **é-**, cf. Gk. $\eta < \bar{e} / \bar{a}$ and $\omega < \bar{o}$, the so-called Wackernagel contractions of the Augment and the beginning of the verbal root, which happened already by 2000 BC. These are different from those which happened in Attic Greek by 1000 BC.

5. Modern Indo-European verbal endings, as they are formed by the signs for mood and tense combined with personal endings, may be organized in five series.

7. Verbs

		<i>ACTIVE</i>		<i>MIDDLE (or Mediopassive)</i>		
		Primary	Secondary	Primary	Secondary	<i>Passive-only</i>
Sg.	1.	-mi, -ō	-m	-mai, -ai	-ma, -a	-mar, -ar
	2.	-si	-s	-soi	-so	-sor
	3.	-ti	-t	-toi	-to	-tor
Pl.	1.	-mes/-mos	-me/-mo	-mesdha	-medha	-medhar
	2.	-t(h)e	-te	-(s)dhwe	-dhwe	-dhwēr
	3.	-nti	-nt	-ntoi	-nto	-ntor

NOTE 1. About the Active endings: 1) 1st P. Pl. them. endings **-mo**, **-mos**, are found in Italic (Lat. *-mus*), Celtic (O.Ir. **-mo* or **-mos*), Balto-Slavic (cf. Pruss. *-mai*, O.C.S. *-mŭ* < **-mo*, **-mos* or **-mom*), and from **-mo-** or **-me-**, in Germanic (cf. Goth. *-m*) and Indo-Iranian (cf. O.Ind. *-ma*). 2) 2nd P. Pl. ending athematic **-the** (< **-tHe*) is only found differentiated in Old Indian, but this system is sometimes considered the original, while the other dialects would have merged them into a common **-te**. 3) Dual endings are found in Ind.-Ira., Gk., BSl. and Gmc., but apart from a common 3rd P. Prim. **-tom** / Sec. **-tām** in O.Ind. and Gk., there is only a general (usually incomplete) paradigm 1st P. **w-**, 2nd & 3rd P. **t-**, with different lengthenings in **-e/-o**, **-es/-os**, **-ā**.

NOTE 2. Original PIE Middle endings (output from the 'stative voice') were similar to the Perfect ONES; see Kortlandt's <<https://openaccess.leidenuniv.nl/handle/1887/1860>>. 1) The Middle secondary endings are easily reconstructed for the singular and the 3rd person plural, even though Toch. B *-tai*, *-te*, *-nte* still suggest to some (Neu 1968) that the original PIE were **-sai*, **-tai*, **-ntai*, instead of the general opinion, **-soi**, **-toi**, **-ntoi** (cf. Gk. *-oi*). Dialectal Greek forms in the singular point to an alternative 1st P. **-oi**. 2) Greek, Indo-Iranian, and Anatolian dialects show Middle second plural forms in **-medha** (< **-med^h-h₂*, O.Ind. *-mahe*, Gk. *-metha*, Toch. *-ämtä-*), **-mesdha** (< **-mesd^h-h₂*, cf. Gk. *-mestha*, Hitt. *-wašta-*), PII **-megha** (cf. O.Ind. *mahī*), and **-men**, cf. Gk. *-men*, Hitt. *-wen-i*. 3) 1st P. Pl. **-mo(s)r**, Lat. *-mur*, and **-me(s)dhar** (Hitt. *-wašta-r-i*, Toch. *-mt(t)ä-r*), and 2nd P. Pl. Osc. *-ter*, Hitt. *-ttumari*, Toch. *-cär* (< **-dhwēr**, cf. Toch. *-t<-dhwe*).

Italic, Celtic, Tocharian, and Phrygian had Mediopassive Primary Endings in **-r** (cf. Lat. *-tur*, O.Ir. *-tha(i)r*, Toch. *-tär*, Phryg. *-tor*), whilst others had the general **-i** (cf. Skr., Av. *-te*, Gk., Toch. *-tai*, Goth. *-da*, Bal. *-tai*), coexisting in Indo-Iranian (with *-r* as *injunctive*) and in Anatolian, where both were combined (cf. Hitt. *-ta-r-i*, *nta-r-i*). It is thought that **-r** was the Primary Middle marker (from an original Impersonal value), corresponding to the **-i** of the active. Both Mediopassive endings (**-r** and **-i**) coexisted already in the earliest reconstructible PIE, and **-i** probably replaced the old impersonal **-r** as the general Middle marker already by Late PIE. In the Northern dialects **-r** became specialized for the newer passive constructions or disappeared. Thus, following the need for clarity in Modern Indo-European, we reserve the PIE endings in **-r** for the dynamic passive (v.s.), and keep those in **-i** for the original Late PIE Middle Voice.

5. The Perfect endings are as follows:

		Late PIE	PIH
Sg.	1.	-a	*-h ₂ e
	2.	-tha	*-th ₂ e
	3.	-e	*-e
Pl.	1.	-mé	*-mé-
	2.	-té	*-é
	3.	-(é)r	*-ér

6. The Thematic and Athematic endings of the Active Voice:

		Athematic		Thematic	
		Primary	Secondary	Primary	Secondary
Sg.	1.	-mi	-m	-ō	-om
	2.	-si	-s	-esi	-es
	3.	-ti	-t	-eti	-et
Pl.	1.	-mes	-me	-omos	-omo
	2.	-te	-te	-ete	-ete
	3.	-nti	-nt	-onti	-ont

NOTE. Athematic Desinences in *-**enti**, as found in Mycenaean and usually reconstructed as proper PIE endings, weren't probably common PIE desinences. Compare Att.Gk. -*aasi* (<-ansi<-anti), or O.Ind. -*ati*, both remade from an original zero-grade PIE -*nti*. In fact, Mycenaean shows some clearly remade examples, as Myc. *e-e-esi*<**esenti* (cf. Ion. εων), or *ki-ti-je-si* (<*ktiensi*). Also, Primary Thematic ending -**o-mo-** does not have a clear PIE ending, but an -**s** is selected for MIE.

7. The secondary endings are actually a negative term opposed to the primaries. They may be opposed to the present or future of indicative, they may indicate indifference to tense, and they might also be used in Present.

NOTE. It is generally accepted that the Secondary Endings appeared first, and then the primary marker -**i** (or the impersonal -**r**) was added to them. Being opposed to the newer formations, the older endings received a Preterite (or Past) value, and became then Secondary. Forms with secondary endings, not used with a Preterite value, are traditionally called Injunctives, and had mainly a modal value. The Injunctive seems to have never been an independent mood, though, but just another possible use of the original endings in Proto-Indo-European.

7. The Thematic and Athematic endings of the Middle-Passive:

	<i>Athematic</i>			<i>Thematic</i>		
	<i>Primary</i>	<i>Second.</i>	<i>Passive</i>	<i>Primary</i>	<i>Secondary</i>	<i>Passive</i>
Sg.	-mai	-ma	-mar	-ai	-a	-ar
	-soi	-so	-sor	-esoi	-eso	-esor
	-toi	-to	-tor	-etoi	-eto	-etor
Pl.	-mesdha	-medha	-medhar	-omesdha	-omedha	-omedhar
	-(s)dhwe	-dhwe	-dhwer	-e(s)dhwe	-edhwe	-edhwer
	-ṇtoi	-ṇto	-ṇtor	-ontoi	-onto	-ontor

NOTE. An old Middle ending system Sg. **-a**, **-ta**, **-o**, Pl. **-ro**, and Primary **-ai**, **-tai**, **-oi**, or **-ar**, **-tar**, **-or**, Pl. **-ro-**, is also reconstructed for PIE, from older **-h₂e*, **-th₂e-*, **-o*, Pl. **-r*. These alternative forms, identical to the perfect forms (v.s.), are usually said to be the output of the ‘stative voice’ (Jasanoff *Hittite and the IE verb*, 2003), and are not to be commonly used in MIE.

The Middle-Active Opposition is not always straightforward, as there are only-active and only-middle verbs, as well as verbs with both voices but without semantic differences between them.

7.2.3. THE THEMATIC VOWEL

1. Stem vowels are – as in nouns – the vowel endings of the Stem, especially when they are derivatives. They may be **i**, **u**, **ā**, **ē** (and also **ō** in Roots). But the most extended stem vowel is **e/o** (also lengthened **ē/ō**), called Thematic Vowel, which existed in PIH before the split of the Anatolian dialects, and which had overshadowed the (older) athematic stems already by Late PIE. The thematization of stems, so to speak, relegated the athematic forms especially to the aorist and to the perfect; many old athematics, even those in **-ā-** and **-ē-**, are usually found extended with thematic endings **-je/o-**.

NOTE. The old thematics were usually remade, but there are some which resisted this trend; as **edmi**, *I eat*, **dōti**, *he gives*, or **idhi!** *go!*

The stem vowel has sometimes a meaning, as with **-ē-** and **-ā-**, which can indicate state. There are also some old specializations of meanings, based on oppositions:

a. Thematic vs. Athematic:

- Athematic Indicative vs. Thematic Subjunctive. The contrary is rare.

- Thematic Present vs. Athematic Aorist, and *vice versa*.
- Thematic 1st Person Sg. & Pl. and 3rd Person Pl., and Athematic the rest.
- It may also be found in the Middle-Active voice opposition.

b. Thematic stem with variants:

- The first person, thematic in lengthened **-ō**.
- Thematic **o** in 1st Person Sg. & Pl. and 3rd Person Pl.; **e** in 2nd and 3rd Person Sg. and 2nd Pl. There are also archaic 3rd Person Pl. in **e**, as **sentī**, *they are*.

c. Opposition of Thematic stems. This is obtained with different vowel grades of the root and by the accent position.

2. In the Semithematic inflection the Athematic forms alternate with Thematic ones.

NOTE. The semithematic is for some an innovation of Late PIE, which didn't reach some of the dialects, while for other scholars it represents a situation in which the opposition Thematic-Athematic and the Accent Shifts of an older PIE system had been forgotten, leaving only some mixed remains into a generalized Late PIE regular Thematic verbal system.

7.2.4. VERB CREATION

1. With Verb Creation we refer to the way verbs are created from Nouns and other Verbs by adding suffixes and through reduplication of stems.

2. There are generally two kinds of suffixes: Root and Derivative; they are so classified because they are primarily added to the Roots or to Derivatives of them. Most of the suffixes we have seen (like **-u**, **-i**, **-n**, **-s**, etc.) are root suffixes.

Derivative suffixes may be:

- a. Denominatives, which help create new verbs from nouns and adjectives; as, **-je/o-**.
- b. Deverbatives, those which help create new verbs from other verbs; as, **-ei-** (plus root vocalism **o**), **-i-**, **-s-**, **-sk-**, **-ā-**, **-ē-** etc.

3. Reduplication is a common resource of many modern languages. It generally serves to indicate intensity or repetition in nouns, and in the Proto-Indo-European verb it had two main uses:

a. It helped create a Deverbative, opposed to root verbs, generally in the Present, especially in Intensives, and usually involving nearly the entire root; as, **ḍḍrājō** or **mṛmrājō**, *murmur*, **gálgaljō**, *talk*.

NOTE. It is doubtful whether these are remains of an older system based on the opposition Root/Deverbative, prior to the more complicated developments of Late PIE in suffixes and endings, or, on the contrary, it is the influence of (thus earlier) noun derivations.

b. Essentially, though, reduplication has lost its old value and marks the different stems, whether Present, Aorist or Perfect. There are some rules in reduplication:

- In the Present, it is combined with roots and stress; as, **bhíbher-mi**, **gínō-mi**, etc.

NOTE. There are old reduplicates with Desiderative meaning, which conveys “the subject’s desire to bring about a state of affairs” in **i**, like **wi-wṇ-só**, *would like to win*, from **wen-**, *to overpower, win*.

- In the Perfect, combined with root vocalism and special (Perfect) endings; as, **bhé-bhor-a**, **gé-gon-a**, etc.

NOTE. Reduplicated Perfects show usually o-grade root vowel (as in Gk., Gmc. and O.Ind.), but there are exceptions with zero-grade vocalism, cf. Lat. *tutudi*, Gk. *mémikha*, *tétaka*, *gégaa*.

- Full reduplications of Intensives (cf. **mr-mr-**, **gal-gal-**) are different from simple reduplications of verbal Stems, which are formed by the initial consonant and **i** in the Present (cf. **bhi-bher-**, **mi-mno-**, **pí-bo-**), or **e** in the Perfect and in the Aorist (cf. **bhe-bher-**, **gé-gon-**, **ké-klou-**).

NOTE. In other cases, reduplicated stems might be opposed, for example, to the Aorist to form Perfects or *vice versa*, or to disambiguate other elements of the stem or ending. Intensives carry the notion of “repeated bringing about of a state of affairs”, and a prime example is **qer-qṛ-**, *doing again and again*, from **qer-**, *cut (off)*.

4. Common derivational suffixes include the following:

NOTE. Descriptions are taken from LIV (1998); some examples from Piotr Gąsiorowski’s <<http://www.geocities.com/Athens/Oracle/2190/Caraculiambro/Verbs.html>>. See §7.4 for more.

a. Transitive Intensives of a different kind involve the suffix **-ā** (<*-eh₂-/*-h₂-), added to the weak form of a root to produce athematic verbs, indicating “the entry of the subject into a new state of being”; as, **mnā́-** (<*-mn-eh₂-), *be mindful of*, **dukā́-**, *lead*.

b. The suffix **-je/o-** forms thematic Durative verbs, conveying “a subject’s state of being without stressing the entry of the subject into the state of being”; as, **spekjō**, *view, regard*, **kapjō**, *take, seize*, **mṛsjō**, *not heed, ignore* (from **mors-**, *forget*). From nouns, as **oqjō**, *to eye* (from **oqos**, *eye*, cf. **oqō**, *see*), **nomnjō**, *name*.

c. Suffix **-ēje/o-**, usually added to **-o-** grade roots, formed Causatives/Iterative stems, which indicate “a cause of bringing about a state of affairs, or the repeated bringing about of a state of affairs”; as, **monējō**, “*make think*”, *warn, remind*, **sedējō**, *be sitting*, **bhoudhējō**, *wake somebody up* (cf. **bheudhō**, *awake*), **ṛghējō**, *incite* (cf. **argujo**, *reason, discuss*), etc.

d. The nasal suffix **-néu/-nu-**, usually enforcing the weak vocalism of the root, produces (often transitive and vaguely causative) athematic verbs that refer to the beginning or termination of an action (the so-called *Inchoatives*), or suggest that something is done once (rather than repeated). A rarer variant of this pattern involves **-nu-** formations with stress alternating between the full-vowelled root and the inflection. A closely related formation involves verbs in **-nā-** (<*-náh₂-/*-nh₂-); as, **ṛneumi**, *set in motion, move* (from *h₁or- ‘*rise, move*’), **rékneumi**, *range*.

e. Similar functions can be attributed to the so-called nasal infix **-né/-n-**, which is normally inserted after a liquid or semivowel (R = w, j, r, l) in *CeRC-* roots, producing the characteristic alternation *CR-né-C-/CR-n-C-*, preserved in Indo-Iranian; as, **linéq-**/**linq-**, *abandon, release*, (from **leiq-**), **junég-/jung-**, *join, connect* (from **jeug-**), etc.

f. The suffix **-ske/o-**, usually added to zero-grade bases, forms Iterative (or Inchoative) stems; as, **cmṣskō**, *walk about* (cf. **cemjō**, *come*), **prṣskō**, *ask repeatedly*, **gnōskō**, *know*. Also with reduplication; as, **cícṣskō**, **gígnōskō**.

Its common variant is **-iske/o-**. Apparently, the same **-ske/o-** can also produce Denominal duratives like **medhuskō**, *get drunk* (from **medhu**, *mead, intoxicating drink*) or **wodskō**, *wash* (from **wod-**, *water*).

g. The suffix **-āje/o-** added to adjectives produces *Factitives*, meaning ‘make something’; as, **newājō**, *make new, renew*, **nomnājō**, *name*, **sedājo**, *settle*.

h. The suffix **-ē-**, and the combinations **-ē-s-**, **-ē-ske/o-**, yield intransitive verbs denoting change of state (‘become *X*’); as, **roudhēskō**, *turn red*, **senēskō**, *get old*.

7.2.5. SEPARABLE VERBS

1. A Separable Verb is a verb that is composed of a Verb Stem and a Separable Affix. In some verb forms, the verb appears in one word, whilst in others the verb stem and the affix are separated.

NOTE. A Prefix is a type of affix that precedes the morphemes to which it can attach. A separable affix is an affix that can be detached from the word it attaches to and located elsewhere in the sentence in a certain situation.

2. Many Modern Indo-European verbs are separable verbs, as in Homeric Greek, in Hittite, in the oldest Vedic and in modern German ‘*trennbare Verben*’.

Thus, e.g. the (Latin) verb **supplāktum**, *beg humbly, supplicate* (adj. **supplāks**, *suppliant*, verb **plākējō**, *advise, persuade*), gives **sup vos plākējō** (cf. O.Lat. *sub uos placō*), *I entreat you*, and not ***wos supplakējō**, as Classic Lat. *uos supplicō*.

NOTE. German is well known for having many separable affixes. In the sentence Ger. *Ich komme gut zu Hause an* the prefix *an* in the verb *ankommen* is detached. However, in the participle, as in *Er ist angekommen*, “*He has arrived*”, it is not separated. In Dutch, compare *Hij is aangekomen*, “*He has arrived*”, but *Ik kom morgen aan*, *I shall arrive tomorrow*.

English has many phrasal or compound verb forms that act in this way. For example, the adverb (or adverbial particle) *up* in the phrasal verb *to screw up* can appear after the subject (“*things*”) in the sentence: “*He is always screwing things up*”.

Non-personal forms, i.e. Nouns and Adjectives, form a compound (*karmadharaya*) with the preposition; as O.Ind. *prasādaḥ*, “*favour*”, Lat *subsidium*, *praesidium*, O.Ind. *apaciti*, Gk. *apotisis*, “*reprisal*”, etc.

NOTE. There are, indeed, many non-separable verbs, those formed with non-separable prefixes.

7.3. THE CONJUGATIONS

7.3.1. Conjugation is the traditional name of a group of verbs that share a similar conjugation pattern in a particular language, a Verb Class. This is the sense in which we say that Modern Indo-European verbs are divided into twelve *Regular Conjugations*; it means that any *regular* Modern Indo-European verb may be conjugated in any person, number, tense, mood and voice by knowing which of the twelve conjugation groups it belongs to, and its main stems.

NOTE. The meaning of Regular and Irregular becomes, thus, a matter of choice, although the selection is obviously not free. We could have divided the verbs into ten conjugations, or twenty, or just two – Thematic and Athematic –, and then we would have left the variant verbs into a huge group of Irregulars. We believe that our choice is in the middle between a simplified system with many irregular conjugations – which would need in turn more data for the correct inflection of each verb –, and an extensive conjugation system – trying to include every possible inflection attested in Late PIE –, being thus too complicated and therefore difficult to learn. It is clear that the way a language is systematized influences its evolution; to avoid such artificial influence, typical of Classical languages (e.g. the innovations systematized by ancient grammarians in Sanskrit, Greek or Latin) we try to offer a natural approach to PIE, including the most common verbal classes as general conjugations, and leaving the most irregular verbs outside.

A reference book for the classification of PIE verbs into conjugations is found in the *Lexikon der indogermanischen Verben* (2001), under the direction of H. Rix. Nevertheless, it features an old PIE reconstruction, with all attested athematic and thematic conjugations of Present, Aorist and Perfect stems, and it is therefore 1) too complex for a classical grammar, and 2) not applicable to a Late PIE early dialectal scheme, in which some athematic paradigms had been lost (or frozen into scarce, hence irregular examples), while newer verbs (and remade ones) further split within the thematic paradigms. A general picture of the LIV's verbal classes:

LIV	STEM CLASS	Examples
1a	Present, Athematic, Amphidynamic root.	* <i>g^{wh}en-ti</i> /* <i>g^{wh}n-énti</i>
1b	Present, Athematic, Acrodynamic root.	* <i>stēu-ti</i> /* <i>stéw-nti</i>
1g	Present, Athematic, with -e- Reduplication.	* <i>d^hé-d^hoh₁-ti</i> /* <i>d^hé-d^hh₁-nti</i>
1h	Present, Athematic, with -i- Reduplication.	* <i>sti-stéh₂-ti</i> /* <i>sti-sth₂-énti</i>
1i	Present, Thematic, with -i- Reduplication.	* <i>gi-gñh₁-é-ti</i>
1k	Present, Athematic, with Nasal Infix	* <i>li-né-k^w-ti</i> / <i>li-n-k^w-énti</i>
1n	Present, Thematic suffix -e-, e grade root	* <i>b^hér-e-ti</i>
1o	Present, Thematic suffix -é-, zero grade root	* <i>g^hr_h3-é-ti</i>
1p	Present, Thematic suffix -ské-, zero grade root	* <i>g^wm₃-ské-ti</i>
1q	Present, Thematic suffix -jé-, zero grade root	* <i>gñh₁-jé-toi</i>
2a	Aorist, Athematic, root	* <i>g^wem-t</i>
2b	Aorist, Athematic, suffix -s-	* <i>prek-s-nt</i>
2c	Aorist, Thematic, Reduplicated	* <i>we-uk^w-e-t</i>
3a	Perfect, Reduplicated	* <i>g^we-g^wom-/g^we-g^wm-</i>

7.3.2. Modern Indo-European verbs are divided into two main Conjugation Groups: the Thematic, newer and abundant in Late PIE, and the old Athematic Verbs. These groups are, in turn, subdivided into eight and four subgroups respectively.

NOTE. The fact that a PIE Root is of a certain type doesn't imply necessarily that its derivatives (Stems derived from it) belong to a specific conjugation, as they might be found in different subgroups depending on the dialects (for Eng. *love*, cf. Lat. *lubet*, Skr. *lubhyati*, Gmc. *liuban*), and even within the same dialect (cf. Lat. *scatō*, *scateō*). That's why e.g. Old Indian verbs are not enunciated by their personal forms, but by their roots.

A. THE THEMATIC CONJUGATION

The First or Thematic Conjugation Group is formed by the following 8 subgroups:

I. Root Verbs with root vowel **e** in the Present and **o** in the Perfect:

- a. Triliteral: **deikō**, **dikóm**, **doika**, **deiksō**, *show*, etc.
- b. Concave: **teqō**, **teqóm**, **toqa/tōqa**, **teqsō**, *escape*, **séqomai**, *follow*, etc.

NOTE. For IE **teqō**, cf. O.Ir. *téchid/táich* (<**e**/ō).

II. Concave Root Verbs with non-regular Perfect vocalism. Different variants include:

- a. **labhō**, **lābha**, *take*; **lawō**, **lāwa**, *enjoy*, **slabai**, **slāboma**, *fall* (Middle Voice); **aidai**, *praise*.

NOTE. Compare Gk. *αἰδομαι*, O.ind. *ile*, Gmc. part. *idja-*. The first sentence of the Rigveda may already be translated to Modern Indo-European with the aforementioned verbs.

- b. **kano**, **kékana/kékāna**, *sing*.
- c. **legō**, **lēga**, *join, read, decide*.
- d. **lowō**, **lōwa**, *wash*.
- e. **rādō**, **rāda**, *shuffle, scrape, scratch*.
- f. **rēpō**, **rēpa**, *grab, rip out*.
- g. **rōdō**, **rōda**, *gnaw*.

III. *Verba Vocalia*, i.e., thematic **-ā-je/o-**, **-ē-je/o-**, **-í-je/o-**, **-ú-je/o-**:

- a. **amājō**, *love*.
- b. **lubhējō**, *love, desire*.
- c. **sāgijō**, *look for, search*.
- d. **argujō** *reason, argue* (cf. Lat. *arguō*, Hitt. *arkuwwai*).

IV. Verbs in **-je/o-**:

- a. Trilateral: **kupjō, kup(j)óm, koupa, keupsō**, *be worried*.
- b. Concave: **jakjō, jēka**, *throw*.
- c. Lamed-he: **parjō, pepra/péprōka**, *produce*.
- d. Reduplicated Intensives: **kárkarjō**, *proclaim, announce* (cf. Gk. καρκαίρω, but Skr. *carkartī*).

NOTE. Examples of thematic reduplicated intensives include common forms like Greek πορφυρω, παμπαινω, γαργαιρω, μορμορω, μερμηριζω, καγχαλαω, μαρμαιρω, δενδιλλω, λαλεω, and, in other IE dialects, Slavic *glagoljo*, Latin ('broken' reduplication with different variants) *bombico, bombio, cachinno, cacillo, cracerro, crocito, cucullio, cucurrio, curculio, didinrio, lallo, imbubino, murmillo, palpor, pipito, plipio, pipio, tetrinnio, tetrissito, tintinnio, titio, titubo*, etc.

V. Intensives-Inchoatives in **-ske/o-**:

- a. Of Mobile Suffix: **swēdhskō, swēdhjóm, swēdhwa, swēdhsō**, *get used to*.
- b. Of Permanent Suffix: **prkskṓ**, *inquire*.

VI. With nasal infix or suffix:

- a. Perfect with o vocalism: **jungō, jugóm, jouga, jeugsō**, *join*.
- b. Reduplicated Perfect: **tundō, tét(o)uda/tút(o)uda**, *strike*.
- c. Convex: **bhrangō, bhrēga**, *break*.
- d. Nasal Infix and Perfect with **o** root: **gusnō, gousa** (cf. Lat. *dēgūnō, dēgustus*)
- e. Nasal Infix and Reduplicated Perfect: cf. Lat. *tollō, sustulii (supsi-+tét-)*, *lift*.

VII. With Reduplicated Present:

- a. **sisō, sēwa**, *sow*.
- b. **gignō, gegna, gégnāka**, *produce*.

VIII. Other Thematics:

- **płdō, pép(o)la**.
- **widējō, woida**, *see*.
- etc.

B. THE ATHEMATIC CONJUGATION

Verbs of the Second or Athematic Conjugation Group may be subdivided into:

I. Monosyllabic:

- a. In Consonant: **esmi**, *be*, **edmi**, *eat*, **ēsmāi**, *find oneself, be*.
- b. In **ā** (i.e. PIH **h*₂): **snāmi**, *swim*, **bhamāi**, *speak*.
- c. In **ē** (i.e. PIH **h*₁): **bhlēmi**, *cry*, **(s)remaī**, *calculate*.
- d. With Nasal infix: **leiq-** (**lineqti/linqṇtī**), *leave*, **kleu-** (**kḷneuti/kḷnuntī**), *hear*, **peu-** (**punāti/punāntī**), *purify*, etc.

NOTE. These verbal types appear mostly in Indo-Iranian and Hittite examples, and could therefore be more properly included in the suffixed (BIVc) type below.

- e. Others: **eīmi**, *go*, etc.

II. Reduplicated:

- a. **(sī)stāmi**, *stand*.
- b. **(dhí)dhēmi**, *set, place*,
- c. **(jī)jēmi**, *throw, expel*.
- d. **(dī)dōmi**, *give*.
- e. **(bhí)bheimi**, *fear*.
- f. **kíkumi/kuwóm/kékuwa**, *strengthen*.

III. Bisyllabic:

- a. **wémāmi**, *vomit*.

NOTE. These verbal types appear mostly in Indo-Iranian and Hittite examples, and could therefore be more properly included in the suffixed (BIVc) type below.

- b. **bhélumi**, *weaken*, (cf. Goth. *bliggwan*, “*whip*”).

NOTE. This verb might possibly be more correctly classified as *bhelujō*, within the Verba Vocalia, type AIIId in **-u-jo-** of the Thematic Group.

IV. Suffixed:

- a. In **-nā-** (<PIH **neh*₂): **pérnāmi**, *grant, sell* (cf. Gk. *περνῆμι*, O.Ir. *ren(a)id*, etc.), **qrínāmi**, *buy* (cf. O.Ind. *krīnāti*, O.Ind. *cren(a)im*, gr. *πρίσμαι*, etc).
- b. In **-nu-**: **árnumi/órnumi**, *rise (up)*.
- c. With nasal infix: **lineqmi** (**linqō**), **bhenegmi** (**bhegō**), **amneghti** (**amghō**)

NOTE. For these verbs Old Indian shows zero-grade root vowel and alternating suffixes. Greek shows the opposite behaviour, which should be preferred in MIE because of its ease of use.

7.4. THE FOUR STEMS

7.4.1. THE FOUR STEMS

1. The Stems of the Present may be:

I. Roots, especially Thematic, but also Athematic and Semithematic.

II. Reduplicated Roots, especially Athematic.

III. Consonantal stems, all Thematic. They may end in occlusive, or **-s** and its lengthenings, like **-ske/o-**; as, **prk-skó**, *ask, ask for*, from zero-grade of **prek-**, *ask*.

IV. In Vowel, Thematic in **-i-**, **-u-**, and Athematic in **-ā-**, **-ē-**.

V. In Nasal, Thematic and Athematic (especially in **-neu/-nu-**, **-nā/-na-**).

2. The Aorist Stem is opposed to the Present:

A. Aorist Athematic Roots vs. Present Roots and Reduplicates.

B. Aorist Thematic Roots vs. Athematic Presents.

C. Aorist Thematic Reduplicated Roots vs. Athematic Reduplicated Present.

D. Aorist with **-s-** and its lengthenings, both Thematic & Athematic.

E. Aorist with **-t-** and **-k-** are rare, as Lat. *feci*.

F. Aorist with **-ā-**, **-ē-**, and **-i-**, **-u-**, & their lengthenings.

3. The Stems of the Perfect have usually root vowel **ǫ/ø**, with dialectal reduplication – mainly Indo-Iranian and Greek –, and some especial endings.

4. Modern Indo-European uses a general Future Stem with a suffix **-s-**, usually Thematic **-se/o-**.

NOTE. The future might also be formed with the present in some situations, as in English *I go to the museum*, which could mean *I am going to the museum* or *I will go to the museum*. The Present is, thus, a simple way of creating (especially immediate) future sentences in most modern Indo-European languages, as it was already in Late PIE times.

5. To sum up, there are four inflected Stems, but each one has in turn five inflected forms (Indicative, Imperative, Subjunctive, Optative and Participle), and one not inflected (Verbal Noun). Verbal inflection is made with desinences (including Ø), which indicate Person, Time and Voice. The person is thus combined with the other two.

NOTE. The imperfect stem had neither a subjunctive nor an optative formation in Late PIE.

An example of the four stems are (for PIE verbal root **leiq-**, *leave*) **leiq-e/o-** (or nasal **li-n-eq-e/o-**) for the Present, **(é)liq-é/ó-** for the Aorist, **(lé-)loiq-** for the Perfect, and **leiq-sje/o-** for the Future.

7.4.2. THE PRESENT STEM

I. PRESENT STEM FORMATION PARADIGM

1. Verbal Roots (Athematic, Semithematic and Thematic) were not very common in Late PIE. They might have only one Stem, or they might have multiple Stems opposed to each other.

2. Reduplicates are usually different depending on the stems: those ending in occlusive or **-u-** are derived from extended roots, and are used mainly in verbs; those in **-s** and **-u** are rare, and are mainly used for the remaining stems.

3. The most prolific stems in Late PIE were those ending in **-i**, **-ē** and **-ā**, closely related. Athematics in **-ē-** and **-ā-** have mostly Present uses (cf. **dhídhēmi**, *do*, **sistāmi**, *stand*), as Thematics in **-ske/o-** (as **gnō-skō**, *know*, **pṛk-skó**, *ask*, *inquire*) and Athematics or Thematics with nasal infix (i.e. in **-n-**, as **li-n-eq-**, *leave*, from **leiq**, or **bhu-n-dho-**, *make aware*, from **bheudh-**).

II. PRESENT ROOT STEM

1. A pure Root Stem, with or without thematic vowel, can be used as a Present, opposed to the Aorist, Perfect and sometimes to the Future Stems. The Aorist Stem may also be Root, and it is then distinguished from the Present Stem with 1) vowel opposition, i.e., full grade, o-grade or zero-grade, 2) thematic vowel, or 3) with secondary phonetic differentiations (as accent shift).

Present verbal roots may be athematic, semithematic and thematic. The athematics were, in Late PIE, only the remains of an older system, as (probably) the semithematics.

2. In Monosyllabic Roots ending in consonant or sonant, the inflection is usually made:

- a. in the Active Voice Sg., with root vowel **e** and root accent
- b. in the Active and Middle Voice Pl., root vowel **Ø** and accent on the ending.

The most common example is **es-**, *be*, which has a singular in **es-** and plural in **s-**. There are also other monosyllabic verbs, as **chen-**, *strike*, **ed-**, *eat*. Other roots, as **eí-**, *go*, follow this inflection too.

		ed- , <i>eat</i>	chen- , <i>knok</i>	eí- , <i>go</i>	es- , <i>be</i>
Sg.	1.	edmi	chenmi	eími	esmi
	2.	edsi	chensi	eísi	esi ⁱⁱ
	3.	esti ⁱ	chenti	eíti	esti
Pl.	1.	dmes	chṇmés	imés	smes
	2.	dte	chṇté	ité	ste
	3.	denti	chṇenti	jenti	senti

ⁱ MIE **ésti** < PIE ***éd̥ti**; ⁱⁱ Please note PIE **es-** + **-si** = **esi**, there is no gemination of **s**.

3. There is also another rare verbal type, Root Athematic with full or long root vowel and fixed root accent, usually called Proterodynamic. It appears frequently in the Middle Voice.

4. Monosyllabic Roots with Long Vowel (as **dhē-**, **stā-** or **dō-**) are inflected in Sg. with long vowel, and in Pl. and Middle with **-a**. They are rare in Present, usually reserved for the Aorist. The reconstructed PIH paradigm of **stā-** is given here for comparison.

		dhē- , <i>do</i>	dō- , <i>give</i>	stā- , <i>stand</i>	* <i>steh₂-</i> , <i>stand</i>
Sg.	1.	dhídhēmi	(dí)dōmi	(sí)stāmi	* <i>(sí)steh₂mi</i>
	2.	dhídhēsi	(dí)dōsi	(sí)stāsi	* <i>(sí)steh₂si</i>
	3.	dhídhēti	(dí)dōti	(sí)stāti	* <i>(sí)steh₂ti</i>
Pl.	1.	dhídhames	(dí)dames	(sí)stames	* <i>(sí)sth₂més</i>
	2.	dhídhate	(dí)date	(sí)state	* <i>(sí)steh₂té</i>
	3.	dhídhanti	(dí)danti	(sí)stanti	* <i>(sí)sth₂ṇti</i>

NOTE. Most athematic verbs are usually reconstructed with a Mobile Stress paradigm (as in Sanskrit, or the oldest PIE), but we preserve the easier Greek columnar accent, a Late PIE trend similar to the nominal Mobile paradigm; it usually reads Late PIE **dhidhamés**, **dhidhaté**, **dhidhanti**, or **didamés**, **didaté**, **didanti**.

5. Disyllabic Roots which preserve an athematic inflection have the Present in full/Ø-vowel. The alternative Ø/full-vowel is generally reserved for the Aorist.

6. In the Semithematic Root Stem, the 3rd Person Pl. has often an ending preceded by the Thematic vowel **e/o**. That happens also in the 1st Person Sg., which often has **-o** or **-o-m(i)**; and in the 1st Person Pl., which may end in **-o-mos**, **-o-mo**.

NOTE. In an old inflection like that of the verbal root **es**, i.e. **esmi-smés**, sometimes a Semithematic alternative is found. Compare the paradigm of the verb *be* in Latin, where zero-grade and o vowel forms are found: **s-omi** (cf. Lat. *sum*), not **es-mi**; **s-omos** (cf. Lat. *sumus*), not **s-me**; and **s-onti** (cf. Lat. *sunt*), not **s-enti**. Such inflection, not limited to Latin, has had little success in the Indo-European verbal system, at least in the dialects that have been attested. There are, however, many examples of semithematic inflection in non-root verbs, what could mean that an independent semithematic inflection existed in PIE, or, on the contrary, that old athematic forms were remade and mixed with the newer thematic inflection (Adrados 1996).

7. Thematic verbal roots have generally an **-e/o-** added before the endings. Therefore, in Athematic stems **-e/o-** is not usually found, in Semithematics it is found in the 1st P.Sg. and Pl., and in Thematic stems it appears always.

Thematic inflection shows two general formations:

- a. Root vowel **e** and root accent; as in **déiketi**, *he/she/it shows*.
- b. Root vowel Ø and accent on the thematic vowel, as in **dikóm** *he/she/it showed*.

The first appears usually in the Present, and the second in the Aorist, although both could appear in any of them in PIE. In fact, when both appear in the Present, the a-type is usually a Durative – meaning an action not finished –, while b-type verbs are Terminatives or Punctuals – meaning the conclusion of the action. This semantic value is not general, though, and is often found in Graeco-Aryan dialects.

NOTE. The newer inflection is, thus (in a singular/plural scheme), that of full/full vocalism for Present, Ø/Ø for Aorist. The (mainly) Root Athematic - and Semithematic - inflection in full/Ø appears to be older than the Thematic one. The Thematic inflection probably overshadowed the

Athematic and Semithematic ones by Late PIE, and there are lots of examples of coexisting formations, some of the newer being opposed to the older in meaning.

III. PRESENT REDUPLICATED STEM

1. Depending on its Formation, present stems may have either Full Reduplication, sometimes maintained throughout the conjugation, or Simple Reduplication, which normally consists of the initial consonant of the root followed by *-i-*.

Depending on its Meaning, reduplication may have a general value (of Iteration or Intensity), or simply opposed values in individual pairs of *Basic Verb-Deverbative*. Therefore, it helps to distinguish the verb in its different forms.

2. How Reduplication is made:

I. Full Reduplication, normally found in the Present Stem, repeats the Root or at least the group *consonant/sonorant+vowel+consonant/sonorant*; as, **gal-gal-**, *talk*, **bher-bher-**, *endure*, **mṛ-mṛ-**, *whisper*, etc.

Full reduplication is also that which repeats a Root with *vowel+consonant/sonorant*; as, **ul-ul-**, *howl* (cf. Lat. *ululāre*).

II. Simple Reduplication is made:

a. With *consonant + i*,

- in Athematic verbs; as, **bhi-bher-**, *carry* (from **bher-**),
- in Thematic verbs; as, **gi-gnō-sko-**, *know* (from **gnō-**), etc. **si-sdo-**, *sit down*, (from zero-grade of **sed-**, *sit*),
- Some Intensives have half full, half simple Reduplication, as in **dei-dik-**, *show* (from **deik-**).
- There are other forms with *-w*, *-u*, as in **leu-luk-**, *shine* (from **leuk-**, *light*).
- There are also some Perfect stems with *i*.

b. With *consonant + e/ē*, as **dhe-dhē-**, **de-dō-**, etc.

Simple Reduplication in *e* appears mainly in the Perfect, while *i* is characteristic of Present stems. Reduplication in *e* is also often found in Intensives in southern dialects.

7. Verbs

NOTE. Formal reduplication in **-i** is optional in Modern Indo-European, as it is mostly a Graeco-Aryan feature; as, **gignōskō/gnōskō**, **didō/dō**, **pibō/pō(i)**, etc.

NOTE. Reduplication didn't affect the different root vowel grades in inflection, and general rules were followed; as, **bibherti-bibhrmés**, **sistāmi-sistamés**, etc.

3. The different Meaning of Reduplicates found in PIE are:

- Indo-Iranian and Greek show a systematic opposition *Basic Verb* - *Deverbative Reduplicated*, to obtain an Iterative or Intensive verb.

- Desideratives are Reduplicates with **i** + Root + **-se/o-**, as e.g. **men-** vs. **mi-mṇ-so-**, *think*. Such Reduplicates are called Terminatives.

NOTE. Although the Iterative-Intensives, Desideratives and sometimes Terminatives did not succeed as usual resources in some North-West IE dialects, they are an old common resource of Late PIE, probably older than the opposition Present-Perfect, and were probably alive to a certain degree in Europe's IE times.

IV. PRESENT CONSONANT STEM

1. Indo-European Roots may be lengthened with an occlusive to give a verb stem, either general or Present-only. Such stems are usually made adding a dental **-t-**, **-d-**, **-dh-**, or a guttural **-k-**, **-g-**, **-gh-** (also **-k-**, **-g-**, **-gh-**), but only rarely with labials or labiovelars. They are all Thematic, and the lengthenings are added to the Root.

NOTE. Such lengthenings were probably optional in an earlier stage of the language, before they became frozen as differentiated vocabulary by Late PIE. Some endings (like **-ske/o-**, **-je/o-**, etc.) were still optional in Late PIE, v.i. These lengthenings are considered by some linguists as equally possible root modifiers in Proto-Indo-European as those in **-s-**, **-sk-**, **-n-** (infix), **-nu-**, **-nā-**, etc. However, it is obvious that these ones (vide infra) appear more often, and that they appear usually as part of the conjugation, while the former become almost always part of the root and are modified accordingly. Whatever the nature and antiquity of all of them, those above are in Modern Indo-European usually just part of existing stems (i.e., part of the IE morphology), while the following extensions are often part of the conjugation.

3. Imperfect Stems in **-s-** and its derivatives, as **-sk-** and **-st-**, are almost all Thematic.

NOTE. Thematic suffix **-ste/o-** has usually an Expressive sense, meaning *sounds* most of the times; as, **bhr̥stō**, *burst, break* (from **bhresjō**, *shatter*).

4. Stems in **-s** have a common specialized use (opposed to Basic stems), marking the Preterite, the Future, and sometimes the Subjunctive.

NOTE. Aorist stems in **-s-** are usually Athematic. Because of its common use in verbal inflection, deverbatives with a lengthening in **-s-** aren't generally opposed in meaning to their basic stems. There may be found some individual meanings in such opposed stem pairs, though, already in Late PIE; as, Insistents or Iteratives (cf. **wéid-se/o-**, “*want to see, go to see*”, hence “*visit*”, as Lat. *vīsere*, Goth. *gaweisōn*, O.S. O.H.G. *wīsōn*, vs. Pres. **wid-éje/o-**, *see*, as Lat. *vidēre*), Causatives, and especially Desideratives (which were also used to form the Future stem in the Southern Dialect). There is, however, no general common meaning reserved for the extended stem in **-s-**. Compare also Lat. *pressī* <* *pres-sai* vs. Lat. *premō*; Lat. *tremō* vs. a Gk. *τρεω* <* *tre-sō*, O.Ind. *trāsate*, ‘*he is frightened*’.

PRESENT CONSONANT LENGTHENINGS

A. Thematic suffix **-ske/o-** is added to Roots in zero-grade, especially to monosyllabics and disyllabics; as, **prk-skō** (from **prek-**), **cm-skō** (from **cem-**), **gnō-skō** (from **gnō-**). It can also be added to Reduplicated stems, as **dí-dk-skō** (from **dek-**), **gí-gnō-skō**, and to lengthened Roots, especially in **ī, u, ē, ā**, as **krē-skō** (from **ker-**).

Sometimes these Deverbatives show limited general patterns, creating especially Iteratives, but also Inchoatives, Causatives, and even Determinatives or Terminatives.

This lengthening in **-sk-** seems to have been part of Present-only stems in Late PIE; cf. Lat. *flōrescō/flōruī*, Gk. *κικλησκω/κεκληκα*, and so on.

NOTE 1. Cases like IE verb **prkskō**, *ask, demand* (cf. O.H.G. *forscōn*, Ger. *forschen*, Lat. *poscō* > *por(c)scō*, O.Ind. *prcch*, Arm. *harc'anem*, O.Ir. *arcu*), which appear throughout the whole conjugation in different IE dialects, are apparently exceptions of the Late Proto-Indo-European verbal system; supporting a common formation of zero-grade root Iterative presents, compare also the form **(e)ské/ó-** (<*h₁skó*), the verb **es-** with ‘existential’ sense, as O.Lat. *escit*, “*is*”, Gk. *ēske*, “*was*”, Hom. Gk. *éske*, Pal. *iška*, etc.

NOTE 2. Supporting the theory that **-sk** has a newer development than other lengthenings is e.g. the Hittite formation *duskiski(ta)* (cf. O.Ind. *túsyate*, ‘*silenter*’, O.Ir. *inna tuai* ‘*silentia*’), which indicates that in Anatolian (hence possibly in Indo-Hittite as well) such an ending – unlike the other endings shown – is still actively in formation.

B. Stems in **-n-** are said to have a *nasal suffix* or a *nasal infix* – if added within the root. They may be Athematic or Thematic, and the most common forms are **-n**, **-neu/-nu-**, -

nā-: as in **stṛ-neu-mi/ster-nu-ō**, *spread*; **li-n-eq-mi/li-n-q-ō**, *leave*; **mḷ-n-ājō**, *soften*; **dhre-n-g-ājō**, *hold*; **pu-n-g-ō**, *prik*; **bhu-n-dh-ō**, *be aware*, **pla-n-t-ājō**, *plant*; etc. These verbs can be found also without the nasal suffix or infix, viz. **streu-**, **leiq-**, **mlā-**, **dhreg-**, **peug-**, **plat-**.

There are other, not so common nasal formations; as, **-ne/o-**, and (possibly derived from inflected **-neu-** and **-nei-**) the forms **-nwe/o-**, **-nje/o-**. So for example in **sper-no-**, *scatter*, **plē-no-**, *fill*.

NOTE. These formations are very recent to Late Proto-Indo-European. In Greek it is frequent the nasal suffix **-an-**. Others as **-nwe/o-**, **-nje/o-**, appear often, too; as Gk. *phthínuo*, Goth. *winnan* (from **wenwan*); Gk. *iaíno*, *phainomai* (from **bhā-**) and O.Ind. verbs in *-nyati*.

V. PRESENT VOWEL STEM

1. Some roots and derivatives (deverbatives or denominatives) form the Thematic verb stems with **-je/o-**, and Semithematics in **-ī**, usually added to the stem in consonant.

The preceding vowel may be an **-ā-**, **-ē-**, **-i-** or **-u-**, sometimes as part of the root or derivative, sometimes as part of the suffix. Possible suffixes in **-je/o-** are therefore also the so-called *Verba Vocalia*, **-ájje/o-**, **-éje/o-**, **-íje/o-**, and **-úje/o-**.

NOTE 1. Verbs in **-je/o-** are usually classified as a different type of deverbatives (not included in *verba vocalia*); in these cases, the root grade is usually Ø; as, **bhudhjō**, *wake up*, from **bheudh-**; but the full grade is also possible, as in **spekjō**, *look*.

NOTE 2. Deverbatives in **-je/o-** give usually Statives, and sometimes Causatives and Iteratives, which survive mainly in the European dialects (but cf. Gk. *ωθεω*, O.Ind. *vadhayati*, etc), as the especial secondary formation Causative-Iterative, with o-grade Root and suffix **-ěje/o-**, cf. from **wes-**, *dress*, Active **woséjeti** (cf. Hitt. *waššizzi*, Skr. *vāsáti*, Ger. *wazjan*, Alb. *vesh*), from **leuk-**, *light*, Active **loukéjeti** (cf. Hitt. *lukiizzi*, Skr. *rocáyati*, Av. *raočayeiti*, O.Lat. *lūmina lūcent*), etc. There are also many deverbatives in **-je/o-** without a general meaning when opposed to its basic verb. The Thematic inflection of these verbs is regular, and was usually accompanied by the Semithematic inflection in the Northern dialects, but not in the Southern ones.

2. Thematic root verbs in **-je/o-** are old, but have coexisted with the semithematics **-je/o-/-i-/-ī-**. These verbs may be deverbatives – normally Iteratives or Causatives – or Denominatives.

NOTE. They served especially to form verbs from nouns and adjectives, as **wesnóm**, *price*, and **wesnējō**, *value* (cf. Skr. *vasna-yá*), **nōmṇ**, *name*, **nōmṇjō**, *name* (cf. Gk. *onomainō*, Got. *namnjan*), or **melit**, *honey*, **młitjō**, *take honey from the honeycomb* (as Gk. *blíttō*), etc.

The deverbative inflection could have **-je/o-**, **-éje/o-**, or its semithematic variant.

NOTE 1. The State or Status value of these verbs is a common IE feature mainly found today in Balto-Slavic dialects, with verbs in **-ē-** and **-ā-**, whose inflection is sometimes combined with thematic **-je/o-**.

NOTE 2. About the usual distinction in IE manuals of **-éje/o-** vs. **-éje/o-**, the former is apparently attested in Anatolian, Indo-Iranian, Greek and Armenian (cf. Arm. Gen. *síroy*, “*love*”, *sírem*, “*I love*” < ***keire-jé-**); Greek loses the **-j-** and follows (as Latin) the rule ‘*uocālis ante uocālem corripitur*’, what helps metrics. However, Greek had probably a present with long **ē** (as in non-liquid future and perfect). Mycenaean doesn’t clarify the question; moreover, it is often accepted that forms like O.Ind. in **-ayati** are isolated. For pragmatic purposes, Modern Indo-European should follow always an ending **-éje/o-**, which fits better into a North-West IE reconstruction and into Western poetry, which follows the Classical Greek and Latin metrics, as it is not so easy to include **lubhéjeti** (with three syllables) in the common classic hexameter... However, for modern dialectal purposes (i.e. to write in Hellenic, Aryan or Anatolian) it is probably safe to assume a common, old PIE dialectal (and limited) trend to use **-éje/o-**.

3. Stems in **-u-** are rarely found in the Present, but are often found in the Preterite and Perfect stems.

NOTE. Stems in **-u-** have, thus, an opposed behaviour to those in **-i-**, which are usually found in Present and rarely in Preterite and Perfect.

In Present stems, **-u-** is found in roots or as a suffix, whether thematic or athematic (but not semithematic), giving a stem that may normally appear as the general stem of the verb. It is therefore generally either part of the root or a stable lengthening of it.

NOTE. Common exceptions to this general rule concerning Late PIE verbs in **-u-**, usually general stems, are different pairs **gheu-/ghō-**, **pleu-/plō-**, etc.

4. Root or stems in **-ē-**, Athematic or (usually) Thematic mixed with **-i-**. Sometimes the **-ē-** is part of the Root, sometimes it is a suffix added or substituting the **-e-** of the Stem.

They may be verbs of State; as, **albhējō**, *be white*, with a stative value. There are also Iterative-Causatives; Denominatives are usually derived from thematic adjectives in **e/o**.

NOTE. These are probably related to stems in **-i-** (i.e., in **-je/o-**).

Other examples include **lubhējō**, *be dear, be pleasing*; **rudhējō**, *blush, redden*; **galējō**, *call* (not denominative), **monējō**, *remind, advise*, **senējō**, *be old, etc.*

5. Roots or stems in **-ā-**, Athematic or mixed with **-i-**. They are spread throughout the general Verb system; as, **bhā(jō)**, *draw*; **dukā(jō)**, *drag, draw*; **amā(jō)**, *love, etc.*

NOTE. Some find apparently irregular formations as Lat. *amō*, “*I love*”, from an older **amā-je/o-**, mixed with **-i-**; however, they are sometimes reconstructed (viz. Adrados) as from ***amō**, i.e. in **-ā** without ending (cf. Lat. *amas, amat*,...); against it, compare common IE formations as Umb. *suboca*, “*invoke*”, Russ. *délaiu*, and so on.

About their Meaning, they may be (specially in Latin) Statives or Duratives, and sometimes Factitives opposed to Statives in **-ē-** (cf. Hitt. *maršaḫ-marše-*, Lat. *clarāre-clarēre, albāre-albēre, nigrāre-nigrēre, liquāre-liquēre*). But there are also many deverbatives in **-ā-** without a special value opposed to the basic verb.

Stems in **-ā-** help create Subjunctives, Aorists, and Imperfectives. **-ā-** is less commonly used than **-ē-** to make Iterative and Stative deverbatives and denominatives.

NOTE. They are probably related to verbs in **-i-** (i.e. in **-je/o-**), as with stems in **-ē-**.

7.4.3. THE AORIST STEM

I. AORIST STEM FORMATION PARADIGM

1. The Aorist describes a completed action in the past, at the moment when it is already finished, as e.g. Eng. *I did send/ had sent that e-mail before/when you appeared*.

NOTE. As opposed to the Aorist, the Imperfect refers to a durative action in the past (either not finished at that moment or not finished yet), as e.g. Eng. *I sent/ was sending the e-mail when you appeared*.

2. The Aorist is made usually in Ø/Ø, Secondary Endings, Augment and sometimes Reduplication; as, 1st. P.Sg. **(é)bheróm**.

NOTE. Augment was obviously obligatory neither in Imperfect nor in Aorist formations in Late PIE (cf. Oldest Greek and Vedic Sanskrit forms), but it is often shown in most PIE grammars because (Brugmannian) tradition in IE studies has made Augment obligatory for PIE, even if a) the Aorist was mostly a literary resource, b) only Greek and Sanskrit further specialized it, and c) only later made the Augment obligatory. Following Meier-Brügger, “The PIE augment ***(h₁)é** was quite probably an adverb with the meaning ‘at that time’ and could be employed facultatively

where indicative forms of present and aorist stems were combined with secondary endings to produce a clear past tense (...) The establishment of the augment as a norm in the indicative aorist, indicative imperfect, and indicative pluperfect took place in a post-Proto-Indo-European phase. Other IE languages such as Latin or Germanic developed their own suffixal means of indicating past tense forms". It is clear, then, that for a Modern Indo-European based on the North-West IE it would be more reasonable to select an 'Augment' (if we had to) in **pro-**, as common Celtic **ro-**, in **kom-**, as regular Germanic **ga-**, or in **per-** as frequently found in Latin, instead of the Graeco-Aryan in **é-**.

3. The opposition of Present and Preterite stems is made with:

- a. Present Reduplicated Root vs. Aorist Basic Root; as, **si-stā-mi**, *I stand*, vs. **stā-m**, *I stood*; **dhí-dhē-mi**, *I do, I put*, vs. **dhē-m**, *I did*;
- b. Thematic Present vs. Athematic Aorist in **-s**; as, **leiq-ō**, *I leave*, **lēiq-s-m**, *I left*.
- c. Both stems Thematic, but with different vowel grade, and often stress on the desinence; as, **leiq-ō**, *I leave*, **liq-óm**, *I left*.

NOTE. Every stem could usually function as Present or Aorist in PIE, provided that they were opposed to each other. And there could be more than one Present and Aorist stem from the same Root; as, for Thematic Present **leiq-ō**, *I leave*, which shows two old formations, one Athematic extended **lēiq-s-m** (the so-called sigmatic Aorist), and other Thematic zero-grade **liq-óm**.

4. There was a logical trend to specialize the roles of the different formations, so that those Stems which are rarely found in Present are usual in Aorists. For example, Thematic roots for the Present, and Aorists extended in (athematic) **-s-**.

NOTE. In fact, there was actually only one confusion problem when distinguishing stems in Proto-Indo-European, viz. when they ended in **-ē-** or **-ā-**, as they appeared in Presents and Aorists alike. It was through oppositions and formal specializations of individual pairs that they could be distinguished; as, adding a present mark like **-je/o-**.

II. AORIST ROOT STEM

1. Athematic Aorist Root stems were generally opposed to Athematic Reduplicated Present stems, but it wasn't the only possible opposition in PIE.

NOTE. Such athematic Root stems aren't found with endings in consonant, though.

2. Monosyllabic Root Aorists are usually opposed to Presents:

- a. In **-neu-**; as, **kļneumi/kleum**, *hear*, or **qrneumi/qerm**, *make, do*; etc.

NOTE. Derivative **kļneumi** is difficult to reconstruct with certainty; often interpreted as with infix **-n-**, i.e. **kļ-n-eu-**, it has been proposed that it is a zero-grade suffixed **klu-neu-**, cf. Buddh. Skr. *śrun*; Av. *surunaoti*; Shughni *çin*; O.Ir. *cluinetar*; Toch. A and B *kāln*. Skr. *śRno-/śRnu-* < **kluneu-/klunu-* would show a loss of *u* analogous to the loss of *i* in *tRtīya-* ‘third’ < IE *tritijo-*.

b. Reduplicated or in **-ske/o-**, **-je/o-**; as, **cṃskō/cām**, *come*;

c. Thematic Present; as, **ghewō/ghewm**, *pour*.

3. Disyllabic Root Presents show a similar opposition pattern; as, **gignōskō/gnōm**.

4. The thematic vowel is the regular system in inflection, i.e. Present Sg. Active with full vowel, and Ø in the rest.

5. Thematic Aorist stems are the same ones as those of the Present, i.e. full-grade and zero-grade, e.g. **leiq-** and **liq-**, always opposed to the Present:

a. The **liqé/ó-** form (i.e. zero-grade) is usually reserved for the Aorist stem; as, **pṇdh-skō/pṇdh-ó-m**, *suffer*.

b. The **leiqe/o-** form (i.e. full-grade) is rarely found in the Aorist – but, when it is found, the Present has to be logically differentiated from it; e.g. from the Imperfect with Augment, viz. from **bhertum**, *to carry*, paradigm Pres. **bhéreti/bherti**, *he carries*, Imperf. **bherét/bhert**, *he was carrying*, Aorist **ébheret/ébhert**, *he carried*.

III. AORIST REDUPLICATED STEM

1. Aorist Reduplicated stems – thematic and athematic – are found mainly in Greek and Indo-Iranian, but also sporadically in Latin.

NOTE. Southern dialects have also (as in the Present) a specialized vowel for Reduplicated Aorists, v.i., but in this case it is unique to them, as the other dialects attested apparently followed different schemes.

2. Aorist Thematic Reduplicates have a general vowel **e** (opposed to the **i** of the Present), zero-grade root vowel (general in Aorists); as, **chenmi/che-chṇ-om**, *murder, kill*; **weqmi/we-uq-om**, *say, speak*.

In roots which begin with vowel, reduplication is of the type *vowel+consonant*.

NOTE. This resource for the Aorist formation seems not to have spread successfully outside Graeco-Aryan dialects; however, the opposition of Present Reduplication in **i**, Preterite Reduplication in **e** (cf. Perfect Stem) was indeed generalized in Late Proto-Indo-European.

3. Some roots which begin with vowel form also Reduplicated Aorists; as **ag-ag-om** (as Gk. ἡγαγον, where $\eta < \bar{a} < *é + a$ – Wackernagel, hence $*é-agagom$).

4. Also, Causatives form frequently Reduplicated Aorists, cf. Lat. *momorit*, *totondit*, *spopondit*, etc., or O.Ind. *atitaram*, *ajijanam*, etc.

IV. AORIST CONSONANT STEM

1. As we have seen, Present Thematic stems in **-s-** are often Desideratives (also used as immediate Futures). The same stems served as Aorists with secondary endings (usually reserved for the Aorist), generally called the Sigmatic Aorist.

NOTE. Forms in **-se/o-** are often found in Slavic; as, O.C.S. *vedq/vęsŭ*, *nesq/nęsŭ*, *pějŭ/pěxŭ*, *moljŭ/molixŭ*, *nesq/mŭněxŭ*, etc. Cf. also Skr. *ávrkṣam*, *ádhuḥṣas*, *áruḥṣas*, etc. For the Future stem coming from sigmatic aorist stem, Adrados (1996) states: “Homeric Greek aorists *dúseto*, *bésseto*, are exactly parallels to Future *dúsomai*, *bésomai*, remains of the same sigmatic thematic stem, and not remade forms as Leumann (1952-53) and Prince (1970) proposed”.

2. The **-s-** was added:

a. to a Consonant ending and lengthened root vowel, in contrast with the Present in full vowel;

b. to a vowel **ā**, **ē**, **ō**, with the same stem as the Present, or to the noun from which the verb is derived. Those in **ē** and **ā** must have Ø root grade.

There was also a second Aorist mark: an **-e-** before the **-s-** (possibly an older Aorist mark, to which another mark was added); as, **alkējō/alkēsom**, *grow*, from **al-**; **mŋjō/mnāsom**, *consider*, from **men-**; etc.

NOTE. Thematic Aorist stems are mostly used as Presents in Indo-Iranian, Greek, Slavic, and Latin, which show still another Aorist stem for sigmatic aorists. Therefore, thematic stems in **s-** are usually Future stems in Modern Indo-European.

3. Athematic stems in **-s-** were widespread in PIE. They were originally added to the Root, whether monosyllabic or disyllabic, in consonant or vowel, opposed to the Present.

Monosyllabic or Disyllabic Aorist root stems in **i**, **u**, **ā**, **ē**, **ō**, have a fixed vowel grade (like most Athematic Root Aorists); e.g. the 3rd P.Pl. **plēnt**, from redupl. **plí(m)plēmi**, *fill*

(i.e. in zero-grade/full-grade), or 3rd P.Pl. **pewisnt** from **pōnāmi**, *purify* (i.e. in full-grade/zero-grade).

The most frequent Aorist stems in PIE were monosyllabic roots ending in consonant or sonant. They usually have in Graeco-Aryan lengthened root vowel in the active voice, and zero-grade in the rest; as, **leiq-**, *leave*, from which **liq-ó-m** and **lēiq-s-m**; so too from **qer-**, *make*, giving **qēr-s-m**; etc. Lengthened vocalism in sigmatic aorists was probably an innovation in Late PIE.

NOTE. For lengthened grade, cf. maybe Latin forms like *dīxī* (<***dēik-s-**), *uēxī* de *uehō* (cf. O.Ind. *ávāk-ṣam* from *váhāmi*, “drive”), *rēxī* from *regō*, etc., or Toch. B *preksa*, A *prakās* (<***prēk-s-ā**), according to Lindeman (1968).

The general system of Present vs. Sigmatic Aorist stems may be so depicted: **-ēje/o-** vs. **-ēs-**; **-āje/o-** vs. **-ās-**; **-je/o-** vs. **-is-**; **-je/o-** vs. **-ās-**; **-je/o-** vs. **-ēs-**; and **-e/o-** vs. **-ās-**.

NOTE 1. Aorist stem formation in **-i-**, **-ē-**, **-ā-** is still less common. Other common formations in **-s-** include the following: In **-is-** (Latin and Indo-Aryan), **-es-** (Greek), as **genis-** from **gen-**, *beget*, **wersis-** from **wers-**, *rain*; also, cf. Lat. *amaui* (*amāuistī*, and *amāuerām* <*-*wisām*), etc. In **-sā-**, attested in Latin, Tocharian and Armenian. In **-sē-**, thematic **-sje/o-**, etc.

NOTE 2 Aorists in **-s-** are then a modern feature of Late PIE, found in all its dialects (as Imperfects or Perfects in North-West IE), but for Germanic and Baltic, possibly the dialects spoken far away from the core of the remaining *dialect continuum*.

4. Stems in **-t-** function usually as Aorists opposed to Present stems, especially in Latin, Italic, Celtic and Germanic.

NOTE. While the use of **-t** for persons in the verbal conjugation is certainly old, the use of an extension in **-t-** to form verbal Stems seems to be more recent, and mainly a North-West IE development.

5. Stems in **-k-** are rare, but there are examples of them in all forms of the verb, including Aorists.

V. AORIST VOWEL STEM

1. Aorists in **ā**, **ē**, are very common, either as pure stems with Athematic inflection, or mixed with other endings, e.g. **-u-**.

NOTE. As already said, stems extended in **-u-** are rarely found in Present stems, but are frequent in Preterites, and the contrary has to be said of stems in **-i-**. For more on these formations, v.s. the Present Vowel Stem section.

When opposed to a Present, stems extended in **-ā**, **-ē**, are often Aorists.

2. Possible oppositions Present Stem Vowel vs. Aorist Stem Vowel include:

A. Present Thematic in **-i-** vs. Aorist Athematic in **-ē**, **-ā**; as, **mḥjō/mḥēm**, *consider*, **alkējō/alkām**, *be hungry*.

B. Present Thematic in **e/o** vs. Aorist Athematic in **-ē**, **-ā**; as, **legō-legēm**, *collect*.

3. The use of stems in **-u-** is usually related to the Past, and sometimes to the Perfect. Such endings may appear as **-u-**, often **-āu-**, **-ēu-**; as, **plēu-**, from **plē-**, **sēu**, from **sē-**, **gnōu-**, from **gnō-**.

4. Stems in **-i/-ī** are scarcely used for Aorists, but it appears in general stems used for Present and Aorist stems, cf. **awisdhijō/awisdhiwom**, *hear*, Lat. *audīo*, *audīui*.

7.4.4. THE PERFECT STEM

The Perfect stem (opposed to the Present) has **ō** or lengthened root vowel and special Perfect endings, Sg. **-a**, **-tha**, **-e**; 3rd Pl. **-r**. In Gk. and Ind.-Ira., the stem was often reduplicated, generally with vowel **e**.

NOTE. Originally the Perfect was probably a different Stative verb, which eventually entered the verbal conjugation, meaning the state derived from the action. PIE Perfect did not have a Tense or Voice value; it was later opposed to the *Pluperfect* (or Past Perfect) and became Present, and to the Middle Perfect and became Active.

I. Root vowel is usually **ō/ø**, i.e. o-grade in the singular and zero-grade in the plural; as, (Pres. 1stP.Sg., Perf. 1stP.Sg., Perf.1stP.Pl), **gignō-mi/gé-gon-a/ge-gṇ-mé**, *know*; **bhindh-ō/bhondh-a/bhṇdh-mé**, *bind*; **bheudhō/bhoudh-a/bhudh-mé**, *bid*;

NOTE. 1) for different formations, cf. **kan-ō/(ké)kan-a/kṇ-mé**, *sing*, cf. O.Ir. *cechan*, *cechain*, *cechuin* (and *cechain*), *cechnammar*, *cechn(u)id*, *cechnatar*.; **d-ō-mi/de-d-ai**, *give*, cf. O.Ind. *dadé*, Lat. *dedī*. 2) For examples of root vowel **ā**, cf. Lat. *scābī*, or Gk. *τεθῆλα*, and for examples with root vowel **a**, cf. Umb. *procanurent* (with ablaut in Lat. *procinuerint*) – this example has lost reduplication as Italic dialects usually do after a preposed preposition (cf. Lat. *compulī*, *detinūi*), although this may not be the case (cf. Lat. *concinui*). For subgroups of conjugations, v.s.

NOTE 2. There are also (mainly dialectal) Perfects with lengthened Root vowel; as, from Latin **sedē-jō**, **sēd-a**, *sit*; **ed-ō**, **ēd-a**, *eat*; **cem-jō**, **cēm-a**, *come*; **ag-ō**, **āg-a**, *act*; from Germanic, **sleb-ō**, **sésleb-a**, *sleep*; etc.

II. The Endings of the Perfect are **-a**, **-tha**, **-e**, for the singular, and **-mé**, **-(t)é**, **-(ē)r**, for the plural.

III. Reduplication is made in **e**, and sometimes in **i** and **u**.

NOTE. Apparently, Indo-Iranian and Greek dialects made reduplication obligatory, whereas North-Western dialects didn't; but, compare nonobligatory reduplication in **voida**, from **weid-**, cf. for **woisda** (<**void-th₂e*), O.Ind. *véttha*, Gk. (*w*)*oīstha*, Goth. *waist*. Cf. also Gk. *ἐννοκα*, Lat. *sēuī* (which seems old, even with Goth. *saiso*), Lat. *sedī*, from *sedeō* and *sīdo*, which don't let us reconstruct when is from PIE **sesdāi**, and when from **sēdāi**.

7.4.5. THE FUTURE STEM

1. Future stems were frequently built with a Thematic **-s-** ending, although not all Indo-European dialects show the same formations.

NOTE. The Future comes probably from Late PIE Desiderative-Causative Present stems, usually formed with extensions in Thematic **-s-** (and its variants), which became with time a regular part of the verbal conjugation in some dialects, whilst disappearing in others; e.g. **weid-sō**, “*wish to see*”, as Lat. *vīsere*, Goth. *gaweisōn*, O.S. O.H.G. *wīsōn*, “*visit*”, from **weid-**, (cf. **widējō**, *see*). In fact, whether using this formation or not, all Indo-European languages tended to differentiate the Present from the Future Tense. Usual resources found in Indo-European languages to refer to the future are 1) the *Present as Immediate Future*, 2) the *Present Subjunctive or Aorist with prospective value*, 3) *different Desiderative formations in Present*, and 4) *Verbal Periphrasis*.

Future stems were usually made in Proto-Indo-European dialects as follows:

- a. With a simple Athematic **-s**, or extended Thematic **-se/o-**, **-sje/o-**, or **-sēje/o-**.
- b. With root vowel **e**, i.e. in full-grade.
- c. With or without reduplication.

NOTE. Cf. for a common origin of the future in **-s-**, Sanskrit (and Baltic) futures in **-sje/o-** (cf. Skr. *dā-ṣyā-mi*, Lith. *dou-siu*, “*I will give*”), Doric Greek in **-sēje/o-**, **-sje/o-**, Classical Greek and Archaic Latin in **-se/o-** (cf. O.Lat. *faxō*, **dhak-sō**, “*I will make*”, O.Lat. *peccas-sō*, from *peccāre*, Lat. *erō*, “*I will be*”, from **esō**, from IE **es-**, *be*, etc.), and Old Irish common reduplicates in **-s** (cf. subj. *gessti*, fut. *gigessti*). Also, some more dialectal additions are found appearing before the **-s**-edings; as, **-i-s-** in Indo-Iranian and Latin, **-e-s-** in Greek and Osco-Umbrian.

2. In Modern Indo-European, the Future is regularly made by adding a Thematic **-s-** (usually **-sje/o-**), following – if possible – the attested common vocabulary.

NOTE. The Future stem in **-s-** is found neither in Germanic and Slavic dialects, nor in Classic Latin, which developed different compound futures. However, Indo-Iranian, Baltic and Greek show almost the same Future stems (along with similar formations in Archaic Latin, Osco-Umbrian and Old Celtic dialects), what means that the Future stem had probably a common (but unstable) pattern already developed before the first migrations, still in a common Late PIE. Apparently, then, Germanic and Slavic dialects, as well as the systematized Classic Latin, didn't follow it or later substituted it with their own innovative formations. Another common resource of early PIE dialects to indicate future tense was to use the subjunctive mode of the aorist stem.

For Germanic future compounds, compare general Germanic from PIE **wṛtō**, *turn*, PGmc. *werþō*, “become, turn into” (cf. Goth. *wairþan*, O.S., O.Du. *werthan*, O.N. *verða*, O.E. *weorðan*, O.Fris. *wertha*, O.H.G. *werdan*, Eng. *worth*, Ger. *werden*), from PIE **wer-**, *turn*. Also, **sk(e)lō**, Gmc. *skulō*, “owe, must” (cf. Goth. *skulan*, O.S. *sculan*, O.N., Swed. *skola*, O.H.G. *solan*, M.Du. *sullen*, Eng. *shall*, Ger. *sollen*), with a dialectal meaning shift from ‘obligation’ to ‘probable future’, related to O.E. *scyld* “guilt”, Ger. *Schuld*, also in O.N. *Skuld*; cf. O.Prus. *skallisnan*, Lith. *skeleti* “be guilty”, *skilti*, “get into debt”. Also, for Eng. “will”, from Gmc. *welljan*, “wish, desire”, compare derivatives from PIE **wel-**.

In Osco-Umbrian and Classic Latin, similar forms are found that reveal the use of compounds with the verb **bheu-**, *be exist*, used as an auxiliary verb with Potential-Prospective value (maybe a common Proto-Italic resource), later entering the verbal conjugation as a desinence; compare Osc.-Umb. *-fo-*, Faliscan *carefo*, *pipafo*, or Lat. *-bo-*, *-be-* (cf. Lat. *ama-bo*, from earlier **amāi bhéwō*, or *lauda-bo*, from **laudāi bhewō*).

The common Slavic formation comes also from PIE **bheu-**, *be exist grow*, with extended **bhūtjō**, *come to be, become*, found in BSL *byt-* (cf. O.C.S. *бѣи*, Russ. *быть*, Cz. *býti*, Pol. *być*, Sr.-Cr. *bíti*, etc.), and also in Lith. *būti*, O.Ind. *bhūtíṣ*, and Cel. *but-* (O.Ir. *buith*). Also, with similar meanings and forms, compare Gmc. *biju*, “be”, (cf. Eng. *be*, Ger. *bin*), or Lat. *fui*, “was”, also in zero-grade **bhutús**, “that is to be”, and **bhutūros**, *future*, as Lat. *futūrus* (cf. *gn̥tūrā*, Lat. *nātūra*), or Gk. *φύομαι*; from the same root cf. Goth. *bauan*, O.H.G. *buan*, “live”.

3. Conditional sentences might be built in some Proto-Indo-European dialects using common Indicative and Subjunctive formations. In Modern Indo-European, either such archaic syntax is imitated, or an innovative formation is used, viz. the Future Stem with Secondary Endings.

NOTE. Most IE dialects show a newer possibility for conditional inflection, the use of “a past form of the Future stem”, cf. Eng. *I will/I would*, Deu. *Ich werde/Ich würde*, Spa. *haré/haría*, Pol. [past] + *bym, byś, by*, etc. To apply this concept to the Proto-Indo-European verbal system (with stems and verb-endings) would mean to use the Future Stem with secondary endings.

However, conditional sentences might also be made with the available Late PIE resources, using periphrases with Indicative and Subjunctive (as Classic Latin), or with the Subjunctive and Optative (as Classical Greek), etc. Whether MIE speakers prefer to use the modern common Indo-European type of Conditional Inflection, or different periphrasis of PIE indicatives, subjunctives and optatives, is a practical matter outside the scope of this grammar.

Examples of the different conditional formations are as follows:

- The system proposed was developed in the earliest attested Late PIE dialect, Sanskrit, where the Conditional was built using the Future Stem (in thematic suffix *-s-*, already seen) with Secondary Endings; cf. Skr. *dā-ṣyá-ti*, “he will give”, vs. *dā-ṣyá-t*, “he would give”, from IE **dō-**, Skr. *bhavi-ṣyá-mi*, “I will be”, *bhavi-ṣyá-m*, “I would be”, from IE **bheu-**.
- In Ancient Greek, the Optative is found as modal marker in the antecedent, which defines the conditional sense of the sentence; cf. εἰ πράσσοι τοῦτο καλῶς ἂν ἔχοι, “if he were to do that, it would turn out well”.
- In Germanic dialects, the conditional is usually made with a verbal periphrasis, consisting of the modal (future) auxiliary verb in the past, i.e. *would* (or *should*, also *could*, *might*), and the infinitive form of the main verb, as in *I will come*, but *I would come*; compare also Ger. (fut.) *Ich werde kommen*, (cond.) *Ich würde kommen*.
- While Latin used the indicative and subjunctive in conditional sentences, Romance languages developed a conditional inflection, made by the imperfect of Lat. *habēre*, cf. V.Lat. (fut.) *uenire habeo*, “I have to come”, V.Lat. (cond.) *uenire habēbam*, “I had to come”, as in Fr. (fut.) *je viendr-ai*, (cond.) *je viendr-ais*, Spa. (fut.) *yo vendr-é*, (cond.) *yo vendr-ía*, etc., cf. also the Portuguese still separable forms, as e.g. Pt. *fazê-lo-ia* instead of “*o fazería*”. Modern Italian has substituted it by another similar ending, from the perfect of Lat. *habēre*.
- In Slavic languages, a derivative of **bheu-** is used, namely Russ. *бы*, Pol. *bym, byś, by*, etc.

Full conditional sentences contain two clauses: the Protasis or condition, and the Apodosis or result, a matter studied in the section on Proto-Indo-European Syntax.

7.4.6. OTHER FORMATIONS

MIDDLE PERFECT AND PAST PERFECT

a. It was a common resource already in the common Proto-Indo-European language to oppose a new Perfect formation to the old one, so that the old became only Active and the newer Middle. Such formations were generalized in the southern dialects, but didn't succeed in the northern ones.

The new Perfect Middle stem was generally obtained with the Perfect stem in zero-grade and middle endings.

b. The Past Perfect or Pluperfect was also a common development of some dialects, opposing the new perfect with Secondary Endings (which mark a past tense) to the old perfect, which became then a Present Perfect.

THE COMPOUND PAST

A special Past or Preterite is found in IE dialects of Europe (i.e., the North-West IE and Greek), sometimes called *Future Past*, which is formed by two elements: a verbal stem followed by a vowel (-ā, -ē, -ī, -ō), and an auxiliary verb, with the meanings *be* (**es-**), *become* (**bheu-**), *do* (**dhē-**), or *give* (**dō-**).

NOTE. Although each language shows different formations, they all share a common pattern and therefore have a common origin traceable to Late PIE, unstable at first and later systematized in the early proto-languages.

The Compound Past may be studied dividing the formation into three main parts: the forms of the first and second elements and the sense of the compound.

1. The First Element may be

- a. A Pure Root.
- b. Past Stem with the same lengthening as the rest of the verb.
- c. Past Stem lengthened, but alternating with the Present stem, i.e. normally Present zero-grade vs. Past in full-grade.
- d. Past Stem lengthened vs. Thematic Present (and Aorist).

NOTE. Originally, then, Compound Pasts are derived from a root or a stem with vowel ending, either the Present or the Aorist Stem. They are Pasts similar to the others (Imperfects and Aorists), but instead of receiving secondary endings, they receive a secondary stem (like the Perfect).

2. The second element is an auxiliary verb; as, **dhē-** in Greek and Germanic, **bheu-** in Latin and Celtic, and **đō-** in Balto-Slavic.

3. Their specific Past meaning vary according to the needs of the individual dialects.

7.5. MOOD STEMS

7.5.1. INDICATIVE

The Indicative expresses the Real Action, in contrast to the other moods, which were specialized in opposition to the basic Indicative mood. It appears in the Four verbal Stems.

7.5.2. IMPERATIVE

The Imperative had probably in Middle PIE the same basic stem of the Indicative, and was used without ending, in a simple Expressive-Impressive function, of Exclamation or Order. They were the equivalent in verbal inflection to the vocative in nominal declension.

Some Late PIE dialects derived from this older scheme another, more complex Imperative system, with person, tense and even voice.

It is also old, besides the use of the pure stem, the use of the Injunctive for the Imperative in the 2nd person plural; as, **bhere!** *carry! (thou)*, **bhérete!** *carry! (you)*.

The so-called Injunctive (Beekes 1995) is defined as the Bare Stem, with Secondary Endings, without Augment. It indicated therefore neither the present nor the past, thus easily showing Intention. It is this form which was generally used as the Imperative.

1. The Bare Stem for the Imperative 2nd P. Sg. is thus general;
2. The Injunctive (Bare Stem + ending) forms the 2nd P. Pl.; as well as
3. the 3rd P. Sg. and the 3rd P. Pl., which have a special ending **-tōd**.

NOTE. An ending **-u**, usually ***-tu**, is also reconstructed (Beekes 1995); the inclusion of that ending within the verbal system is, however, difficult. A common IE ending **-tōd**, on the other hand, may obviously be explained as the introduction into the verbal conjugation of a secondary

Ablative form of the neuter pronoun **tod**, *this*, a logical addition to an Imperative formation, with the sense of ‘*here*’, hence ‘*now*’, just as the addition of **-i**, ‘*here and now*’ to oppose new endings to the older desinences (Adrados 1996). This formation was further specialized in some dialects as Future Imperatives.

The Imperative in Modern Indo-European is made with the Present Stem and Secondary Endings, and is thus generally divided into two main formations:

a. The old, athematic Imperatives; as in **ei!** *go!* from **eími**; or **es!** *be!* from **esmi**.

NOTE. In Root Athematic verbs, plural forms show \emptyset vowel and accent on the ending; as, **s-éntōd!** *be they!*

A common Athematic desinence, along with the general zero-ending, is **-dhi**, PII (and probably PIE) **-dhí**, which seems to be very old too; as, **i-dhi!** *go!*, **s-dhí!** *be!*

b. Thematic Imperatives; as **bhere!** *carry!*, **age!** *do! act!*, etc.

		<i>Athem.</i>	<i>Them.</i>
Sg.	2.	\emptyset , (-dhi)	-e
	3.	-tōd	-etōd
Pl.	2.	-te	-ete
	3.	-ṇtōd	-ontōd

NOTE. In Late PIE, only the person distinctions seem to have been generalized. Middle forms include injunctive forms plus middle desinences; as, 2nd P. Sg. **-so** (cf. Gk. *lúou*< **lúe-so*, Lat. *sequere*< **seque-se*), 2nd P. Pl. **-dhwe**, cf. Gk. *lúes-the*, O.Ind. *bháva-dhvam*.

7.5.3. SUBJUNCTIVE

1. The Subjunctive is normally Athematic, usually in **-ā**, **-ē** and sometimes **-ō**, and always opposed to the Indicative. There are also Subjunctives in **-s**, probably newer than those in **-ē**, **-ā**.

NOTE. No subjunctive is found in Balto-Slavic, which could mean that it was an innovation of Late PIE, or else that it was lost in that dialect.

2. The Subjunctive Stem is made opposing it to the Indicative Stem, usually following these rules:

a. Indicative Athematic vs. Subjunctive Thematic; as, **esmi**, *I am*, **esō**, (*if*) *I be*.

b. Indicative Thematic vs. Subjunctive with Lengthened Thematic Vowel (not root vowel!); as, Ind. **bhèresi**, *you carry*, Sub. **bhērēsi**, *you may carry*, (*if*) *you carried*.

NOTE. Following Meier-Brügger, “[t]he subjunctive suffix is PIE *-e-, In the case of athematic verbal stems, the rule is [where K=Consonant] -K+Ø- (indicative stem), -K+e- (subjunctive stem); correspondingly, that of thematic verbs is -e+Ø- (indicative stem), -e+e- (subjunctive stem). The formal identity of the athematic subjunctive stem (e.g. PIE **h₁és-e-*) to the thematic indicative stem (e.g. the type PIE **b^hér-e-*) is no coincidence. This identity may be understood if we suppose that the subjunctive with -e- was first an action type. The voluntative/prospective meaning was neutralized when the primary endings, which emphasized the present tense, and thus the immediacy of the action type, were used and could give the impetus for the formation of indicative -e- stems. At the same time, the -e- stem voluntative/prospectives proved very lasting and established themselves, together with the optatives, as a mode which could be attached to every stem, lastly even the indicative -e- stems”.

3. In Thematic Verbs the Subjunctive is made from the Present Stem, but in Athematic Verbs it is usually made from the Bare Stem; as, **kl̥neumi**, Subj. **kl̥womi**.

7.5.4. OPTATIVE

1. The Optative mood is a volitive mood that signals wishing or hoping, as in English *I wish I might*, or *I wish you could*, etc.

2. The Optative is made with Secondary Endings, usually with zero-grade root vowel, adding the following suffix:

- 1) In the Athematic flexion, a general alternating full-grade -**jē** in the singular, and zero-grade -**ī-** in the plural of the active voice, and -**ī-** in the middle voice; as, **chnjēt**, *may he strike*, **chnīnt**, *may they strike*.

NOTE. “The stress was on the ending in the 1st and 2nd pl. forms of the mobile paradigms, and evidently also in the sg. forms of the middle voice, but not in the 3rd pl. forms, where a number of indications point to original root stress”, as Lat. *velint*, Goth. *wileina*, and O.C.S. *velęto*. But, Ved. -*ur* appears “in all those athematic forms where the stress is either on the root or on a preceding syllable”. Kortlandt (1992), see <<https://openaccess.leidenuniv.nl/handle/1887/2878>>.

- 2) When the stress is fixed, it is -**oi-** in the thematic flexion, and -**ī-** in the athematic (e.g. sigmatic aorists); as, **bheroit**, *may he carry*.

NOTE. This is probably the thematic -**o-** plus the zero-grade Optative suffix -**i-** (<**i-h₁-*), i.e. originally **-o-ih₁-*, or maybe **-o-jh₁-*, see Hoffmann (1976). Optative endings of the 1st P. Pl. and

especially the 3rd P. Pl. O.Ind. (-*yam*, -*ur*) and O.Gk. (*-*ia*, *-*ien*) yield a reconstruction of vocalic sonants in PII and PGk, i.e. Them. *-*oj-ṛ*, *-*oj-ṛt*, Athem. *-*ij-ṛt*.

3. The Athematic Optative formations had usually mobile stress, with stress on the Optative suffix, and on the ending in the 2nd and 3rd Pers. Plural.

7.6. THE VOICE

7.6.1. ACTIVE VOICE

1. The characteristic Primary Endings are -***mi***, -***si***, -***ti***, 3rd Pl. -***nti***, while the Secondary don't have the final -***i***, i.e. -***m***, -***s***, -***t***, 3rd Pl. -***nt***.

NOTE. The secondary endings are believed to be older, being originally the only verbal endings available. With the addition of a deictic -***i***, which possibly indicated originally “*here and now*”, the older endings became secondary, and the newer formations became the primary endings.

Compare a similar evolution in Romance languages from Lat. *habere*, giving common Fr. *il y a*, “*there (it) is*”, or Cat. *i ha*, “*there is*”, while the Spanish language has lost the relationship with such older Lat. *i*, “*there*”, viz. Spa. *hay*, “*there is*” (from O.Spa. *ha+i*), already integrated within the regular verbal conjugation of the verb *haber*.

2. These Desinences are used for all verbs, whether Athematic or Thematic; as, ***esti***, *he is*, or ***bhēreti***, *he carries*. However, in the 1st P. Sg., Thematics end in -***ō***; as, ***bherō***.

NOTE. These endings in -***ō*** are probably remains of an older situation, in which no ending was necessary to mark the 1st P. Sg. (that of the speaker), and therefore, even though a desinence -***m*** became general with time, the older formations prevailed, along with a newer Thematic -***o-mi***.

7.6.2. MIDDLE VOICE

1. The Middle Endings are generally those of the Active voice with a characteristic Middle voice -***o***, in which the Primary Endings have an additional -***i***.

2. In the Moods, the endings attested are the same.

NOTE. Only dialectally were some new endings developed to differentiate the subjunctive.

7.6.3. PASSIVE VOICE

1. The Passive voice was a development of early North-West IE dialects; it seems therefore useful to specialise a common modern Indo-European grammatical formation, based on old PIE endings.

2. The **-r** ending was usual in the Middle formations of Proto-Indo-European, and it had also a specific impersonal value. The **-r** has therefore two uses in Indo-European:

a. The **-r** *After the Stem* had usually in PIE an impersonal value, and it was also found lengthened as **-ro**, **-roi**, **-renti**, **-ronti**, **-rontoi**, etc.

NOTE. The **-r** was used in the 3rd P. Sg. & Pl., and it was extended in **-nt-** when necessary to distinguish the plural, giving initially the impersonal forms e.g. 3rd P.Sg. **déiketor**, “*it is shown*”, and 3rd P.Pl. **déikontor**, “*they are shown*”, with the impersonal ending **-r** which was later generalized in some dialects, spreading as Mediopassives in Hittite, Italic, Celtic, Latin and Tocharian. Also, when a Middle form was needed, a Middle ending **-o** was added. The primary marker **-i** was used apparently with the same aim.

b. The **-r** *After the Ending* was usual in forms related to the so-called PIE Mediopassive Voice, attested in Latin, Osco-Umbrian, Celtic and Tocharian, as well as in Germanic, Indo-Iranian and Anatolian dialects. In Celtic, Osco-Umbrian and Latin, they replaced the Middle Primary Endings, and acquired a Passive value.

NOTE 1. The oldest traceable meaning of the endings in **-r** in Proto-Indo-European, taking the Anatolian examples, show apparently the same common origin: either an impersonal subject or, at least, a subject separated from the action, which is a meaning very closely related to the later dialectally specialized use of a Passive Voice.

NOTE 2. There are no distinctions of Primary-Secondary Passive Endings, as the Secondary formations are the same oldest Mediopassive **-o** Endings. The newer **-i** (Middle) and **-r** (Impersonal) endings were added later and spread on a dialect-to-dialect basis, some of them using and/or mixing both of them, all specializing its use.

7.7. NOUN AND ADJECTIVE FORMS

7.7.1. INFINITIVES

1. The Infinitives are indeclinable nouns with non-personal verbal functions, which can be in some dialects as many as inflection, voice, aspect and even time.

NOTE. Infinitives are, thus, old nouns reinterpreted as forming part of the verbal conjugation. As Meier-Brügger (2003) notes, “[i]t is doubtful that [old] Proto-Indo-European featured a specific infinitive suffix. The development of means of differentiation of voice, aspect, and tempus in the infinitive formations is post-Proto-Indo-European”.

2. The oldest Infinitives are the Verbal Nouns, casual forms inflected as nouns, sometimes included in the verbal inflection. A Verbal Noun is a declinable substantive, derived from the root of a verb.

NOTE. The difference in syntax is important: the verbal noun is constructed as a substantive, thus e.g. with the object in the genitive; as, **wīrī chentis**, *the murder of a man*. Such a formation is opposed to an infinitive with an accusative; as, **wīróm chentum**, *to murder (Nom.) a man*, v.i.

3. Verbal Nouns were, thus, the normal way to express the idea of a modern Infinitive in the oldest PIE. They were formed with the verbal stem and usually a nominal suffix **-ti-**; as, **statis** (<*sth₂-ti-), *standing, placing*, from **stā-** (<*steh₂-) *stand*.

NOTE. Cf. Skt *sthīti* ‘stay, sojourn’, Grk *stásis* ‘place, setting, erection [of a statue]’, Lat *statim* ‘firmly, steadfastly’, Eng. *stead*. Some IE dialects chose later between limited noun-cases of those verbal nouns for the Infinitive formation, generally Acc., Loc., Abl.; compare Lat. *-os (sibilant neuter), Gmc. *-on-om (thematic neuter), etc.

4. In Late PIE, a common Infinitive suffix **-tu-** (and dial. **-ti-**) is usually added to the accented strong verbal root, conveying the same meaning as the English infinitive; as, **stātum**, *to stay*, opposed to the weak, unaccented form in participle **statós**, *placed*.

NOTE 1. For generalized IE infinitive **-tu-**, cf. Lat. (active & passive supine) **-tum** (acc.) **-tū** (dat.-loc.) **-tui** (dat.), Gk. **-tós** (<*-tew-os), Skr. **-tus**, **-tum** (acc.), Av. **-tos** (gen.), **-tave**, **-tavai** (dat.), **-tum**, Prus. **-twei** (dat.) **-tun**, **-ton** (acc.), O.Sla. **-tŭ** (supine), Lith. **-tu**, etc.; for **-ti-**, cf. Ved. **-taye** (dat), BSl., Cel. **-ti** (loc.), Lith. **-tie** (dat.), etc.; also, in **-m-en-**, cf. Skr. **-mane**, O.Gk. **-men(ai)**, etc.

NOTE 2. A common ending **-dhwāi/-dhjāi** (Haudry) added to the Basic Verbal Stem (possibly originally related to the forms **-tu-**, **-ti-**) is the basic form behind Ved. **-dhyai**, Gk. Middle **-σθαί**, Umb. **-fi**, Toch. **-tsi**, as well as Latin gerunds and the for Germanic reconstructed **-dhjōi** (Rix 1979), all possibly related to an original middle infinitive. Other forms include **-u-**, **-er/n-**, **-(e)s-**, extended **-s-**, **-u-**, **-m-**, also Gmc. **-no-** (as Goth. *ita-n*<*edo-no-), Arm. **-lo-**, etc.

7.7.2. PARTICIPLES

1. The Participles are adjectives which have been assimilated to the verbal system, having thus verbal inflection.

NOTE. The reconstructed Proto-Indo-European shows an intense reliance on participles, and thus a certain number of participles played a very important role in the early language.

2. Those in **-nt-**, fem. **-nt-ja/ī**, are the older ones, and are limited to the Active voice and to the Present, Imperfect and Future.

In athematics it seems that a weak and strong stem coexisted in present participles, cf. **es-ont-/s-nt-**, *who exist, being*, **weq-ont-/uq-nt-**, *who speaks*, **dhe-dha-nt-**, *placing*, **jung-nt-**, *joining*.

NOTE. For **s-nt-** instead of **sent-**, cf. **ap-snt-** (for **apo-we-sent-is**) in Lat. *(ab)sent-*, Myc. pl. *(a-p)e-a-sa*, i.e. *ap-ehassai* (with *-assa-<*-nt-ihz-*). A. Morpurgo Davies (1978) considered that “[a]s far as we know, there is no reason to attribute **h₁s-ent-* to Proto-Greek”.

In thematics, a form **-o-nt-** (also **-e-nt-**) is generalized as **bher-ont-**, *who carries*.

NOTE. The suffix **-o-nt-** shows no general full-grade/zero-grade paradigm in MIE. It is safe to assume that for North-West IE, and probably also for Late PIE, as “[i]t remains to be seen whether the thematic forms were originally declined as **-ont-/*-nt-* (as in Vedic), and were only secondarily reinterpreted as **-o-nt-*”, Meier-Brügger, 2003 (Rix 1976, Szemerényi 1990).

NOTE 2. In Anatolian, however, this participle is semantically equivalent to the **-tó-** verbal adjective. Aorist active participles were formed similarly to present participles, with the aorist stem; cf. Skr. *sthānt-*, Gk. *stant-* (<**stā-nt-**) ‘*having stood*’.

3. The Perfect active has a suffix **-wos-**, fem. **-us-ja/ī**; as, **wid-wós-**, *seeing*, from **weid-**. Common is the reduplicated Perfect stem; as, **qe-qṛ-wós-**, *making*, from **qer-**.

NOTE. For **widwós**, cf. Av. *vīduuá*, O.Ind. *vidús-*, Gk. *eidós*, also Toch. B. *It-u*, Lith. *áug-us-i*, etc. Compare reduplicated examples in Myc. *a-ra-ru-wo-a*, Skr. *ca-kr-vás-*, Lat. *me-mor-*, etc. Another old suffix is found in Myc. *-wót-*.

Both the Present and Perfect participles masculine and neuter are indeed inflected following the second declension in **t** and **s**; as, Masc. Nom. **-nts**, **-wos**, Acc. **-ntṇ**, **-wosṇ**, Gen. **-ntos**, **-usos** (note the zero-grade **us-** in the Oblique cases), Nom. pl. **-ntes**, **-woses**, etc. Feminine forms follow the first declension in **-ja/ī**.

4. The Middle Participles have a common suffix (originally probably adjectival), Athematic **-meno-/mmo-**, Thematic **-o-meno-/o-mmo-**; as, **alomnós**, “*who feeds himself*”, *student*, (as Lat. *alumnus*, from **al-**), **dhēmná**, “*who suckles*”, *woman*, (as Lat. *femina*, from **dhēi-**).

NOTE. On the **-mXno-* question, where X is a vowel or laryngeal or even laryngeal+vowel, while Melchert (1983) or Szemerényi (1990) support an original **-mn-o-**, a competing hypothesis is

Fritz's one with an original **-mh₁eno-*, into variants **-mh₁no-* and then *-mno-*, in which "the laryngeal disappears when the suffix is added to a root or stem with a non-syllabic final position preceding the full vowel e. The non-laryngeal full grade form **-meno-* would then have the newly constructed zero grade form **-mno-*" (Meier-Brügger 2003). The differentiation of the perfect **-mh₁n-ó-* vs. the present **-o-mh₁no-* in the various IE languages may be traced back to the athematic/thematic dichotomy (Rix 1976).

5. In addition to participles, PIE had verbal adjectives in *-tó-* and *-nó-*, added usually to the zero-grade of a verbal stem that indicated completed action, and were semantically like past participles in English. They are used in static passive formations.

NOTE. If the verb they were formed from was transitive (like *eat*), the verbal adjective was passive and past in tense (*eaten*), but if the verb was intransitive (like *go*), the verbal adjective was simply past in tense (*gone*). Examples include **ch₁n-tós**, *slain*, from transitive **chenmi**, *murder*, cf. Skr. *hatá-*, Gk. *-phatós*; **cm₁-tós**, (*having*) *come*, from intransitive **chemjō**, *come*. Taken from Fortson (2004).

a. General *-tó-*; as, **altós**, *grown*, **dhatós**, *placed*, **kaptós**, *taken*, **liqtós**, *left*, **pigtós**, *painted* etc.

b. Old (not generalized) *-nó-* and its variants; as, **plēnós**, "(*having been*) *filled up*", *full*, **bhidhnós**, "*having been split*", *parted*, *bitten*; **wṛgnós**, *worked*.

NOTE. For **plēnós**, from **pel-**, *fill*, an adjective which was not part of the verbal paradigm, cf. Skr. *pūrṇá-*, Lat. *plēnus* (vs. past participle *-plētus*, "*filled*"), Goth. *fulls* (double *-ll-* < **-ln-*), O.Ir. *lán*, Lith. *pilnas*. Also, the common PIE verb is found from this root, **plénāmi**, *fill*, cf. O.Ind. *pr₁ṇāti* Goth. *fullnan*, Ger. *füllen*, O.Ir. *lín(a)im*, Arm. *lnum*, and root Gk. *píplēmi*.

NOTE. Verbal adjectives in *-mó-*, *-ló-*, functioned as past participles in individual languages; as, present passive participle in Balto-Slavic *-mo-*, cf. O.C.S. *něsomŭ*, Lith. *nėšamas*, '*being carried*', perhaps Anatolian, cf. Luv. *kīšammi-*, '*combed*'. For its old use, cf. **prīmós**, *foremost*, *first*, from **per-**, v.s. the ordinal numerals; however, Latin *prīmus* is usually reconstructed as from **preismós** (cf. Paelignian *prīsmū*), but possibly superlative **pr̥(w)-isṇós**, from common PIE **přmos**, **přwos**, *first*, is the solution (cf. Szemerényi 1970, Adrados 1998).

7.7.3. GERUNDIVES AND ABSOLUTIVES

1. Verbal Adjectives are not assimilated to the verbal system of Tense and Voice. Those which indicate need or possibility are called Gerundives.

7. Verbs

NOTE. Verbal Adjectives and Adjectives (as Verbal Nouns and Nouns) cannot be easily differentiated.

2. Whereas the same Passive Participle suffixes are found, i.e. **-tó-**, **-nó-**, **-mó-**, there are two forms especially identified with the Gerundives in Late PIE dialects:

a. **-ló-** and **-li-** are found in Latin, Balto-Slavic, Tocharian and Armenian; as, **ṇbherelós**, *unbearable*, **ágilis**, *agile*, etc.

NOTE. For suffix **-lo-** as a participle suffix, cf. Russ. *videľŭ*, Lat. *credulus*, *bibulus*, *tremulus*, etc.

b. **-jó-** (a common lengthening to differentiate adjectives) is sometimes a Gerundive of Obligation, as well as **-tu-**, **-ti-**, **-ndho-**, etc.; as, **dhṛsjós**, *that has to be dared*; **gnōtínós**, *that has to be known*; **séqondhos**, *second, that has to follow*; **gnáskendhos**, *that has to be born*; and so on.

c. **-mon**, with a general meaning of ‘able’; as, **mnāmon-**, *mindful*.

NOTE. For the “Internal Derivation” (after the German and Austrian schools) of this PIE suffix ***-m̥>-mon**, cf. Gk. *mnēma* < **m̥n-m̥*, “reminder”, PIE **mnām̥*, into Gk. *mnémon* > **mnāmon**, “who remembers”; compare also Skr. *bráhmaṇ*, “prayer”, Skr. *brahmán*, “brahman”, etc.

3. The adverbial, not inflected Verbal Adjectives are called Absolutives or Gerunds. They were usually derived from older Gerundives.

NOTE. Early PIE speakers had to use verbal periphrases or other resources to express the idea of a modern Gerund, as there were no common reconstructible PIE gerunds. Just like Verbal Nouns were the usual basis to express the idea of Infinitives, Verbal Adjectives (and especially Gerundives) were a common PIE starting point to create Gerunds

A common Future (or Obligation) Passive Absolute ending, **-téw(ij)os**, existed in Late PIE; as, **legtéw(ij)os**, *which has to be said, read or gathered*.

NOTE. For the absolute use of **-téw(ij)os**, cf. Gk. *-τος*, *-τεος*, O.Ind. *-tavya*, O.Ir. *-the*, etc., probably all from verbal adjectives in **-tu-**, full grade **-tew-**, usually lengthened with common gerundive ending **-ij-**.

Because of its Passive use, it may be used only with transitive verbs.

7.8. CONJUGATED EXAMPLES

7.8.1. THEMATIC VERBS

I. PRESENT STEM

ACTIVE

loutum, *to wash* (Present Stem **low-o-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>Imperative</i>	<i>IMPERFECT</i>
Sg.	lowō	lówōmi	lowoim	-	lowom
	lówesi	lówēsi	lowois	lowe	lowes
	lóweti	lówēti	lowoit	lówetōd	lowet
Pl.	lówomos	lówōmos	lówoime	-	lówomo
	lówete	lówēte	lówoite	lówete	lówete
	lówonti	lówōnti	lowoint	lówontōd	lowont

deiktum, *to show* (Present Stem **deik-o-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>Imperative</i>	<i>IMPERFECT</i>
Sg.	deikō	déikōmi	deikoim	-	deikóm
	déikesi	déikēsi	deikois	deike	deikés
	déiketi	déikēti	deikoit	déiketōd	deikét
Pl.	déikomos	déikōmos	déikoime	-	deikomo
	déikete	déikēte	déikoite	déikete	deikete
	déikonti	déikōnti	deikoint	déikontōd	deikónt

weistum (<**weid-tum**>), *to see* (Present Stem **wid-éjo-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>Imperative</i>	<i>IMPERFECT</i>
Sg.	widējō	widējōmi	widējoim	-	widējóm
	widējesi	widējēsi	widējois	weide	widējés
	widējeti	widējēti	widējoit	wéidetōd	widējét
Pl.	widějomos	widējōmos	widējoime	-	widějomo
	widējete	widējēte	widējoite	wéidete	widējete
	widějonti	widējōnti	widējoint	wéidontōd	widējónt

MIDDLE-PASSIVE

loutum, to wash (Present Stem **low-o-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>IMPERFECT</i>	<i>PASSIVE</i>
Sg.	lowai	lowāi	lówoima	lowa	lowar
	lówesoi	lówēsoi	lówoiso	lóweso	lówesor
	lówetoi	lówētoi	lówoito	lóweto	lówetor
Pl.	lówomesdha	lówōmesdha	lówoimedha	lówomedha	lówomedhar
	lówedhwe	lówēdhwe	lówoidhwe	lówedhwe	lówedhwer
	lówontoi	lówōnto	lówointo	lówonto	lówontor

deiktum, to show (Present Stem **deik-o-**)

<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>IMPERFECT</i>	<i>PASSIVE</i>
deikai	deikāi	déikoima	deika	deikar
déikesoi	déikēsoi	déikoiso	déikeso	déikesor
déiketoi	déikētoi	déikoito	déiketo	déiketor
déikomesdha	déikōmesdha	déikoimedha	déikomedha	déikomedhar
déikedhwe	déikēdhwe	déikoidhwe	déikedhwe	déikedhwer
déikontoi	déikōntoi	déikointo	déikonto	déikontor

weistum, to see (Present Stem **wid-éjo-**)

<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>IMPERFECT</i>	<i>PASSIVE</i>
widējai	widējāi	widéjoima	widēja	widējar
widéjesoi	widējēsoi	widéjoiso	widéjeso	widéjesor
widējeto	widējētoi	widéjoito	widējeto	widējeter
widējomesdha	widējōmesdha	widéjoimedha	widējomedha	widējomedhar
widédjedhwe	widējēdhwe	widējoidhwe	widédjedhwe	widédjedhwe
widéjontoi	widējōntoi	widéjointo	widéjonto	widéjontor

II. AORIST STEM

ACTIVE

loutum, *to wash* (Aorist Stem ***lou-s-***, Sigmatic)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	lousm̐	lousom	lousīm
	lous	louses	lousīs
	loust	louset	lousīt
Pl.	lousme	lóusomo	lóusīme
	louste	lóusete	lóusīte
	lousnt	lousont	lousīnt

deiktum, *to show* (Aorist Stem ***dik-ó-***, zero-grade)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	dikóm	dikṓm	dikóim
	dikés	dikḗs	dikóis
	dikét	dikḗt	dikóit
Pl.	dikomo	dikōmo	dikoime
	dikete	dikēte	dikoite
	dikónt	dikṓnt	dikóint

NOTE. For original **dikóm**, cf. *disáti*, Gk. *ᾄδικος*, etc.**weistum**, *to see* (Aorist Stem ***wid-ó-***, zero-grade)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	widóm	widṓm	widóim
	widés	widḗs	widóis
	widét	widḗt	widóit
Pl.	widomo	widōmo	widoime
	widete	widēte	widoite
	widónt	widṓnt	widóint

NOTE. For PIE accent on the optative suffix, following the accent on the thematic vowel of certain Aorist formations, cf. O.Ind. them. aor. opt. sg. *vidé-s* (<****widói-s*

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MIDDLE-PASSIVE

loutum, *to wash* (Aorist Stem ***lou-s-***, Sigmatic)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	lousma	lousa	lousīma
	louso	louseso	lousīso
	lousto	lousesto	lousīto
Pl.	lousmedha	lousomedhā	lousīmedha
	lousdhwe	lousedhwe	lousīdhwe
	lousnto	lousonto	lousīnto

deiktum, *to show* (Aorist Stem ***dik-ó-***, zero-grade)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	diká	diká	dikoima
	dikeso	dikēso	dikóiso
	diketo	dikēto	dikoito
Pl.	dikómedha	dikómedhā	dikóimedha
	dikedhwe	dikēdhwe	dikoidhwe
	dikonto	dikōnto	dikointo

weistum, *to see* (Aorist Stem ***wid-ó-***, zero-grade)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	widá	widá	widoima
	wideso	widéso	widoiso
	wideto	widēto	widoito
Pl.	widómedha	widómedhā	widóimedha
	widedhwe	widēdhwe	widoidhwe
	widonto	widōnto	widointo

III. PERFECT STEM

loutum, to wash (Perfect Stem **lōu-**/**lou-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>PAST</i>	<i>MIDDLE</i>
Sg.	lōwa	lōwōm	lōwoim	lōwóm	lōwa
	lōutha	lōwēs	lōwois	lōwés	lōweso
	lōwe	lōwēt	lōwoit	lōwét	lōweto
Pl.	loumé	lōwōmo	lōwoime	lōwomo	lōwomedha
	louté	lōwēte	lōwoite	lōwete	lōwedhwe
	lowér	lōwōnt	lōwoint	lōwont	lōwonto

deiktum, to show (Perfect Stem **doik-**/**dik-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>PAST</i>	<i>MIDDLE</i>
Sg.	doika	doikōm	doikoim	doikom	doika
	doiktha	doikēs	doikois	doikes	dóikeso
	doike	doikēt	doikoit	doiket	dóiketo
Pl.	dikmé	dóikōmo	dóikoime	dóikomo	dóikomedha
	dikté	dóikēte	dóikoite	dóikete	dóikedhwe
	dikér	doikōnt	doikoint	doikont	dóikonto

weistum, to see (Perfect Stem **woid-**/**wid-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>PAST</i>	<i>MIDDLE</i>
Sg.	woida	woidōm	woidoim	woidom	woidā
	woisthaⁱ	woidēs	woidois	woides	wóideso
	woide	woidēt	woidoit	woidet	wóideto
Pl.	widmé	wóidōmo	wóidoime	wóidomo	wóidomedha
	wistéⁱⁱ	wóidēte	wóidoite	wóidete	wóidedhwe
	widér	woidōnt	woidoint	woidont	wóidonto

ⁱ From **woid-tha**. ⁱⁱ From **wid-té**.

IV. FUTURE STEM

loutum, to wash (Future Stem **lou-s-jo-**)

	<i>Future</i>	<i>Conditional</i>
Sg.	lousjō	lousjom
	lóusjesi	lousjes
	lóusjeti	lousjet
Pl.	lóusjomos	lóusjomo
	lóusjete	lóusjete
	lóusjonti	lousjont

deiktum, to show (Future Stem **deik-s-jo-**)

	<i>Future</i>	<i>Conditional*</i>
Sg.	deiksjō	deiksjom
	déiksjesi	deiksjes
	déiksjeti	deiksjet
Pl.	déiksjomos	déiksjomo
	déiksjete	déiksjete
	déiksjonti	deiksjont

NOTE. For the Aorist in **-s-**, cf. Lat. *dīxī* (<**dēik-s-*); IE future stems in (thematic) **-s-** are maybe originally from subjunctives of sigmatic aorists, e.g. subj. *dēik-so-mi*, “I may/shall show”.

weistum, to see (Future Stem **weid-s-jo-**)

	<i>Indicative</i>	<i>Conditional</i>
Sg.	weidsjō	weidsjom
	wéidsjesi	weidsjes
	wéidsjeti	weidsjet
Pl.	wéidsjomos	wéidsjomo
	wéidsjete	wéidsjete
	wéidsjonti	weidsjont

NOTE. With the old PIE voluntative-desiderative formation – possibly also behind the origin of the future stem – is North-West IE **weid-so-**, *visit* (<“wish to see”); cf. Lat. *vīsō*, -ere, Umbr. *re-vestu*; Goth. *ga-weisōn*, O.S. O.H.G. *wīsōn*.

7.8.2. ATHEMATIC INFLECTION

I. PRESENT STEM

ACTIVE

estum, to be (Present Stem **es-/s-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>Imperative</i>	<i>IMPERFECT</i>
Sg.	esmi	esō	sjēm	-	esṃ
	esi	esesi	sjēs	es/sdhí	es
	esti	eseti	sjēt	estōd	est
Pl.	smés	ésomes	sīme	-	esme
	sté	éseste	sīte	(e)ste	este
	senti	esonti	sīnt	sentōd	esent
<i>Participle: sonts, sontja, sont</i>					

NOTE. Proto-Indo-European verb **es**, *be*, is a copula and verb substantive; it originally built only a durative aspect of present, and was therefore supported in some dialects (as Gmc., Sla., Lat.) by the root **bheu-**, *be, exist*, which helped to build some future and past formations.

For cognates of the singular forms and the 3rd person plural, compare Gmc. *ezmi, ezzi, esti, senti* (cf. Goth. *im, is, is, sind*, O.N. *em, est, es*, O.E. *eom, eart, ist, sind/sint*, O.H.G. *-, ist, sind*, Eng. *am, art, is, -*), Lat. *sum* (<**ésomī**>), *es(s), est, sunt* (<**sontī**>), Gk. *εἰμι, εἶ, εστί, εἰσί* (Dor. *έντῃ*), O.Ind. *ásmi, ási, ásti, sánti*, Av. *ahmi* (O.Pers. *amiy*), *-, asti, hanti*, Arm. *em, es, ē, -, O.Pruss. asmai, assai, est*, Lith. *esmi, esi, esti, O.C.S. jesmь, jesi, jestь, sьtь* (<**sontī**>), Russ. *есмь, еси, есмь, суть* (<**sontī**>), O.Ir. *am, a-t, is, it* (cf. O.Welsh *hint*) Alb. *jam, -, -, etc.*

Athematic Optatives form the Present with zero-grade; cf. Lat. *siēm, duim*, Gk. *ισταμην, διδομην, τιθεμην*, O.Ind. *syaam (asmī), dvisyām (dvesmī), iyām (emī), juhuyām (juhkomi), sunuykām (sunomi), rundhyām (runadhmī), kuryām (karomī), krīnīyām (krīnāmī)*, etc. Exceptions are Lat. *uelim* (not *uulim*), Goth. (concave) *wiljau, wileis*, etc. The reconstructed Optative paradigm of **esmi** comes from these formations (note the columnar stress on the optative suffix):

	SINGULAR			PLURAL		
Sanskrit	syám	syás	syāt	syāma	syāta	syúr
O. Greek	εἶην	εἶης	εἶη	εἶμεν	εἶτε	εἶεν
O. Latin	siem	sies	siet	sīmus	sītis	*sīnt
Gothic	sijau	sijais	sijai	sijaima	sijaith	sijaina

7. Verbs

Due to the decadence of the Athematic flexion in North-West IE, a trend that had begun before Late PIE times – but was held back in the Southern dialects – there was a dynamic situation of coexistence and (eventually) substitution of athematic stems with remade thematic ones; e.g. newer thematic **kluwējō**, **stājō**, coexisted with older **k̑̑neumi**, **(sī)stāmi**, with similar meaning and use, and in most EIE dialects completely replaced them.

kleutum, to hear (Present Stem **k̑̑neu-**/**k̑̑nu-**, with Nasal Infix)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>Imperative</i>	<i>IMPERFECT</i>
Sg.	k̑̑neumi	klewomi	k̑̑nujém	-	k̑̑newm̐
	k̑̑neusi	klewesi	k̑̑nujés	kleu/kludhi	k̑̑neus
	k̑̑neuti	kleweti	k̑̑nujét	kleutōd	k̑̑neut
Pl.	k̑̑numes	kléwomos	k̑̑nwīme	-	k̑̑neume
	k̑̑nute	kléwete	k̑̑nwīte	kleute	k̑̑neute
	k̑̑nunti	klewonti	k̑̑nwīnt	kléwntōd	k̑̑newnt

NOTE. Late PIE indicative forms were read **k̑̑numés**, **k̑̑nuté**, Opt. **k̑̑nwīmé**, **k̑̑nwīté**, Imp. **kludhí**, as in Vedic. Greek and EIE Columnar accent is preferred in MIE. Also, apparently the optative in the 3rd P. Pl. had possibly full-grade root vowel, i.e. **k̑̑néwīnt**; see Kortlandt (1992).

stātum, to stand (Present Stem **(sī)stā-**/**(sī)sta-**, reduplicated)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>Imperative</i>	<i>IMPERFECT</i>
Sg.	(sī)stāmi	stājomi	(sī)stajém	-	(sī)stām
	(sī)stāsi	stājesi	(sī)stajés	stā/stadhi	(sī)stās
	(sī)stāti	stājeti	(sī)stajét	stātōd	(sī)stāt
Pl.	(sī)stames	stājomos	(sī)staíme	-	(sī)stāme
	(sī)state	stājete	(sī)staíte	stāte	(sī)stāte
	(sī)stanti	stājonti	(sī)staínt	stānti	(sī)stānt

NOTE. Indicative forms were usually read in PIE **sīstamés**, **sīstaté**, as in Vedic. The Optative formations show zero-grade stem **sta-**, and the accent is written to distinguish **-a-ī-** from a diphthong **-aī-**. For **sta-jo-** as a thematic subjunctive (Vedic uses its *injunctive sthe-*), cf. O. Gk. subj. 1pl. στείομεν (< PGk *stejome-* < PIE **stəjome-* > MIE **stajome-**), from Gk. ἵστημι; also, θείομεν (< PGk *dhejome-* < PIE **dhəjome-* > MIE **dhajome-**) from τίθημι, IE **dhē-**; δείομεν (< PGk *dejome-* < PIE **dəjome-* > MIE **dajome-**) from Gk. δίδωμι, IE **dō-**; and so on.

MIDDLE-PASSIVE

kleutum, *to hear* (Present Stem **kļneu-**/**kļnu-**, with Nasal Infix)

<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>IMPERFECT</i>	<i>PASSIVE</i>
kļneumai	klewai	kļnwīma	kļneuma	kļluneumar
kļneusoi	kléwesoi	kļnwīso	kļneuso	kļlneusor
kļneutoi	kléwetoι	kļnwīto	kļneuto	kļlneutor
kļnéumesdha	kléwomesdha	kļnwīmedha	kļnéumedha	kļlneumedhar
kļneudhwe	kléwedhwe	kļnwīdhwe	kļneudhwe	kļlneudhwer
kļnéwŋtoi	kléwontoi	kļnwīnto	kļnéwŋto	kļlnéwŋtor

NOTE. PIE had probably an Athematic Optative Middle stress on declension, as in Vedic; viz. **kļnwīsó**, **kļnwīdhwé**, etc. The general columnar accent of PGk and EIE is again preferred.

stātum, *to stand* (Present Stem **(sī)stā-**/**(sī)sta-**, reduplicated)

<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>Indicative</i>	<i>PASSIVE</i>
(sī)stāmai	stajāi	(sī)staīma	(sī)stāma	(sī)stāmar
(sī)stāsoi	stājeso	(sī)staīso	(sī)stāso	(sī)stāsor
(sī)stātoi	stājeto	(sī)staīto	(sī)stāto	(sī)stātor
(sī)stāmesdha	stājomedha	(sī)staīmedha	(sī)stāmedha	(sī)stāmedhar
(sī)stādhwe	stājedhwe	(sī)staīdhwe	(sī)stādhwe	(sī)stāsdhwer
(sī)stāntoi	stājonto	(sī)staīnto	(sī)stāntoi	(sī)stāntor

II. AORIST STEM

ACTIVE

NOTE. The Aorist of **es-**, be, was built with the regular Aorist Stem and Augment (to differentiate it from the present stem), viz. **ēs-**(->**é+es-**), adding Secondary Endings. Compare Old Indian Sg. *āsam*, *ās*, *ās*, Pl. *āśma*, *āśta*, *āśan*, Gk. Hom. 1. Sg. ἦα, 2. Sg hom. att. ἦσθα, 3. Sg. dor. etc. ἦς, Pl. hom. ἦμεν, ἦτε, ἦσαν, Lat. *erat*, Hitt. *e-eš-ta* (*ēsta*), Alb. *isha*.

7. Verbs

estum, *to be* (Aorist Stem **ēs-**/**es-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	ēsṃ	ēsom	esjém
	ēs	ēses	esjés
	ēst	ēset	esjét
Pl.	ēsme	ésomo	esīme
	ēste	ésete	esīte
	ēsnt	ēsont	esínt

kleutum, *to hear* (Aorist Stem **kluw-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	kluwom	kluwōm	klujém
	kluwes	kluwēs	klujés
	kluwet	kluwēt	klujét
Pl.	kluwome	kluwōmo	klwīme
	kluwete	kluwēte	klwīte
	kluwont	kluwōnt	klwīnt

NOTE. For Aorist **kluwom**, cf. Gk. ἔκλυον, O.Ind. *śrúvam*.

stātum, *to stand* (Aorist Stem **stā-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	stām	stajō	stajém
	stās	stajes	stajés
	stāt	stajet	stajét
Pl.	stāme	stájomo	staíme
	stāte	stájete	staíte
	stānt	stajont	staínt

MIDDLE-PASSIVE

kleutum, *to hear* (Aorist Stem **kluw-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	kluwa	kluwā	klwīma
	klúweso	klúwēso	klwīso
	klúweto	klúwēto	klwīto
Pl.	klúwomesdha	klúwōmedha	klwīmedha
	klúwedhwe	klúwēdhwe	klwīdhwe
	klúwonto	klúwōnto	klwīnto

stātum, *to stand* (Aorist Stem **stā-**)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	stāma	staja	staīma
	stāso	stājeso	staīso
	stāto	stājeto	staīto
Pl.	stāmedha	stājomedha	staīmedha
	stādhwe	stājedhwe	staīdhwe
	stānto	stājonto	staīnto

III. PERFECT STEM

kleutum, *to hear* (Perfect Stem **ké-klou-/ké-klu-**, reduplicated)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>PAST</i>	<i>MIDDLE</i>
Sg.	kéklowa	kéklowō	keklujém	kekloum	kéklouma
	kékloutha	kéklowes	keklujés	keklaus	kéklouso
	kéklowe	kéklowet	keklujét	kekout	kéklouto
Pl.	keksumé	kéklowomo	kekluwīme	kékloume	kékloumedha
	kekuté	kéklowete	kekluwīte	kékloute	kékloudhwe
	kekluér	kéklowont	kekluwīnt	kekount	kéklownto

stātum, *to stand* (Aorist Stem **se-stā-**/**se-sta-**, reduplicated)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>PAST</i>	<i>MIDDLE</i>
Sg.	sestā	séstājō	sestajém	sestām	séstāma
	séstātha	séstājes	sestajés	sestās	séstāso
	sestā	séstājet	sestajét	sestāt	séstāto
Pl.	sestamé	séstājomo	sestaíme	séstāme	séstāmedha
	sestaté	séstājete	sestaíte	séstāte	séstāedhwe
	sestār	séstājont	sestaínt	séstānt	séstānto

NOTE. For reduplicated **se-sta-**, cf. O.Ind. perf. *tasthāu*, *tasthe*, *tasthimá*, *tasthivas-*; Gk. perf. ἔστηκα, ἑσταμεν, ἑσταώς.

IV. FUTURE STEM

kleutum, *to hear* (Future Stem **kleu-s-jo-**)

	<i>Future</i>	<i>Conditional</i>
Sg.	kleusjō	kleusjom
	kléusjesi	kleusjes
	kléusjeti	kleusjet
Pl.	kléusjomos	kléusjomo
	kléusjete	kléusjete
	kléusjonti	kleusjont

stātum, *to stand* (Future Stem **stā-s-jo-**)

	<i>Future</i>	<i>Conditional</i>
Sg.	stāsjō	stāsjom
	stāsjesi	stāsjes
	stāsjeti	stāsjet
Pl.	stāsjomos	stāsjomo
	stāsjete	stāsjete
	stāsjonti	stāsjont

7.8.3. OTHER COMMON PIE STEMS

I. THEMATIC VERBS

1. Root:

- Present **lowō**, *I wash*, Aorist (é)**lousm**, Perfect **lélowa**.
- Present **serpō**, *I crawl*, Aorist (é)**sṛpom**.
- Present **bherō**, *I carry*, Aorist (é)**bherom**, Perfect **bhébhora**.
- Present **bheugō**, *I flee*, Aorist (é)**bhugom**.
- Present **bheidhō**, *I believe, persuade*, Aorist (é)**bhidhom**.
- Present **weqō**, *I speak*, Aorist (Them. Redupl.) (é)**weuqom**.
- Present **tremō**, *I tremble*, Aorist (é)**tṛmom**.

NOTE. A particular sub-class of Thematic Presents without suffix is of the type Skr. *tudati*, which have Present Stems with zero-grade root-vowel, as **glubhō/gleubhō**, *skin*.

2. Reduplicated:

There are many reduplicated thematic stems, analogous to the athematic ones:

- Present **gignō**, *I generate*, (from **gen-**), Aorist (é)**gṇom**/(é)**genom**, Perfect **gégona**, P.Part. **gñtós** (cf. O.Ind. *jatá*, Lat. *nātus*).

NOTE. For **gñtós**, cf. O.Ind. *jātás*, Av. *zāta-*; Lat. *nātus*, Pael. *cnatois*, Gaul. f. *gnātha* “daughter”; O.N. *kundr* “son”, also in compound, cf. Goth. *-kunds*, “be a descendant of”, O.E. *-kund*, O.N. *-kunnr*.

- Present **pibō**, *I drink* (<reduplicated **pí-pō**, from **pōi-**).
- Present **mimnō**, *I remember*, (from **men-**).

3. In **-je/o-**, some of them are causatives:

- Present **spekjō**, *I watch*, Aorist (é)**speksm**, P.Part. **spektós**.
- Present **tenjō**, *I stretch*, Aorist (é)**tṇom**/(é)**tenóm**, Perfect **tétona**, P.Part. **tñtós**.

4. Verba Vocalia:

- Present **bhorējō**, *I make carry*, from **bher-**, *carry*.
- Present **widējō**, *I see, I know*, Aorist (é)**widóm**, Perfect **woida** P.Part. **wistós** (<**wid-tós**).

- Present **monējō**, *I make think, remember*, as Lat. *moneo*, from **men-**, *think*.
- Present **tromējō**, *I make tremble*, from **trem-**, *tremble*.

5. In **-ske/o-**. Verbs built with this suffix had usually two main functions:

- a. Durative action, Intensive or Repetitive (*Intensive-Iterative*), as attested in Greek;
- b. Incompleted action, with an Inchoative value, indicating that the action is beginning.

Common examples include:

- Present **pr̥kskō**, *I ask, demand, inquire* (cf. Lat. *posco*, Ger. *forschen*, v.i.) from **prek-**, *ask*.
- Present **gnāskai**, *I am born* (cf. Lat. *gnascor*), P.Part. **gnātós**.

NOTE. From zero-grade **gñ-sko-**, lit. “*I begin to generate myself*”, in turn from reduplicated verb **gignō**, *generate*.

- Present **gnoskō**, **gignōskō**, *I begin to know, I learn*, from **gnō-**, *know*.

6. With Nasal Infix:

- Present **jungo**, *join* (from **jeug-**), Aorist **jēugsṃ**.

NOTE. Compare O.H.G. [*untar-|jauhta*] (as Lat. *sub-jugauī*), Lat. *jungō*, *-ere*, *-nxi*, *-nctus*, Gk. ζεύγνυμι, ζεύξαι ζυγηναι; O.Ind. *yunákti* (3. Pl. *yun̥jánti* = Lat. *jungunt*), *yun̥jati*, full-grade *yōjayati* (<**jeugējetī**); Av. *yaoj-*, *yuj-*; Lit. *jūngiu*, *jūngti*, etc. For Past Participles (with and without Present infix **-n-**), compare O.E. *geoht*, *iukt*, Lat. *junctus*, Gk. δεπθόο, O.Ind. *yuktá-*, Av. *yuxta-*, Lit. *jūngtas*, etc.

II. ATHEMATIC VERBS

1. Root:

They are the most archaic PIE verbs, and their Present conjugation is of the old type Singular root vowel in full-grade, Plural root vowel in zero-grade.

- Present **esmi**, *I am*.
- Present **eími**, *I walk*.
- Present **bhāmi**, *I speak*.

NOTE. The verb *talk* is sometimes reconstructed as PIE ***āmi**, *I talk*, and Imperfect ***ām**, *I talked/have talked*; for evidence of an original **ag(h)-jō**, compare Lat. *aiō*, Gk. ην, Umb. *aiu*, Arm. *asem*. Thus, this paradigm would rather be Thematic, i.e. Present **ag(h)jō**, *I talk*, vs. Imperfect **ag(h)jóm**, *I talked/have talked*.

- Present **edmi**, *I eat*.

NOTE. Note that its early Present Participle **dent-**, “*eating*”, was frozen as substantive **dentis**, meaning “*tooth*”.

- Present **welmi**, *I want*.

2. Reduplicated:

- Present **sístāmi** (from **stā-**, *stand*), Aorist (é)**stām**, P.Part. **statós**.
- Present **déidikmi** (from **deik-**, *show*), Aorist (é)**dēiksm**, Perfect **dédoika**, P.Part. **diktós**.
- Present **dhídhēmi** (from **dhē-**, *do, make*), Aorist (é)**dhēm**, P.Part. **dhatós**.
- Present **didōmi** (from **dō-**, *give*), Aorist (é)**dōm**, P.Part. **datós**.
- Present **jíjēmi**, *throw*, Aorist (é)**jem**.

NOTE. For evidence on an original PIE **jíjēmi**, and not ***jíjāmi** as usually reconstructed, cf. Lat. pret. *iēcī*, a form due to its two consecutive laryngeals, while Lat. *iaciō* is a present remade (J. González Fernández, 1981).

3. With Nasal Infix:

- **klunéumi**, *hear* (from **kleu-**), Aorist (é)**klwom**, Perfect **kéklowa**, P.Part. **klutós**, meaning “*heard*” and also “*famous*”.
- **punémi**, *rot* (from **pew**), Aorist (é)**pēwsm**.

7.9. THE VERBAL ACCENT

The finite verb of a PIE main clause was normally placed following the subject and the object, at the end of the sentence, where the sentence accent usually decreases. However, when the verb was stressed at the beginning of the sentence, or in a subordinate clause, it carried its normal accent.

NOTE. Meier-Brügger (2003) also states that “[r]esearchers agree that Vedic generally reflects the fundamental characteristics of [common] Proto-Indo-European, and thus, that the finite verb in a main clause was unstressed (...) It remains disputed whether the second position of the finite verb, common to modern Germanic languages such as German, originated from the inherited phenomenon of enclitics, or whether it appeared secondarily”. On that, Wackernagel (1892) “the German rule of word order was already valid in the mother language”.

8. PARTICLES

8.1. PARTICLES

8.1.1. Adverbs, Prepositions, Conjunctions and Interjections are called Particles. They cannot always be distinctly classified, for many adverbs are used also as prepositions and many as conjunctions.

8.1.2. Strictly speaking, Particles are usually defined as autonomous elements, usually clitics, which make modifications in the verb or sentence, but which don't have a precise meaning, and which are neither adverbs nor preverbs nor conjunctions.

8.1.3. Indo-European has some particles (in the strictest sense) which mark certain syntax categories, classified as follows:

- I. Emphatics or Generalizers may affect the whole sentence or a single word, usually a pronoun, but also a noun or verb. The particle **ge/gi, ghe/ghi**, usually strengthens the negation, and emphasizes different pronouns.

NOTE 1. The origin of this particle is probably to be found in PIE **-qe**, acquiring its coordinate value from an older use as word-connector, from which this Intensive/Emphatic use was derived. Compare O.Ind. *gha, ha, hí*, Av. *zi*, Gk. *ge, -gí, -χί*, Lith. *gu, gi*, O.Sla. *-go, že, ži*, Also, compare, e.g. for intensive negative **neghi**, O.E. *nek*, O.Ind. *nahí*, Balt. *negi*. Also, if compared with Gk. *dé*, O.Ind. *ha*, O.Sla. *že*, and related to **-qe**, a common PIE particle **che** might be reconstructed.

II. Verb Modifiers:

- a. The old **-ti** had a Middle value, i.e. Reflexive.

NOTE. This is a very old value, attested in Anatolian, cf. Hitt. *za*, Pal. *-ti*, Luw. *-ti*, Lyd. *-(i)t*, Lyc. *-t/di*.

- b. The modal **-man**, associated with the Indicative, expresses Potentiality (when used in Present) and Irreality (in the Past).

NOTE. It is probably the same as the conjunction **man**, *if*, and closely related to **-ma**, *but*.

- c. The negative particle **mē, nē**, associated with the Indicative or forms indifferent to the Moods.

III. Sentence categorizers indicate the Class of Sentence, whether negative or interrogative.

a. Absolute Interrogatives were introduced in European dialects by special particles, generally **an**.

NOTE. The origin could be the “Non-Declarative Sense” of the sentence. It has been proposed a common origin with the negative particle **ne/ṇ**.

b. Negation has usually two particles, etymologically related:

- Simple negation is made by the particle **ne**, and lengthened with **-i**, **-n**, **-d**, etc.; as, emphatic **nei**, *not at all*.

- Mood negation or prohibitive is the particle **mē**, general MIE **nē**.

NOTE. For PIE **mē**, compare Gk. μή, O.Ind.,Av.,O.Pers. *mā*, Toch. *mar/mā*, Arm. *mi*, Alb. *mos*. In some PIE dialects (as generally in EIE), **nē** (from **ne**) fully replaced the function of **mē**, cf. Goth. *ne*, Lat. *nē*, Ira. *nī*. It is not clear whether Hitt. *lē* is ultimately derived from **mē** or **nē**.

IV. Sentence Connectives introduce independent sentences or connect different sentences, or even mark the principal sentence among subordinates.

a. **so** and **to**, which are in the origin of the anaphoric pronoun we studied in § 6.5.

b. **nu**, which has an adverbial, temporal-consecutive meaning.

c. An introductory or connective **ar**, *and*, *thus*, *therefore*, which is possibly the origin of some coordinate conjunctions.

d. **ne**, *thus*, cf. Lat. *ne*, Gk. *tóne*, Skr. *ná*.

8.2. ADVERBS

8.2.1. There is a class of invariable words, able to modify nouns and verbs, adding a specific meaning, whether semantic or deictic. They can be independent words (Adverbs), prefixes of verbal stems (Preverbs) – originally independent but usually merged with them – and also a nexus between a noun and a verb (Appositions), expressing a non-grammatical relationship, normally put behind, but sometimes coming before the word.

NOTE. In the oldest PIE the three categories were probably only different uses of the same word class, being eventually classified and assigned to only one function and meaning. In fact, Adverbs

are generally distinguished from the other two categories in the history of Indo-European languages, so that they change due to innovation, while Preverbs and Appositions remain the same and normally freeze in their oldest positions.

8.2.2. Adverbs come usually from old particles which have obtained a specific deictic meaning. Traditionally, Adverbs are deemed to be the result of oblique cases of old nouns or verbal roots which have frozen in IE dialects, thus losing inflection.

8.3. DERIVATION OF ADVERBS

8.3.1. Adverbs were regularly formed in PIE from Nouns, Pronouns and Adjectives.

8.3.2. From Pronouns we find adverbs made as follows:

i. With a nasal lengthening; as, **tām**, *at that point*, **jāmi**, *already*, **teni**, *until*, **kina**, *from this side*, **dom**, *still*, **num-**, *now*, **nom**, *so*.

NOTE. Those in **-ām** are interpreted as being originally Acc. Sg. fem. of independent forms.

ii. An **-s** lengthening, added to the adverb and not to the basic form, giving sometimes alternating adverbs; as, **ap/aps**, **ek/eks**, **ambhí/ambhís**, etc.

iii. An **-r** lengthening; as, **tor**, **kir**, etc. which is added also to other derived adverbs. It is less usual than the other two.

NOTE. Compare for such lengthenings Goth. *hwar*, *her*, (O.E. *where*, *hier*), Lat. *cur*, O.Ind. *kár-hi*, *tár-hi*, Lith. *kur*, Hitt. *kuwari*. Also, IE **qor-i**, **tor-i**, **kir-i**, etc. may show a final circumstantial **-i**, probably the same which appears in the Oblique cases and in the Primary Verbal Endings, and which originally meant ‘*here and now*’.

8.3.3. Some older adverbs, derived as the above, were in turn specialized as suffixes for adverb derivation, helping to create compound adverbs from two pronoun stems:

a. From **dē**, *from upwards*; as, **imde**, *from there*; or nasal **-dem**.

b. Probably from **dhē**, *put*, *place*, there are two particles which give suffixes with local meaning, from stems of Pronouns, Nouns, Adverbs and Prepositions, **-dhem**, and **-dhei**, **-dhi**; as **idhei**, *there*, **ṇdhi**, *in excess*.

NOTE. For **-dem**, cf. Lat. *idem*, *quidam*, O.Ind. *idān-im*; for **-dhem**, **-dhi**, Gk. *-then*, *-tha*, *-thi*.

c. Some adverbial suffixes with mood sense – some with temporal sense, derived from the older modal; as, **ita**, *so*, **uta**, *rather*, **anta**, *towards*, etc.; and **itim**, *item*, **autim**, *otherwise*, **uti**, *out*, etc.

NOTE. Compare from PIE **-ta** (<*-th₂), Lat. *iti-dem, ut(i), ita*, Gk. *protí, au-ti*, O.Ind. *iti, práti*; from **-t(i)m**, Lat. *i-tem*, Gk. *ei-ta, epei-ta*, O.Ind. *u-tá*.

8.3.4. From Nouns and Adjectives (usually Neuter Accusatives), frozen as adverbs already in Late PIE. The older endings to form Adverbs are the same as those above, i.e. generally **-i**, **-u** and **-(i)m**, which were in turn originally Adverbs.

Such Adverbs had precise, Local meanings, not merely Abstract or Deictic, and evolved later usually as Temporals. Endings **-r**, nasal **-n** and also **-s**, as in the formation of Pronouns, are also found.

NOTE 1. It is not uncommon to find adverbs derived from nominal stems which never had inflection, thus (probably) early frozen as adverbs in its pure stem.

NOTE 2. From those adverbs were derived Conjunctions, either with Temporal-Consecutive meaning (cf. Eng. *then, so*) or Contrastive (cf. Eng. *on the contrary, instead*).

Some common endings include:

a. In **-d**: cf. Lat. *probē*, Osc. *prufēd*; O.Ind. *pascāt, adharāt, purastāt*.

b. In **-nim**: cf. Osc. *enim*, “and”, O.Ind. *tūsnim*, “silently”, maybe also *idānim* is **idā-nim*, not **idān-im*.

c. In **-tos**: cf. Lat. *funditus, diuinitus, publicitus, penitus*; O.Ind. *vistarataḥ, “in detail”, samkṣepataḥ, prasangataḥ, “occasionally”, nāmattaḥ, “namely”, vastutaḥ, “actually”, mata, “by/for me”*.

d. In **-ks**: cf. Lat. *uix*, Gk. *περιξ*, O.Ind. *samyak, “well”, prthak, “separately”, Hitt. hudak, “directly”*.

8.4. PREPOSITIONS

8.4.1. Prepositions were not originally distinguished from Adverbs in form or meaning, but have become specialized in use.

They developed comparatively late in the history of language. In the early stages of the Proto-Indo-European language the cases alone were probably sufficient to indicate the sense, but, as the force of the case-endings weakened, adverbs were used for greater precision. These adverbs, from their common association with particular cases, became Prepositions; but many retained also their independent function as adverbs.

8.4.2. Most prepositions are true case-forms: as the comparatives **eksterós** (cf. *external*), **ἡdherós** (cf. *inferior*), **superós**, and the accusatives **kikrom**, **koram**, etc.

8.4.3. Prepositions are regularly used either with the Accusative or with the Oblique cases.

8.4.4. Some examples of common PIE adverbs/prepositions are:

ambhí, *on both sides, around*; cf. O.H.G. *umbi* (as Eng. *by*, Ger. *bei*), Lat. *am*, *amb-*, Gk. *amphi*, *amphis*, O.Ind. *abhí*.

ana, *to; on, over, above*. Cf. Goth. *ana*, Gk. *ánō*, *aná*, O.Ind. *ána*, O.C.S. *na*.

antí, *opposite, in front*. Cf. Goth. *and*, Lat. *ante*, Gk. *antí*, O.Ind. *ánti*, *átha*, Lith. *añt*; Hitt. *ḫanti*.

apo, *from; out*. Cf. Goth. *af*, lat. *ab*, *abs*, Gk. *apo*, *aps*, *apothēn*, O.Ind. *ápa*.

au-/we-, *out, far*. Cf. Lat. *au-*, *uē-*, Gk. *au*, *authi*, *autár*, O.Ind. *áva*, *vi-*, Toc. *-/ot-*, O.C.S. *u*.

obhi, *in the middle; around, from, to*, etc. Cf. Lat. *ob*, “*towards, to*”, O.Ind. *abhi*, Av. *aiwi*, Goth. *bi*.

en(i)/ṇ, *in*. Cf. Goth. *in*, Lat. *in*, Gk. *en*, *ení*, O.Ind. *ni*, *nīs*, Lith. *in*, O.C.S. *on*, *vŭ*.

epi, opi, pi, *on, towards here, around, circa*. Cf. Gmc. *ap-*, *ep-*, Lat. *ob*, *op-*, *-pe*, Osc. *úp-*, Gk. *epi*, *opi*, *pi*, O.Ind. *ápi*, Av. *áipi*, Arm. *ev*, Lith. *ap-*, O.Ir. *iar*, *ía-*, *ei-*, Alb. *épërë*, etc.

eti, *even; also*. Cf. Goth. *ip*, Lat. *et*, Gk. *eti*, O.Ind. *áti*, *átaḥ*, *at*, O.C.S. *otu*.

ṇdhi, *more, over*, **ṇdher(i)**, *down*. Cf. Gmc. *under-*, Lat. *infra*, Gk. *éntha*, O.Ind. *ádhi*, *ádhaḥ*.

per(i), *about, around*; **prō(d)**, *in front, opposite; forwards*. Cf. Goth. *fra*, *faúr*, *faúra*, Lat. *pro*, *prae*, *per*, Gk. *perí*, *pará*, *pros*, O.Ind. *pári*, *práti*, *pra*, Lith. *per*, Ltv. *prett'*, O.C.S. *prě*.

qu, *from interrogative-indefinites* **qi/qo**;

ter-, **trāntis**, *through*. Cf. Gmc. *thurkh* (cf. Goth. *ḥairh*, O.S. *thuru*, O.E. *ḥurh*, O.Fris. *thurch*, O.H.G. *thuruh*, M.Du. *dore*, Ger. *durch*), Lat. *trans*, O.Ind. *tiraḥ*, Av. *taro*, O.Ir. *tre*, Welsh *tra*.

(**s**)**upo**, *under, down*; (**s**)**uper(í)**, *up*. Cf. Goth. *uf, ufar* (as Eng. *up, over*, Ger. *auf, über*), Lat. *sub, super*, Gk. *upó, upér*, O.Ind. *úpa, upári*.

8.4.5. Common Late Proto-Indo-European adverbs include the following:

ad , <i>to, near</i> ,	pósteri , <i>afterwards</i>
apóteri , <i>behind</i>	postrōd , <i>backwards</i>
dē/dō , <i>from, to</i>	p̥ra , <i>next to</i>
ek/eksí , <i>out</i>	prāi , <i>in front, ahead</i>
ektós , <i>except</i>	práiteri , <i>along(side)</i>
entós , <i>even, also</i>	prō(d) , <i>ahead</i>
kom , <i>near</i>	p̥ros , <i>ahead</i>
nī , <i>down</i>	próteri , <i>in front of</i>
̥neu , <i>without</i>	prota , <i>against</i>
obhi , <i>on, over</i>	rōdhí , <i>because (of)</i>
ólteri , <i>beyond</i>	úperi/upsí , <i>on, over</i>
perti , <i>through, otherwise</i>	ut/utsí , <i>up, out</i>
pos/posti/pósteri , <i>behind</i>	wī , <i>separately</i>
poti , <i>toward</i>	s̥ni/s̥nteri , <i>separately</i>

8.5. CONJUNCTIONS

8.5.1. Conjunctions, like prepositions, are closely related to adverbs, and are either petrified cases of nouns, pronouns and adjectives, or obscured phrases: as, **jod**, an old accusative. Most conjunctions are connected with pronominal adverbs, which cannot always be referred to their original case-forms.

8.5.2. Conjunctions connect words, phrases or sentences. They are divided in two main classes, Coordinate and Subordinate.

8.5.3. Coordinates are the oldest ones, which connect coordinated or similar constructions. Most of them were usually put behind and were normally used as independent words. They are:

i. Copulative or disjunctive, implying a connection or separation of thought as well as of words; as, **-qe**, *and*, **-wē**, *or*, **toqe**, *also*, **joqe**, **atqe**, *and*, **itaqe**, *and also*, **neqe**, *nor*, **enim**, *and*.

NOTE. For PIE **neqe**, compare Lat. *ne-que*, Gk. οὔτε, Arm. *oc*, O.Ir. *nó, nú*, Welsh *ne-u*, O.Bret. *no-u*, Alb. *a-s*, Lyc. *ne-u*, Luw. *napa-wa*, and for PIE **mēqe**, in Greek and Indo-Iranian, but also in Toch. *ma-k* and Alb. *mo-s*. The parallel **newe** is found in Anatolian, Indo-Iranian, Italic and Celtic dialects.

ii. Adversative, implying a connection of words, but a contrast in thought: as, **ma**, *but*, **auti**, *or*, **autim**, **perti**, *otherwise*, **ati**, *but*, **ōd**, *and*, *but*, **ektós**, *excepted*.

NOTE. Adversative conjunctions of certain antiquity are **at(i)** (cf. Goth. *adh-*, Lat. *at*, Gk. *atár*), **(s)ma/(s)me** (cf. Hitt., Pal. *ma*, Lyd. *-m*, Lyc. *me*, Gk. *má, mé*, Messap. *min*), **auti** (cf. Lat. *autem*, *aut*, Gk. *aute*, *authis*, *autis*, *autár*), **ōd**, “*and, but*” (cf. O.Ind. *ād*, Av. (*ā*)*at*, Lith. *o*, Sla. *a*), etc. In general, the oldest IE languages attested use the same Copulative postpositive conjunctions as Adversatives, their semantic value ascertained by the context.

iii. Causal, introducing a cause or reason: as, **nam**, *for*.

iv. Illative, denoting an inference: as, **tori**, *therefore*, **ar**, *thus, therefore*, **ita**, **swāi**, *so*, **ṛdha**, *then*, **s(w)eike**, *thus*.

8.5.4. Subordinates connect a subordinate or independent clause with that on which it depends. They were introduced in PIE generally with relative clauses. The (rare) conjunctions that could have subordinate value included:

a. **-jo**, *and*, which has a general subordinate value, usually Relative, Final or Conditional.

NOTE. For common derivatives of PIE **-jo**, probably related to the relative pronoun, compare Hitt. *-a/-ya*, Toch. *-/yo*, It was probably replaced by **-qe**.

b. Conditional, denoting a condition or hypothesis; as, **mān**, **ei**, *if*, **nemān**, *unless*, **sēd**, **sne**, *apart*.

NOTE. For **ei**, possibly related to **i-**, hence to **jo** and **-jo**, cf. Goth. *-ei*, Gk. *eí*, O.C.S. *i*, Lat. *s-ī*.

c. Comparative, implying comparison as well as condition; as, **mān**, *as if*.

d. Concessive, denoting a concession or admission; as, **eti**, *even*, **an**, *perhaps*, **au**, *howbeit*, *although*, **perom**, *besides*.

NOTE. For **eti**, *even*, *and*, cf. Lat. *et*, Gk. *eti*, nasalized **ṛti** in Germanic *und-*, as Goth., Eng. *and*.

e. Temporal: as, **antí**, **prāi**, *before*, **pos(ti)**, *after*.

g. Final, expressing purpose; as, **uta**, *in order that*, **ne**, *that not*.

h. Causal, expressing cause; as, **jodqid**, *because*.

9. PROTO-INDO-EUROPEAN SYNTAX

9.1. THE SENTENCE

A Sentence is a form of words which contains a Statement, a Question, an Exclamation, or a Command.

a. A sentence in the form of a Statement is called a Declarative Sentence: as, *the dog runs*.

b. A sentence in the form of a Question is called an Interrogative Sentence: as, *does the dog run?*

c. A sentence in the form of an Exclamation is called an Exclamatory Sentence: as, *how fast the dog runs !*

d. A sentence in the form of a Command, an Exhortation, or an Entreaty is called an Imperative Sentence : as, *go, run across the Alps; or let the dog run*.

NOTE. The content of this chapter on Syntax (but for the Morphosyntax section) is taken mostly from Winfred P. Lehmann's Proto-Indo-European Syntax (1974): "*The fundamental order of sentences in PIE appears to be OV. Support for this assumption is evident in the oldest texts of the materials attested earliest in the IE dialects. The fundamental order of sentences in these early dialects cannot be determined solely by frequency of sentence patterns. For, like other linguistic constructions, sentence patterns manifest marked as well as unmarked order. Marked order is expected in literary materials. The documents surviving from the earliest dialects are virtually all in verse or in literary forms of prose. Accordingly many of the individual sentences do not have the unmarked order, with verb final. For this reason conclusions about the characteristic word order of PIE and the early dialects will be based in part on those syntactic patterns that are rarely modified for literary and rhetorical effect: comparative constructions, the presence of postpositions and prepositions, and the absence of prefixes, (...)*".

Lehmann is criticized by Friedrich (1975) who, like Watkins (1976) and Miller (1975), support a VO prehistoric situation, probably SVO (like those found in 'central' IE areas), with non-consistent dialectal SOV findings. In any case (viz. Lehmann and Miller), an older IE I or IE II OV (VSO for Miller) would have been substituted by a newer VO (SOV for Miller, later SVO through a process of verb transposition) – thus, all Indo-European dialects attested have evolved (thus probably from a common Late PIE trend) into a modern SVO.

Formal writings in Modern Indo-European should follow the patterns attested in the oldest inscriptions, i.e. (S)OV, as in Vedic Sanskrit, Ancient Greek, Old Latin and Avestan. A newer, general (S)VO order (found in Greek, Latin, Avestan, Germanic, etc.), reveals the change from OV in Middle PIE towards a newer VO that was replacing it already by Late PIE, and especially in North-West Indo-European.

9.1.1. KINDS OF SENTENCES

PIE sentences were either Nominal, i.e. formed by nouns, or Verbal, if they included a verb.

I. A Subject and a Predicate. The Subject of a sentence is the *person or thing spoken of*. The Predicate is *that which is said* of the Subject.

a. The Subject is usually a Noun or Pronoun, or some word or group of words used as a Noun.

b. The Predicate of a sentence may be a Verb (as *the dog runs*), or it may consist of some form of **es** and a Noun or Adjective which *describes* or *defines* the subject (as *It is good*). Such a noun or adjective is called a Predicate Noun or Adjective.

II. In Proto-Indo-European, simple sentences may be composed of only one word, a noun or a verb; as, *God!*, or *(it) rains*.

NOTE 1. Nominal sentences of this type are usually Interjections and Vocatives. Verbal sentences of this type include Imperatives (at least of 2nd P.Sg.) and impersonal verbs, which had never a subject in the oldest dialects attested; as, for Eng. *(it) rains*, cf. Goth. *rigneip*, Lat. *pluit*, Gk. *ὕει*, Skt. *várṣati*. It is believed that when IE dialects became SVO in structure, so that a subject was required, the third singular anaphoric pronoun, corresponding to *it*, German *es*, French *il*, etc., was introduced as subject in such sentences. Such pronouns were introduced because SVO languages must have subjects in sentences, as do intransitive verbs in any OV language. Such verbs could be supplemented by substantives in various cases, among them the accusative. These constructions are especially prominent for verbs referring to the emotions; as, Lat. *miseret*, *pudet*, *taedet*, Skr. *kitavāṃ tatāpa*. Compare also Cicero's Lat. *eōrum nōs miseret*, or O.H.G. *thes gānges thih nirthrūzzi*. In PIE sentences various case forms could be used with verbs. The simplest sentences may consist of verbs accompanied by nouns in seven of the eight cases; only the vocative is not so used. The nouns fill the role of objects or, possibly better stated, of complements.

NOTE 2. Besides the simple sentence which consists only of a verb, a simple sentence in the early dialects and in PIE could consist of a verb accompanied by a noun or pronoun as complement. A subject however wasn't mandatory. Nor were other constructions which may seem to be natural, such as indirect objects with verbs like 'give'. The root **dō-* or in its earlier form **deH-* had in its simplest sense the meaning 'present' and was often unaccompanied by any nominal expression (Lehmann).

9.1.2. NOMINAL SENTENCE

Nominal sentences, in which a substantive is equated with another substantive, an adjective, or a particle, make up one of the simplest type of sentence in PIE.

NOTE 1. Such a type of sentence is found in almost every IE dialect; cf. Hitt. *attaš aššuš*, "the father (is) good", Skr. *tvám váruṇa*, "you (are) Varuna", O.Pers. *adam Dārayavauš*, "I (am) Darius", Lat. *omnia praeclara rara*, "all the best things (are) rare", etc. In all dialects, however, such sentences were restricted in its use to a especially formal use or, on the contrary, they are found more often than originally in PIE. Thus, in Latin and Germanic dialects they are found in proverbs and sayings, as in Old Irish; in Greek it is also found in epic and poetry. However, in Balto-Slavic dialects the pure nominal sentence has become the usual type of nominal sentence, even when the predicate is an adverb or an adverbial case. However, such a use, which is more extended in modern dialects (like Russian) than in the older ones (as Old Slavic), is considered the result of Finno-Ugrian influence.

NOTE 2. In the course of time a nominal sentence required a verb; this development is in accordance with the subjective characteristic of PIE and the endings which came to replace the individual qualifier markers of early PIE. The various dialects no longer had a distinct equational sentence type. Verbs might of course be omitted by ellipsis. And, remarkably, in Slavic, nominal sentences were reintroduced, as Meillet has demonstrated (1906-1908). The reintroduction is probably a result of influence from OV languages, such as the Finno-Ugric. This phenomenon illustrates that syntactic constructions and syntactic characteristics must be carefully studied before they can be ascribed to inheritance. In North Germanic too an OV characteristic was reintroduced, with the loss of prefixes towards the end of the first millennium A.D. (Lehmann 1970). Yet in spite of these subsequent OV influences, nominal sentences must be assumed for PIE.

A. There are traces of Pure Nominal Sentences with a predicate made by an oblique case of a noun or a prepositional compound, although they are not common to all Indo-European dialects.

NOTE. Apart from Balto-Slavic examples (due to Finno-Ugric influence), only some isolated examples are found; cf. Skr. *havyaír Agnír mánuṣa īrayádhyai*, “*Agni must be prayed with the sacrifices of men*”, Gk. *pàr hépoige kai hálloi oi ké mé timésousi*, “*near me (there are) others who [particle] will praise me*” (Mendoza).

B. In addition to such expansions by means of additional nouns in nonrequired cases, sentences could be expanded by means of particles.

NOTE. For Lehmann, three subsets of particles came to be particularly important. One of these is the set of preverbs, such as *ā*. Another is the set of sentence connectives, such as Hitt. *nu*. The third is the set of qualifier expressions, e.g., PIE *mē* ‘(must) not’. An additional subset, conjunctions introducing clauses, will be discussed below in the section on compound clauses.

Preverbs are distinctively characterized by being closely associated with verbs and modifying their meaning. In their normal position they stand directly before verbs (Watkins 1964).

Generally, thus, Concordance governed both members of the Pure Nominal Sentence.

NOTE. Unlike the personal verb and its complements (governed by inflection), the Nominal Sentence showed a strong reliance on Concordance between Subject and Predicate as a definitory feature: both needed the same case, and tended to have the same number and gender.

THE COPULATIVE VERB

The copulative verb **es-** is only necessary when introducing late categories in the verbal morphology, like Time and Mood. Therefore, when the Mood is the Indicative, and the Time is neuter (proverbs without timing, or Present with semantic neuter) there is no need to use **es**.

NOTE 1. The basic form of nominal sentences has, however, been a matter of dispute. Some Indo-Europeanists propose that the absence of a verb in nominal sentences is a result of ellipsis and assume an underlying verb **es-** ‘be’ (Benveniste 1950). They support this assumption by pointing to the requirement of such a verb if the nominal sentence is in the past tense; cf. Hitt. *ABU.ĪA genzuḫalaš ešta*, “*My father was merciful*”. On the contrary, Meillet (1906-1908), followed by Lehmann and Mendoza, thought that nominal sentences did not require a verb but that a verb might be included for emphasis. This conclusion may be supported by noting that the qualifiers which were found in PIE could be used in nominal sentences without a verb. As an example we may cite a Hittite sentence which is negative and imperative, *1-aš 1-edani menahhanda lē idāluš*, “*One should not be evil toward another one*”. Yet, if a passage was to be

explicit, a form of **es-** could be used, as in Skr. *nákir indra tvád úttaro ná jyāyāṇ asti*, “No one is higher than you, Indra, nor greater”.

NOTE 2. On the original meaning of **es-**, since Brugmann (1925) meant originally “exist” hence its use as a copulative verb through constructions in which the predicate express the existence of the subject, as in Hom. Gk. *eím Oduseús Laertiádes*, “I am Odiseus, son of Laertes” (Mendoza). In PIE times there were seemingly other verbs (with similar meanings of ‘exist’) which could be used as copulatives; compare IE **bheu-**, “exist, become, grow” (cf. O.Ind. *bhávati*, or as suppletives in Lat. past *fui*, O.Ir. *ba*, O.Lith. *búvo*, fut. *bùs*, O.C.S. impf. *bease*, etc.), Germanic **wes-**, ‘live, dwell’.

9.1.3. VERBAL SENTENCE

The most simple structure of the common Indo-European sentence consists of a verb, i.e. the carrying out of an action. In it, none of the verbal actors (Subject and Object) must be expressed – the subject is usually not obligatory, and the object appears only when it is linked to the lexical nature of the verb.

NOTE. The oldest morphological categories, even time, were expressed in the PIE through lexical means, and many remains are found of such a system; cf. Hitt. *-za* (reflexive), modal particles in Gk. and O.Ind., modal negation in some IE dialects, or the simple change in intonation, which made interrogative or imperative a declarative sentence – in fact, the imperative lacks a mark of its own.

The relationship between the Subject and the Object is expressed through the case.

There is no clear morphological distinction between transitive and intransitive verbs in Proto-Indo-European.

NOTE. Some Indo-European dialects have specialized some verbal suffixes as transitives (causatives) or intransitives, as Gk. *-en*, Gmc. *-io*, Lat. *-a*, etc., while in some others a preverb combined with a verbal root makes the basic verb transitive or intransitive.

When subjects are explicitly expressed, the nominative is the case employed.

NOTE. Expression of the subject is the most prominent extension of simple sentences to include more than one substantival expression. Besides such explicit mention of the subject, predicates may consist of verbs accompanied by two or more nouns, in cases which supplement the meanings of the verbs (v.i.). Such constructions must be distinguished from the inclusion of additional nouns whose case forms indicate adverbial use.

Few verbs are mandatorily accompanied by two nouns.

1. the use of the dative in addition to the accusative, as in Skr. *tābhiām enaṃ pári dehi*, ‘Give him over to those two’.

2. the instrumental and ablative, as Skr. *áhan vṛtrám ... índro vājreṇa*, ‘Indra killed ... Vṛtra with his bolt’. Skr. *tvám dáśyūṃś ókaso agna ājaḥ*, ‘You drove the enemies from the house, O Agni.’

NOTE. While the addition to these sentences which is indicated by the nouns in the instrumental and the ablative is essential for the meaning of the lines in their context, it does not need to be included in the sentence for syntactic reasons.

3. The causative accompanied by two accusatives, as Skr. *devāṃ^usataḥ pāyayā havīḥ*, ‘Make the desiring gods drink the libation’.

In such sentences the agent-accusative represents the object of the causative element: as Arthur A. Macdonell indicated (1916), in a corresponding simple sentence this noun would have been given in the nominative, as Skr. *devā havīḥ pibanti*, ‘The gods drink the libation’.

Accordingly a simple verb in PIE was at the most accompanied by one substantive, unless the additional substantive was complementary or adverbial.

LOCAL CASES: PREDICATES WITH TWO OR MORE SUBSTANTIVES

Nonmandatory case forms are found in great variety, as may be determined from the studies of substantival inflections and their uses. Five groups of adverbial elements are identified: (1) circumstance, purpose, or result; (2) time; (3) place; (4) manner; (5) means.

1) Additional case forms may be used to indicate the Purpose, Result, or Circumstance of an action.

So e.g. the Instrumental in Skr. *mṛṇáyā naḥ suastí*, ‘Be gracious to us for our well-being’.

The Dative was commonly used in this sense, as in the infinitival form Skr. *prá ṇa áyur jīvāse soma tārīḥ* ‘Extend our years, soma, for our living [so that we may live long].’,

NOTE. Cf. Hitt. *nu-kan* ^m*Nana-Luin* *kuin* DUMU.LUGAL ANA ^m*Nuwanza* *haluki para nehhun*, ‘and the prince NanaLuiš whom I sent to Nuwanza to convey the message’ where Hittite dative noun *haluki*. (Raman 1973).

When an animate noun is involved, this use of the dative has been labeled the indirect object; as, Skr. *riṇákti kṛṣṇī raruṣāya pánthām*, ‘*Black night gives up the path to the red sun*’.

NOTE. As these examples may indicate, the dative, like the other cases, must be interpreted with reference to the lexical properties of the verbal element.

2) A further adverbial segment in sentences indicates the Time of Occurrence. The cases in question are various, as in Skr. *dívā náктаṃ śárum asmád yuyotam*, ‘*By day and during the night protect us from the arrow*’.

NOTE. The nominal form *dívā*, which with change of accent is no longer an instrumental but an adverbial form outside the paradigm, and the accusative *náктаṃ* differ in meaning. The instrumental, like the locative, refers to a point in time, though the “*point*” may be extended; the accusative, to an extent of time. Differing cases accordingly provide different meanings for nouns marked for the lexical category *time*.

3) Nouns indicating Place also differ in meaning according to case form:

A. The Accusative indicates the goal of an action, as in Lat. *Rōmam īre* ‘*go to Rome*’, Hitt. *tuš alkištan tarnahhe* ‘*and those (birds) I release to the branch*’ (Otten and Souček 1969:38 § 37).

B. The Instrumental indicates the place “over which an action extends” (Macdonell 1916: 306): *sárasvatyā yānti* ‘*they go along the Sarasvatī*’.

C. The Ablative indicates the starting point of the action: *sá ráthāt papāta* ‘*he fell from his chariot*’; and the following example from Hittite (Otten and Souček 1969): *iššaz (š)mit lālan AN.BARaš [d]āi*, ‘*He takes the iron tongue out of their mouths*’.

D. The Locative indicates a point in space, e.g., Skt. *diví* ‘*in heaven*’ or the locative *kardi* in the following Hittite example (Otten and Souček): *kardi-šmi-ja-at-kán dahhun*, ‘*And I took away that [illness which was] in your heart*’.

Nouns with lexical features for place and for time may be used in the same sentence, as in Skr. *ástam úpa náktam eti*, ‘*He goes during the night to the house*’. Although both nouns are in the Accusative, the differing lexical features lead to different interpretations of the case. In this way, inflectional markers combine with lexical features to yield a wide variety of adverbial elements.

4) Among the adverbial elements which are most diverse in surface forms are those referring to Manner. Various cases are used, as follows.

A. The Accusative is especially frequent with adjectives, such as Skt. *kṣiprám* 'quickly', *bahú* 'greatly', *nyák* 'downward'.

B. The Instrumental is also used, in the plural, as in Skt. *máhobhiḥ* 'mightily', as well as in the singular, *sáhasā* 'suddenly'.

Similar to the expression of manner is the instrumental used to express the sense of accompaniment: Skr. *devó devébhīr āgamat*, 'May the god come [in such a way that he is] accompanied by the other gods'.

C. The Ablative is also used to express manner in connection with a restricted number of verbs such as those expressing 'fear': *rējante víśvā kṛtrímāṇi bhīṣā*, 'All creatures tremble fearfully'.

5) Adverbial expressions of Means are expressed especially by the instrumental; as, Skr. *āhan vṛtrám ... índro vājreṇa*, 'Indra killed ... Vṛtra with his bolt.' The noun involved frequently refers to an instrument; cf. Hitt. *kalulupuš šmuš gapinit hulaliemi*, 'I wind the thread around their fingers'.

Animate nouns may also be so used. When they are, they indicate the agent: *agnínā turváṣaṃ yáduṃ parāvāta ugrā devaṃ havāmahe*, 'Through Agni we call from far Turvasa, Yadu, and Ugradeva'. This use led to the use of the instrumental as the agent in passive constructions.

9.2. MORPHOSYNTAX

9.2.1. VERBAL MORPHOSYNTAX

In addition to its lexical meaning, the finite verb consists of grammatical categories, which are in turn composed of the following five dimensions: person, number, mode, tense-aspect, and diathesis.

NOTE. Information on PIE morphosyntax is almost exclusively taken (literally or modified) from M Meier-Brügger's Indo-European Linguistics (2003).

- a. The categories in themselves are three categories of number (singular, dual and plural), the four modes (indicative, imperative, subjunctive, optative), the four tense-aspects (present, aorist, perfect, future), and the three diatheses (active, middle, passive).
- b. Transitivity is not marked morphologically, but rather is expressed through the presence of an accusative morpheme in the complement.

9.2.1.1. PERSON AND NUMBER

1. Within the dimension of person, PIE features three categories which are normally numbered following the example of grammarians of antiquity. In the singular, the first person indicates the speaker; the second, the person to whom he speaks; and the third, that about which one speaks.

Thus, the first person refers in every case to a human being, or rather to an object that is thought of as animated. The second person essentially refers to a being that is thought of as listening, or an accordingly conceived object. The third person, on the other hand, has no natural tendency to indicate either living beings, or objects, and can indicate the one just as well as the other.

The plural of the first or second person does not necessarily indicate that there is more than one speaker, or people, to whom one speaks, but may simply indicate that the speaker and listener represent groups. The distinction between the inclusive first person plural ('we', i.e. including the speaker, his group, and the listener) and exclusive first person plural ('we', i.e. the speaker and his group, without the inclusion of the listener) cannot be reconstructed as Proto-Indo-European. That which is true of the plural, also applies to the dual.

2. In the verbal as in the nominal number categories, PIE features a singular, a plural and a dual. In the case of the verb, number refers to the number of living beings or things that are indicated by the subject noun. The number plural does not indicate that the verbal activity takes place repeatedly or over a longer duration; this is expressed by the activity type of the verb (Dressler 1968).

Number is the dimension in which, in general, agreement exists between verbal and nominal inflection, namely the agreement between the finite verbal form of the predicate and nominal form of the nominative subject. The verbal aspect of 'person' must, with

regard to agreement, be considered in another light: aside from its reflection in the verb form, 'person' is not a grammatical category, but rather a lexical one, one that is firmly linked to the personal pronoun.

9.2.1.2. TENSE-ASPECT AND MOOD

1. The dimensions 'tense-aspect' and 'mood' are linked in their functions and appear together. While tense and aspect are represented within a single morpheme and are thus connected with each other in terms of content, the category of 'mood' is sometimes expressed using a proper modal morpheme, as in the cases of the subjunctive and optative, and is sometimes expressed through the use of different endings (indicative, injunctive, imperative).

2. Using aspect, the speaker places the verbal action in a chronological relationship, whereby he specifies whether the verbal action is completed (perfective aspect) or in course (imperfective aspect). When the grammar of a language includes this distinction, the language in question is considered an aspectual language. Aspect is a grammatical dimension.

NOTE. H. Rix theorizes that an earlier phase of Proto-Indo-European featured a larger number of categories within the aspect dimension, and otherwise no longer distinguished between grammatical aspect and lexical aspect, rather uniting the two under the rubric 'aspect-action type'.

3. Unlike grammatical aspect, lexical aspect (i.e. manner of action, or *Aktionsart*) is a property of the verbal meaning, and thus belongs to the lexical realm. Lexical aspects are not uniform in terms of content: They sometimes refer to the process of verbal activity, sometimes to the subject. Lexical aspects that refer to the process of verbal activity may be divided into telic and atelic lexical aspects, the former being those that only last a moment, the latter, those of more significant duration. Telic lexical aspect may be the result of the verbal activity as a whole (momentative), of its beginning (initial-terminative), or of its end (final-terminative). Atelic lexical aspect is a feature of verbal activities that last longer (durative), or are repeated (iterative). Lexical aspects that refer to the subject may concern a desire of that subject (desiderative), or the bringing about of a state of affairs (factive), or the cause of an event (causative). In terms of contents, lexical aspects are sometimes similar to grammatical categories, e.g. the desiderative lexical aspect and the optative mood, which overlap in the first person singular when the

speaker and subject are one and the same. The factitive and the causative lexical aspects correspond to the active voice. Because lexical aspect and aspect are sometimes similar, the lexical aspect system can be carried over into the grammatical aspect system and vice versa, as may be observed in the evolution of Proto-Indo-European into the individual languages. Evidence of the change from lexical aspect to a grammatical aspect may even be observed in suppletive verbal paradigms with stem forms of different verbal roots, e.g. ‘carry’, ‘bring’: Lat. pres *ferō* vs. perf. *tulī*; Gk. pres *pherō* vs. aor. *éneukon*.

4. Proto-Indo-European features three tense-aspect stems for expressing tense and aspect: aorist stem, present stem, and imperfect stem. The imperfect stem is formed from the present stem. The indicative forms of the tense stem only indicate the present (indicative present, perfect) and past (indicative aorist, imperfect); future actions were expressed through the subjunctive mood.

NOTE. In the post-Proto-Indo-European period, there were, aside from the languages that continued the use of the subjunctive, various other means of expressing future actions, including a new future stem formation (v.s.). Periphrastic future was expressed by means of an auxiliary verb, usually meaning “become” in North-West IE, while Hittite had “come” or “go” (cf. Hitt. *uwami/paimi*) + present. Vedic had also a form in *-tar-* (*nomen agentis*) + copula.

5. In its task as an indicator of tense, the present stem reveals a similarity to both the perfect stem and the aorist stem. The Perfect, like the present indicative, refers to the present tense, indicating a state of affairs to which the verbal action led, e.g. ‘the goat has eaten’, i.e. ‘the goat is sated’. On the other hand, the Imperfect, which derives from the present stem, has in common with the aorist a reference to the past tense: The imperfect and the indicative aorist differ only in their stem forms and are otherwise formally identical. The indicative aorist cannot be used to indicate the present tense, since the indicative aorist paradigms do not feature primary endings that indicate the ‘here and now’ of the communication process. This is due to the perfective aspect, which in the indicative excludes the possibility of referring to the present and has more of a future meaning. The Proto-Indo-European aorist and perfect categories merged into the perfect in Latin.

Examples:

a) Present: Plautus *Trinummus* 400, *aperiuntur aedes* “the house is opened”; I 100 *nóston díznai meliēdéa* “You seek honey-sweet homecoming”, RV 10, 107, 7 *dákṣiṇāśvam dákṣiṇā gām dadāti* “the Dakṣiṇā gives a steed, the Dakṣiṇā gives a cow”.

b) Imperfect: Plautus *Casina* 178, *nam ego ibam ad te* “for I came to you”; M 152 *mála gār kraterōs emákhonto*, “for they fought very hard”.

c) Aorist: D 459 *tón rh' ébale prōtos* “It was him that he hit first”; RV 10, 85, 41 *rayīm ca putráms cādād* “He gave riches and sons”.

d) Perfect: Plautus *Captivi*, 575 *servos es, liber fuisti* “A slave you are; free you have been”; t 72 *kakà dè khroi eímata eímai* “I have bad clothing on my skin”; RV 4, 16, 6 *apó ríreca* “he released the water”.

6. Aside from the category of tense, the Aorist stem indicates the perfective aspect, the Present stem the imperfective aspect, and the Perfect stem a sort of resultative aspect. While the present and the aorist form a dichotomy, the perfect is isolated outside of this dichotomy. The isolated position of the perfect is also shown by the fact that the perfect, unlike the aorist and the present, has no moods other than the indicative, while it is precisely in the moods other than the indicative that the aspectual opposition of aorist and present is relevant. It thus remains questionable whether or not one may speak of aspect in the case of the perfect. In any case, the perfect is situated outside of the aspectual opposition of the present and the aorist.

NOTE. H. Rix thus describes the qualities of the perfect: “Primary affixes as reduplication, mark, among other things, modes of action in PIE, and differences of the endings distinguish, among other things, voices. The PIE perfect, therefore, is to be defined as a certain mode of action that appears in a certain voice only”.

7. The Indicative is used for statements to which the speaker lends validity: By using the indicative, the speaker gives his statement the character of a true statement. Whether or not the contents of the statements in fact correspond to reality, is of course uncertain.

Examples – D 443 *epí khthoni baínei* “she runs on the earth”; RV 1, 105, 1 *candrāmā apsvāntár ā suparṇó dhāvate diví* “the beautifully winged moon runs in the waters across the sky”.

8. According to K. Hoffman (*Injunktiv* 1967), the Injunctive serves to mention an action, without specifying chronology.

9. Proto-Indo-European Syntax

NOTE. The injunctive in Vedic expresses verbal definiteness, or the presumed validity of an action. It receives a special function in prohibitive phrases in which it is then used in combination with the negation *mā́* in order to express that something is forbidden.

9. The Imperative, particularly the true, 2nd person imperative, holds a special place in the verbal paradigm, similar to that in the nominal paradigm occupied by the vocative, which is equally directed to a listener, and with which the imperative shares the formal characteristic of having a singular form which is composed of the stem without an ending, with no sign of its connection to the sentence.

Examples – Plautus, *Mostellaria*, 387 *habe bonum animum* “have good courage”; B 331 *áll’ áge mímnete pántes* “come now, stay”; RV 1, 16, 6 *tām indra sáhase piba* “Drink this, oh Indra, for strength”.

In addition to the true imperative, which expresses a request or an order that demands the immediate execution of the verbal activity, another form of expression for instructions and requests with a temporal function developed from the association of this imperative form with the ablative of the demonstrative pronoun PIE **tōd**. While these instructions and requests have the immediate validity of the true imperative, they do not bring about the immediate execution of the verbal activity.

Interdictions, or negative orders or requests, are, unlike positive orders and requests, not expressed with the imperative, but rather with the injunctive in connection with the negation PIE **mē** (or **nē**). The use of the infinitive to name the prohibited verbal activity in early PIE dialects is comparable.

10. According to Delbrück’s investigations of fundamental notions (Ai. Syntax 1888), the Subjunctive mood expresses a will, while the Optative mood expresses a wish. It is important to note that the will or the wish (as the case may be) that is meant is that of the speaker, and not that of the subject, or, more precisely stated, that of the actor that is designated by the nominative form. The wish of the subject was originally expressed through its own derivational verbal form, namely, the desiderative. For Gonda (1956), the characteristic properties are ‘visualization’ for the subjunctive, and ‘eventuality’ for the optative. According to A. Scherer (1969), “the subjunctive draws the conclusion from a given situation. The subjunctive would then indicate a state of affairs, which *according to the relevant facts*, may be accepted as factual (i.e. concluded from the circumstances

to be *necessarily* true), while the indicative reports what the speaker knows (or believes to know), or asserts as a fact. The optative characterizes merely that the state of affairs was thought”.

a. The Subjunctive, which originally indicates the future, has two functions: In its prospective function, it serves to express things that happen in the future, while in its voluntative function, it indicates the will of the speaker. The subjunctive is used to express his will when he considers that it is within his power to bring about the verbal action. A declaration of will in a strict sense is only possible when the speaker has direct influence on events, such that that which is desired may also be executed. This means that a true expression of will may only be in the first person singular, while all other cases are equally requests. If the first person subjunctive is taken as a request made of oneself, a connection to the second and third person subjunctive is possible in which the speaker has no direct influence on the realization of the verbal action, so that the statement may only be understood as a request. A further connection may be made with the 1st person plural, in which the speaker communicates his own will, and at the same time directs a request to others.

Examples:

a) 1 sg.: Plautus *Cacchides* 1049 *quod perdundumst properem perdere* “what may be lost, I will/want to hurry up and lose”; u 296 *áll’ áge oí kai egó dō kseínion* “thus I will/want to give a gift of welcome also to him”; RV 10, 39, 5 *purāṇā vāṃ vīryā prá bravā jáne*, “your earlier heroic deeds I will/want to announce to all people”; RV 6, 59, 1 *prá nú vocā sutēṣu vām* “On the occasion of the pressing, I thus will/want to announce the heroic deeds of both of you”.

b) 1 pl.: W 601 *nun dē mnēsómetha dōrpou* “now we will/want to think about the meal”; RV 5, 51, 12 *svastáye vāyúm úpa bravāmahai* “We will/want to call to Vaayu for the sake of welfare”.

c) 2nd person: Plautus, *Mostellaria*, 388 *taceas* “you should remain silent”; RV 4, 31, 3 *abhī śú naḥ sákhīnām avitā jaritṛñām satám bhavāsi ūtibhiḥ* “you, oh helper of the singer’s friends, will/should protect us well with a hundred helps”.

d) 3rd person: Plautus, *Captivi* 115 *sed uti adserventur magna diligentia* “but they should be guarded with great care”; H 197 *óu gár tís me biē ge ekòn aékonta diētai* “For

none will/should force me to leave against my own will”; H 87 *kaí poté tis eípēsi kai ópsigónōn ánthrōpōn* “and one day, even one of the descendants will say”; RV 8, 1, 22 *sá sunvaté ca stuvaté ca rāsate* “who will/should give both to him who presses, and to him who prizes” RV 10, 81, 7 *sá no víśvāni hávanāni joṣad* “That man will/should be friendly and take receipt of all our sacrifices”.

b. The Optative, which originally indicates possibility, has two functions, either expressing the wish of the speaker (desiderative function), or expressing possibility (potential function). When the optative is used to express a wish, the speaker indicates that he is not directly able to bring about the verbal action. The optative proves to be more uniform than the subjunctive, given that in its cupitive function, the optative, independently of the category of person, always indicates a simple wish of the speaker, regardless of his influence on the realization of the verbal action.

Examples of the potential function: – Plautus, *Amphitruo*, 1060 *nec me miserior femina est neque ulla videatur magis* “a more miserable woman than myself does not exist, and will most probably never be seen”; Terence, *Eunuchus*, 511 *roget quis* “one might ask”; Z 122f. *óu tis keínon anēr alalémenos elthōn alléllōn peíseie gunaiká te kai phílon uión* “a man, who comes traveling with news of that, could not convince his son and the woman”; RV 5, 50, 1 *víśvo devásya netúr mártō vurīta sakhyām* “each mortal will likely desire the friendship of the leading god”.

Examples of the desiderative function:

a) 1st person: S 121 *nun dē kléos esthlón apoímēn* “and now I would like to wrest noble fame”; RV 6, 13, 6 *víśvābhír gīrbhír abhí pūrtīm áśyām* “by all songs, I would like to obtain fulfillment”; RV 1, 4, 6 *syā́méd índrasya sármani* “we would like to be under Indra’s protection”.

b) 3rd person: Terence, *Eunuchus*, 302 *ut illum di deaeque senium perdant* “that elder is the one that the gods and the goddesses would like to ruin”; A 18 *umīn mēn theoi doien* “to you indeed, the gods like to give”; P 416f. *all’autou gaia mélaina’ pasi khánoi* “the black earth should open to all precisely here”; RV 5, 21, 4 *devāṃ vo devayajyáyaagnim īlīa mártyaḥ* “the mortal should praise your god Agni through worship”.

In terms of content, the similarity between the prospective function of the subjunctive and the potential function of the optative is evident in the comparison of Z 459 *kaí poté*

tis eípēsin “one day, someone will say” and Z 479 *kaí poté tis eípoi* “one day, someone will in all likelihood say”.

9.2.1.3. DIATHESIS

1. Within the dimension of diathesis, three categories may initially be reconstructed: active, middle and stative.

2. Active and middle voices may be distinguished formally by their endings, v.s. However, in terms of content, the attribution of agentivity to the active voice and patientivity to the middle voice is not tenable: Lexemes with active contents are not always used in the active voice, just the same as lexemes with patientive content are not always used in the middle voice. Owing to the incompatibility of lexical meanings with one or the other voice, some verbs only occur in either the active or the middle voice.

3. Originally, the middle voice had a reflexive meaning, thus incorporating the function of the passive voice. The middle voice appears when the verbal action affects the subject directly or indirectly, or, when the verbal action does not have an affect beyond the subject. When the subject is plural or dual, the middle voice also expresses reciprocity.

4. In addition to the active and middle voices, a third diathesis category may be distinguished, the stative, indicating a state of being (related to the Perfect and early Middle endings, v.s.). The stative voice expresses the subject's state of being. In Proto-Indo-European, the stative merges on the one hand with the middle voice, which, in addition to its original reflexive meaning, takes on the additional ‘state of being’ meaning of the stative, and on the other hand, forms the basis for the perfect, which formally differs from the stative by its reduplication.

NOTE. H. Rix describes the earlier distribution of functions that became the middle voice in the following way: “It is quite obvious how to distribute the two functions of the more recent middle voice among these two older voices: the content of the middle was the reflexive along with the passive, and the content of the stative was the deponent”. Rix emphasizes that the middle voice is more related to the stative voice than to the perfect mood: “It is this voice ‘stative’ and not the mode of action ‘perfect’, that is the partner of the voice middle”.

5. The function of the category ‘passive’, which appears in many IE languages, but did not exist as a grammatical category in Proto-Indo-European, was performed by the

middle voice. The various IE languages that feature a passive voice each formed it independently from each other (v.s.).

6. According to I. Mel'čuk, there is a difference between 'diathesis' and 'voice'. According to his view, one speaks of 'diathesis' in cases in which forms of the same verb that are commonly said to differ in voice cannot be used to describe the same real situation. Such is the case of middle voice forms and their corresponding active forms. On the other hand, the possibility of referring to the same real situation exists in the case of the passive forms that correspond to active forms. In this case, one speaks of 'voice'.

9.2.1.4. PERIPHRASTIC CONSTRUCTIONS

Relative to the ancient IE languages, periphrastic constructions of the type Lat. *quid futūrum est* 'what should that become', or *quod habeo tollere* 'what I intend to take', are considered new. However, such forms are attested in the Hittite of the 2nd millennium BC, e.g. the *ḫark-* constructions for the perfect and pluperfect.

If in fact the Latin perfect of the type *portāvi* may be traced to the periphrase **portāwosis esom* (i.e. an active perfect participle with *-wos-* + *verbum substantivum*), then also it must date from prehistoric period. Thus, it may not be ruled out that Proto-Indo-European already featured several periphrastic constructions.

NOTE. Meier-Brügger (2003) further states: "I also consider cases such as the following to be similar to paraphrases: Lat. *vēndere* < *vēnum* **dide-* 'to put up for sale', in the sense of 'to sell' vs. *venīre* < *vēnum* *īre* 'to go for sale' in the sense of 'to be sold' (*dide* must here be traced to PIE **d^heh₁-*, and not to **deh₃-* (...). Or, similarly, *interficere* 'to separate (from life), to make disappear', in the sense of 'to kill', vs. *interīre* 'to go and disappear' in the sense of 'to decline' (*-facere* makes clear that this is a case of PIE **d^heh₁-*). This combination of substantivized verb or preverb and **d^heh₁-* (in the active sense), or **h₁ei-*, 'to go' (in the passive sense) certainly dates from a pre-individual language period".

9.2.2. NOMINAL MORPHOSYNTAX

The verb, with its system of categories, presents a contrast with all other inflectable parts of speech, which share a common system of categories. For this reason, one speaks of nominal categories when speaking not only of the noun, which includes substantives and adjectives, but also when speaking of pronouns. The commonalities that combine these word types are the case and number categories

In the case of adjectives and gendered pronouns, the dimension of gender is not directly linked to the lexeme.

The personal pronoun plays a special role among the pronouns and nouns, not just because it does not distinguish between gender, but also because personal pronouns, unlike other pronouns, do not in fact take the place of nouns, which is why it would be better to use the term 'personals'. Unlike the case of verbs, the dimension 'person' in personal pronouns is lexical.

9.2.2.1. CASE

1. To each case may be attributed a certain meaning. To be certain, the meaning may vary from the central meaning in certain cases. Meanings of cases vary as do lexical meanings, according to context. However, two opposing meanings may not be unified in a single linguistic symbol. The meaning of a case is generally independent of context, while the various functions are determined by the context. In the wider context of a sentence, there are certain roles that may be assigned to the various nominal forms that appear in the sentence. These roles, however, are independent of the linguistic symbol and concern the actual situation, which may be described quite variously by the speaker. The same actual situation may thus be described in an active construction, or in a passive construction: *The cat ate the mouse.* – *The mouse was eaten by the cat.* In the one case, the nominative form 'cat' corresponds to the *agens*, in the other, the nominative form 'mouse' corresponds to the *patiens*. *Agens* and *patiens* are two opposing roles, which may neither be assigned as different meanings of a single linguistic symbol, nor classified as functions of a single meaning. As roles, *agens* and *patiens* are separated from the linguistic symbol of the nominative and may not be indicated by the nominative. Rather, the nominative indicates that which is in the foreground, thus, the theme; whether the *agens* or the *patiens* provides the theme is unimportant.

2 The claim is often made that case meaning is least distinct in the case of complements, and most distinct in the case of extensions. According to W. U. Dressler: "case forms are obligatory completions of verbs (...) subjects and objects are automatic results of the use of verbs, which, in their dependence schemes, present corresponding fillable spaces" and further "here remains the function of case in the facultative extension of the sentence. Here, the case has syntactical value of its own"; Haudry: "As a general

rule, one may assert that government tends to deprive the case of its own semantic contents; a governed use is defined by a function. Positive semantic contents may only appear in free uses”; Pinkster: “the semantic relations within a sentence are revealed by the cases only to a very limited extent, because: - within the nuclear predication the predicate determines the possibility of lexemes to occur as arguments with the predicate; the number and nature of the semantic functions are fixed for each verb; - outside the nuclear predication the lexical meaning itself determines to a high degree whether a lexeme may be used with a given semantic function”. However, the claim may not be made with such a comprehensive validity (Hettrich 1988). Because the nominative does not occur as an extension, its meaning as a complement cannot be compared with that of an extension. The locative, on the other hand, may always indicate a spatial relationship, regardless of whether it is a complement or a given.

3. Although they have meanings that sometimes vary greatly, different cases fit into a single paradigm: Thus, in terms of content, the nominative case, when used to indicate a grammatical subject, is completely different from the locative case when it is used to indicate the spatial aspects of the verbal action.

a. The order in which cases are listed originates in Sanskrit grammar, in which the cases in the paradigm that were formally identical were grouped together in each of the three numbers. However, this formal criterion is not a purely external characteristic. This formal identity is also generally defensible in relation to meaning, just as the partial formal fusion of various case forms may be seen as a preliminary phase of case syncretism.

b. Proto-Indo-European cases may be classified into groups according to aspects of content: There are cases with rather abstract meaning, that cross-reference within the language system, and others that have rather concrete meaning, referring primarily to language-external reality. This differentiation is not new, but must not be seen as an absolute classification, since individual cases are situated between the two poles, able to be used concretely or syntactically.

Cases assume particular meanings in the establishment of spatial relations of the verbal action: The spatial cases are the locative (where?), the accusative (where...to?), and the ablative (where...from?). The noun that indicates the place to which the verbal action

refers is declined in one of these cases, allowing that which is signified by the subject (in the case of intransitive verbs), or that which is signified by the object (in the case of transitive verbs), to be spatially situated. That which is spatially situated is referred to as the *locatum*; that which refers to the place of reference, is the *relatum*.

4. A common phenomenon of the linguistic development from Proto-Indo-European to the IE languages is case syncretism, which means that cases which were originally separate from each other and distinguishable by their endings, were subsumed into a single ending. The spectrum of meaning of the resulting case becomes correspondingly broad, rendering the task of discerning a basic meaning of the case more difficult.

In Latin, the ablative represents the merger of three cases: instrumental, ablative and locative. In Greek, the PIE instrumental and locative cases merged to form the dative, and the ablative was subsumed in the genitive.

NOMINATIVE

The Nominative occupies a special position within the nominal paradigms of IE languages. This position is revealed by, among other things, the fact that in Old Indian – apart from neuter forms – all three numbers are formed on the basis of the strong stem and that the columnal nominal accent in Greek follows the accent position in the nominative case. Within the realm of syntax as well, the nominative traditionally plays a special role as the *casus rectus*, which contrasts with all the other *casus obliqui* of the paradigm.

The nominative indicates the theme of the sentence which, in a non-marked sentence, is placed in sentence-initial position. Other sentence elements are also thematized in taking the sentence-initial position, which, in the non-marked sentence, is reserved for the subject.

“The Proto-Indo-European nominative does not indicate the subject of an action in the logical sense, but rather in the sense that appears to the observer to be bearer and middle-point of the action that is expressed by the verb” (Delbrück 1879). However, this does not apply to the interrogative pronoun, which places its referent in the middle-point, even when it does not take the subject position and is not the bearer of the verbal action. The concept of the subject is itself difficult to grasp; for H.-J. Sasse it is “a

syntactical relation with semantic and pragmatic functions... [the] sentence element that is indicated as the subject has a doubled function as it is both pragmatic (as an indicator of the topic of the sentence) and semantic (as an identifier of the agent). This double-function finds expressing in its syntactical characteristics (Sasse, 1982).

VOCATIVE

The Vocative is the nominal form that is used for addressing a listener. There is only a distinct vocative in the singular, and even then, not all nominal paradigms feature a separate vocative form. Where there is no separate vocative, its function is taken by the nominative. The same occurs when two actions of addressing are linked: While the first is in the vocative, the second is in the nominative. – Examples: G 276f. *Zeu páter...Héliós th'* “Oh father Zeus and Helios”; RV 3, 25, 4 *ágna índraś ca* “Oh Agni and Indra”.

i. The vocative element in the sentence receives no accent. – Example: RV 1, 184, 2 *asmé ū śú vṛṣaṇā mādayethām* “Enjoy yourselves nicely, you two heroes, in our company”.

ii. In Old Indian, when the vocative forms a sentence of its own, and is thus in sentence-initial position, it receives stress, regardless of its normal nominal accent, on its first syllable, i.e. on the first syllable of the sentence. In this case, sentence stress is meant and not word stress. – Example: AV 19, 70, 1 *dévā jīvata* “Gods! Live!”

ACCUSATIVE

The Accusative has two apparently very different functions: On the one hand, it indicates the direct object in the case of transitive verbs (i.e. accusative object), on the other hand, it expresses that the verbal action bears an orientation in terms of space (i.e. directional accusative). The accusative is further used to express spatial or chronological expanse (i.e. accusative of expanse). In addition, it expresses the relation of the verbal action to a referent in a non-spatial sense (relational accusative). Finally, the accusative is also used when the contents of a verb are additionally expressed through a noun which appears in the accusative (i.e. accusative of contents): The technical term for this use of a substantive and a verb with the same lexical contents is *figura etymologica*. The original meaning of the accusative is probably that of direction, in the sense of spatial relation.

The additional meanings that developed upon this basics include extent, relation, object and contents.

i. According to Hübschmann (*Casuslehre* 1875), the accusative indicates the “completion or narrower definition of the verbal concept”, distinguishing an obligatory accusative, i.e. the object accusative, from a facultative accusative. Delbrück (*Gr. Syntax* 1879) thus describes the use of the accusative: “Originally, it served neither to indicate the object, nor the destination, nor the relation, etc., but rather simply to complement the verb. The choice of senses in which this complement was to be understood was left to the listener”. He further asserts that there were “different types of uses...already in the Proto-Indo-European period”.

ii. As an indicator of place, the accusative is similar to the locative which is also used to indicate the arrival at a destination toward which a movement was oriented. In contrast, although the accusative does not exclude the arrival at a destination, it is semantically indifferent to the question of arrival at a destination (García Ramón, 1995).

NOTE. It remains disputed whether the local or grammatical meaning of the accusative is original. According to G. De Boel (1988), the directional accusative is not inherited, but rather newly created.

iii. Equally unclear is the relationship in Proto-Indo-European of a specialized directional case, the ‘directive’, which was continued in Anatolian, to the directional accusative. According to G. Dunkel (1992), the directive only indicates the direction: “It expressed only the aim or direction of a movement”. In comparison, the accusative and the locative have additional meanings: the accusative indicates “attainment of the goal and entering it”; and the locative, “attainment of the goal...and...state of rest”.

iv. Only miscellaneous remnants of the accusative of direction without the use of a preposition are extant in Latin, e.g. *domum* “to home”, *rus* “to the countryside”.

Examples:

a) Accusative of direction: A 322 *érkhesthon klisiēn* “go both of you to your tent”; K 195 *ósoi kekléato boulén* “who where summoned for consultation”; TS 6, 2, 11, 4 *yadā́ múkham̐ gachaty áthodáraṃ gachati* “if it goes to the mouth, then it goes to the stomach”.

b) Accusative of extent: Plautus, *Truculentus* 278 *noctem in stramentis pernoctare* “to pass one night in the straw”; Psi 529 *douròs erōén* “at a spear throw’s distance”; I 190 *kheima* “in the winter”; TB 1, 3, 6, 3 *saptádaśa pravyādhān ājīm dhāvanti* “they run a race for a distance of seventeen times the range of one shot”; TB 1, 1, 3, 9, *só asvatthé saṃvatsarām atiṣṭhat* “he remained in the tree for one year”.

c) Accusative of relation: Plautus, *Menaechmi* 511f. *indutum...pallam* “clothed in a dress”; E 354 *melaíneto dè khróa kalón* “and she was reddened on her beautiful skin”; SB 14, 7, 2, 27 *nàinaṃ kṛtākṛté tapataḥ* “neither things done, nor things undone hurt this one”.

d) Object accusative: SB 14, 7, 1, 24 *jighran vái tát ghrūtávyam ná jighrati* “truly smelling, he smells not what is to be smelled”.

e) Accusative of content: Plautus, *Captivi* 358 *quod bonis bene fit beneficium* “which charitable act is well direct to the good”; O 414 *álloi d’ ámph’ állēsi mákhēn emá-khonto néessin* “here and there they fought the fight for the ships”; RV 8, 7, 4 *yád yāmaṃ yānti vāyúbhiḥ* “when they go the way with the winds”.

INSTRUMENTAL

The instrumental case indicates that which accompanies the verbal activity. This meaning forms the basis from which other meanings have developed: In the case of inanimate objects, the instrumental indicates the means by which the verbal action is executed; in the case of a person, it indicates that the person executes, or helps to execute the action; in the case of places, it indicates where movement takes place. The instrumental further indicates constitution, accompanying circumstances, a reason, and in comparisons, the distinguishing characteristic. The function of the instrumental that relates to people, or ‘sociative’ function may be reconstructed in Late Proto-Indo-European. However, this function finds its origins in a use that is purely related to inanimate objects (K. Strunk 1993). In the indication of temporal circumstances, the instrumental bears a resemblance to the temporal locative. In Latin, the instrumental, like the locative, has merged into the ablative. In Greek, the instrumental has merged with the dative.

Examples:

a) Instrumental of accompaniment: Plautus, *Amphitruo* 219 *postquam utrimque exitum est maxuma copia* “after they marched up in great numbers on both sides”; I 160f. *enthád’ ikáneis nēi te kai etároisi* “you arrive here with the ship and the companions”; RV 1, 1, 5 *devó devébhīr ā gamat* “the god should come here with the gods” RV 5, 51, 1, *vís vair ūmebhīr ā gahi* “come here with all helpers”; RV 1, 92, 7 *divá stave duhitā gótamebhīh* “the daughter of the heavens is prized by the Gotamas”.

b) Instrumental of means: Plautus, *Truculentus* 526f. *neque etiam queo / pedibus mea sponte ambulare* “and I cannot even walk around independently on my own feet”; Lucretius 4, 387 *vehimur navi* “we sail with the ship”; A 527 *kephalē kataneúsō* “I will nod with my head”; M 207 *péteto pnoīēs anémoio* “he flew with a breath of the wind”; RV 1, 128, 3 *śatām cákṣāṇo akṣábhīh* “the god that sees with a hundred eyes”; RV 3, 32, 14 *nāvéva yāntam* “as to those who go with the ship”.

c) Instrumental of route: Plautus, *Curculio*, 35 *nemo ire quemquam publica prohibet via* “no one hinders another from walking on a public street”; Plautus, *Poenulus*, 1105 *terra marique* “on earth and sea”; RV 1, 25, 7 *antárikṣeṇa pátatām* “which fly in the air”; RV 3, 58, 5 *éhá yātam pathíbhīr devayānāih* “comes this way on divine paths”; RV 5, 64, 3 *mitrásya yāyām pathā* “I would walk on Mitra’s path”.

d) Instrumental of constitution: Cato, *De agricultura* 88, 1 *amphoram defracto collo* “an amphora with a broken neck”; PY Ta 641.1 *ti-ri-po e-me po-de* i.e. *tripos hemē podē* “a tripod with one leg”; RV 4, 7, 3 *dyām iva st’rbhīh* “like the heavens with the stars”.

e) Instrumental of accompanying circumstances: L 555 *tetinóti thumō* “with a worried temperament”; s 199 *phthóggō eperkhómenai* “coming forward with noise”; RV 4, 13, 1, *út sūryo jyótiṣā devá éti* “up comes the divine sun with light”; RV 9, 97, 36 *índram ā vi ś a bṛhatā ráveṇa* “go to Indra with great noise”.

f) Instrumental of reason: Plautus, *Amphitruo* 1118 *nam mihi horror membra misero percipit dictis tuis* “for fright seizes from poor me my limbs because of your words”; Ph 390 *gēthosúnē* “out of joy”; SB 1, 2, 3, 1 *sá bhīṣā ní līlye* “he hid himself out of fear”.

g) Instrumental of comparison: Plautus, *Cistellaria* 205 *qui omens homines supero antideo cruciabilitatibus animi* “I, who supersede all men, surpass in tortures of the heart”; G 194 *eurúteros d’ōmoisin* “wider, however, than the shoulders”.

DATIVE

When used to indicate people, the dative indicates an actor or actors who receive (action; [indirect] object dative) or possess (state; possessive dative). Further, while the dative is used to indicate one who is positively or negatively affected (*dativus commodi/incommodi*), only the quality of being affected is expressed by the dative; the positive or negative connotations themselves remain outside of the domain of the dative. When applied to abstract nouns, the dative indicates that the noun is the goal of an action (*dativus finalis*). This function is important for the formation of infinitive constructions.

Examples:

a) Relational dative: Plautus, *Stichus* 260 *nullan tibi lingua est?* “have you no tongue?”; Plautus, *Mostellaria* 293 *tibi me exorno ut placeam* “I adorn myself for you, in order to please”; Plautus, *Rudens* 229 *quoniam vox mihi prope hic sonat?* “what voice thus sounds for me so near?”; Plautus, *Rudens* 274 *nunc tibi amplectimur genua* “now we shall seize your knees”; Plautus, *Truculentus* 378 *mihi quidem atque oculis meis* “indeed for me and my eyes”; H 423 *oí d’ énteon alléloisin* “and they met one another”; H 101 *tōde d’ egōn autōs thōrēksomai* “and for this one I will arm myself”; A 4 *autoús dè elōria teukhe kúnessin* “and he gave them to the dogs as prey”; E 249f. *mēdé moi outōs thune* “do not rage so to me”; B 142 *toīsi dè thumòn enī stēthessin órīne* “and he stirred the soul in their chests”; Ps 595 *daímosin eínai alitrós* “to be a sinner to the gods”; RV 4, 12, 3 *dádhāti rátnaṃ vidhaté...mártýāya* “he distributed wealth to the devoted mortal”; RV 1, 15, 12 *devān devayaté yaja* “sacrifice to the gods for the worshipper of gods”; RV 2, 2, 8 *átithis cārur āyāve* “a dear guest for the son of Āyu”.

b) *Dativus finalis*: Plautus, *Poenulus* 626 *ut quaestui habeant male loqui melioribus* “that they have it as a gain, that they speak badly of their betters”; H 285 *khármē prokaléssato* “he called out to battle”; RV 1, 30, 6 *ūrdhvás tiṣṭhā na ūtāye* “be there upright to support us”.

ABLATIVE

The Ablative expresses the place of origin of the verbal action. Accordingly, the ablative is principally featured when a *locatum* moves, or is moved, away from a *relatum*. To this

central meaning may be traced the ablative functions relating to origin, which refers to a spatial idea, relating to separation, which is accompanied by a movement away, relating to comparisons, in which the ablative is used to indicate the object in relation to which a compared object differs. In Greek, the ablative was subsumed within the genitive.

Examples:

a) Ablative of place of origin: Cato, *De agricultura* 5 *primus cubitu surgat* “he gets up out of bed first”; Plautus, *Trinummus* 805 *cunctos exturba aedibus* “drive all from the house”; O 655 *neōn mēn ekhōrēsan* “they retreated from the ships”; E 456 *ouk án dē tónđ’ ándra mákhēs erúsaio* “could you not push this man from the fight?; RV 7, 18, 10 *īyúr gávō ná yávasād ágopāḥ* “they went like cows from the field without a herdsman”; RV 7, 5, 6 *tvám dásyūmr ókasa agna ājaḥ* “you, oh Agni, drive the Dasyus from their homeland”.

b) *Ablativus originis*: Plautus, *Captivi* 277 *quo de genere natust* “from which family he originates”; RV 1, 123, 9 *śukrá kṛṣṇād ajanīṣṭa* “the shining one was born from the darkness”; RV 10, 72, 3, *ásataḥ sád ajāyata* “from the non-being came the being forth”.

c) *Ablativus separativus*: z 192 *out’ oún esthētos deuēseai* “and you will not lack in clothing”; S 126 *mēdē m’ éruke mákhēs* “do not hold me back from battle”.

d) *Ablativus comparationis*: Plautus, *Poenulus* 812 *levior pluma est gratia* “thanks is lighter than a feather”; D 400 *eío khérēa mákhē* “worse than he in battle”; S 109 *polú glukíōn mélitos* “much sweeter than honey”; RV 1, 114, 6 *svādóḥ svādīyo* “sweeter than sweets”; RV 10, 176, 4 *sáhasas cid sáhīyān* “stronger even than the strong”.

GENITIVE

In its partitive root meaning the Genitive expresses that a part is meant of the noun in the genitive case. Originally, the genitive relates only to the contents of the lexeme, a noun featuring the genitive ending. Various functions have developed from this root meaning, including indications of composition, possession and relation. According to G. Serbat (1986), “(...) the sense is asserted of a certain, limited quantity, which is of a smaller scale than the term indicated by the stem. ... In other words, the ending only affects the word stem. At the same time, the ending plays no syntactical role (...) As a result, this partitive form may not be classified among the syntactically significant

characteristics, but rather among the forms that have no syntactical value, the quantitative forms... singular, dual, and plural". The genitive may often replace other cases without expressing their meaning; it lends an additional partitive meaning to the meaning that the expected case would have brought. According to Scherer, three realms of use may be distinguished for the genitive, namely: the indication of possession, quality, and relation. The genitive is also used in comparisons to indicate that with which something is compared.

Examples:

a) Partitive: Plautus, *Casina* 538 *modius...salis* "a scoop of salt"; I 102 *lōtoïo phagōn* "eating of lotus"; Th 470 *ēous* "in the morning".

b) *Genitivus qualitatis*: Cato, *De agricultura* 121 *lauri folia* "leaves of the laurel"; ph 7 *kōpē d' élēphantos epēen* "a handle of ivory was on it".

c) *Genitivus possessivus*: Plautus, *Mostellaria* 980 *patris amicus* "the father's friend"; Sophocles, *Aias mastigophoros* 172 *Diós Ártemis* "Artemis (daughter) of Zeus" Ph 109 *patrós d'eím' ágathoïo* "and I am (the son) of a noble father".

d) *Genitivus relationis*: Terence, *Phormio* 954 *monstri ... simile* "similar to a miracle"; Ps 485 *ē tripodos peridōmethon ēē lēbētos* "both of us are betting a tripod and a basin"; A 512 *ēpsato gōúnōn* "she touched the knee".

LOCATIVE

By expressing that the verbal action takes place in spatial relation to the object that is indicated by the referent, the locative serves primarily to situate the verbal action spatially, and secondarily to situate the verbal action temporally. The extent to which the idea of space is expressed is also dependent upon the lexical meaning of the noun. If the noun indicates something that has spatial extent – which may include concrete as well as abstract nouns –, the spatial idea may thus be quite evident. However, when the noun indicates, e.g. a unit of time, the use of the locative only reveals the original spatial metaphor that underlies the concept of a temporal relation, at the same time without requiring that the metaphor predominates. In addition, the spatial idea may be carried over to the most various circumstances. Thus, the realm of use of the locative includes local, temporal, and modal expressions. The local meaning of the locative is not limited

to a certain part of the object, but rather may just as well pertain to its interior, exterior, or environment. This is sometimes dependent on the object that is designated and its form. Depending in turn on the nature of the verbal action, the locative may have the function of indicating the goal of a movement that is coming to completion. In Latin, the locative was subsumed within the ablative. There exist only miscellaneous inherited locative forms, such as *domi* “at home” and *ruri* “in the countryside”. In Greek, the locative was subsumed in the dative.

Examples:

a) Locative of place: Plautus, *Amphitruo* 568 *homo idem duobus locis ut simul sit* “that the same man should be in two places at the same time”; D 166 *aithéri naíōn* “living in the heavens”; d 844 *ésti dé tis nēsos méssē alí* “there is an island in the middle of the sea”; N 179 *óreos koruphē* “on the peak of the mountain”; G 10 *eút’ óreos koruphēsi Nótos katékheuen omíkhlēn* “as when the sough wind pours fog down from the mountain top”; RV 7, 68, 7 *mádhye ... samudré* “in the middle of the sea”; RV 9, 18, 4 *á yó víśvāni vāryā vāsūni hástayor dadhé* “who holds all treasures that one could desire to have in his own hands”; RV 1, 32, 2 *áhann áhim párvate śísriyāṇám* “he smote the dragon that had occupied the mountain”; RV 5, 36, 2 *párvatasya prṣṭhé* “on the back of the mountain”; RV 3, 23, 4 *sárasvatyāṃ revád agne didīhi* “shine beautifully on the Sarasvati oh Agni”; RV 7, 18, 18 *tásmin ní jahi vājram* “Strike him with the cudgel!”.

b) *Locativus temporalis*: Plautus *Amphitruo* 568 *tempore uno* “at one time”; B 468 *órē* “in the spring”; G 189 *émati tō* “on this day”; RV 3, 4, 2 *yám devāsas trír áhann āyájante* “whom the gods summon three times a day”.

c) *Locativus conditionis*: RV 3, 56, 8 *vidáthe santu devāḥ* “the gods should be present at the sacrifice”; RV 6, 52, 17 *víśve devā havísi mādayadhvam* “all of you gods amuse yourselves at the pouring of libations”.

LOCAL CASES AND LOCAL PARTICLES; CASE, ADVERB AND ADPOSITION

1. The Proto-Indo-European cases with local meaning are the locative, accusative, and the ablative. These cases designate a general spatial relationship between two objects, which include places (which are concrete objects) and actions (in which concrete persons or objects participate). The locative simply organizes spatially. With the accusative and

the ablative, the concept of direction enters into play, with each indicating an opposing direction: The accusative indicates that the verbal action is oriented toward the object referent; the ablative indicates that the verbal action is oriented away from the object referent. These local dimensions then serve – in a process of transfer that is itself the result of cognitive reflection – equally to describe temporal relations and other circumstances. Because in the case of local cases the spatial relation of intransitive verbs exists between the *locatum* (indicated by the nominative subject) and the *relatum*, while in the case of transitive verbs it exists between the *locatum* (indicated by the accusative object) and the *relatum*, one may also observe, in comparing such a means of designating spatial relations with the designation of subject and object in ergative languages, an ergative trait (Lehmann, 1983).

2. Adpositions, like adverbs, modify their referents semantically; indeed, while the adposition features the characteristic of government, the adverb does not: While the adposition is distinguished by the additional characteristic of government, this syntactical connection to the referent is missing in the case of the adverb, which is why the semantic connection through modification comes to the fore.

The adverbs in IE languages that correspond to adpositions are positioned following their referents (Benfey 1880).

9.2.2.2. NUMBER

The dimension ‘number’ in Proto-Indo-European includes three categories: singular, dual, and plural. Number is a verbal as well as a nominal dimension: Thus, the finite verb of the predicate corresponds in number with the nominative form of the subject.

In the case of the noun, the singular indicates that a single unit of that which is indicated by the nominal lexeme is concerned, whereby the nominal lexeme may either indicate a single unit from a group (singulative), or a collectivity (collective). The dual number indicates duality, and the plural, plurality. The Late Proto-Indo-European nominal category ‘dual’ may be traced to an Early Proto-Indo-European lexical category which could be found in terms for body parts that exist in pairs. R. Lühr (2000) tries to explain the connection of dual forms with singular or plural forms (incongruence) by citing the difference among individual word categories in referentiality, which is greatest in the case of substantives and smallest in the case of verbs.

9.2.2.3. GENDER

Proto-Indo-European includes three categories within the dimension 'gender': masculine, feminine, and neuter. However, since the gender of the substantive need not correspond to the sex of that which it indicates, this terminology, taken from the grammarians of antiquity, does not adequately describe the contents of the categories. Masculine substantives need not refer to masculine subjects, just as feminine substantives need not refer to feminine subjects.

i. While internal reconstruction enables one to trace the three gender system (masculine/feminine/neuter) back to a two gender system (common/neuter), the attribution in terms of meaning is not clear at this early stage. Various underlying principles of distribution are conceivable: animate vs. inanimate, agent vs. non-agent, with subject marking vs. without subject marking. The breadth of the spectrum from lexical to grammatical content becomes clear.

NOTE. The classification of an earlier PIE language phase that is internally reconstructed as an ergative language or an active language is linked with the question of gender in connection with, as the case may be, the existing (masculine/feminine), or missing (neuter) characteristics of the nominative.

9.3. SENTENCE MODIFIERS

9.3.1. INTONATION PATTERNS

The sentence was characterized in PIE by patterns of Order and by Selection.

A. Selection classes were determined in part by inflection, in part by lexical categories, most of which were covert.

NOTE. Some lexical categories were characterized at least in part by formal features, such as abstract nouns marked by *-ti-*, nouns in the religious sphere marked by *-u-* and collectives marked by **-h*.

B. In addition to characterization by means of order and categories of selection, the sentence was also delimited by Intonation based on variations in pitch.

To the extent that the pitch phonemes of PIE have been determined, a high pitch may be posited, which could stand on one syllable per word, and a low pitch, which was not so restricted.

NOTE. The location of the high pitch is determined by Lehmann primarily from the evidence in Vedic; the theory that this was inherited from PIE received important corroboration from Karl Verner's demonstration of its maintenance into Germanic (1875). Thus the often cited correlation between the position of the accent in the Vedic perfect and the differing consonants in Germanic provided decisive evidence for reconstruction of the PIE pitch accent as well as for Verner's law, as in the perfect (preterite) forms of the root **deik-**, *show*.

	<i>PIE</i>	<i>Vedic</i>	<i>O.E.</i>	<i>O.H.G.</i>
<i>1 sg.</i>	dedóika	<i>didéśa</i>	<i>tāh</i>	<i>zēh</i>
<i>1 pl.</i>	dedikmé	<i>didišimá</i>	<i>tigon</i>	<i>zigum</i>

Words were characterized on one syllable by a high pitch accent, unless they were enclitic, that is, unmarked for accent.

Accented words could lose their high pitch accent if they were placed at specific positions in sentences.

A. Vocatives lost their accent if they were medial in a sentence or clause; and finite verbs lost their accent unless they stood initially in an independent clause or in any position in a dependent clause in Vedic. These same rules may be assumed for PIE. On the basis of the two characteristic patterns of loss of accent for verbs, characteristic patterns of intonation may also be posited for the IE sentence.

Judging on the basis of loss of high pitch accent of verbs in them, independent clauses were characterized by final dropping in pitch. For in unmarked order the verb stands finally in the clause.

Clauses, however, which are marked either to convey emphasis or to indicate subordination, do not undergo such lowering. They may be distinguished with final

NOTE. The intonation pattern indicated by apparently conveyed the notion of an emotional or emphatic utterance or one requiring supplementation, as by another clause. These conclusions are supported by the patterns found in Germanic alliterative verse. For, as is well known, verbs were frequently placed by poets in the fourth, nonalliterating, metrically prominent position in the line: *þeodcyninga þrym gefūnon*, *of-people's-kings glory we-heard-of*, 'We heard of the glory of the

kings of the people’. This placing of verbs, retained by metrical convention in Germanic verse, presumably maintains evidence for the IE intonation pattern. For, by contrast, verbs could alliterate when they stood initially in clauses or in subordinate clauses; *egsode eorlas, syððan ærest wearð, he-terrified men since first he-was, ‘He terrified men from the time he first was [found]’*. *þenden wordum wēold wine Scyldinga, as-long-as with-words he-ruled the-friend of-the-Scyldings*. The patterns of alliteration in the oldest Germanic verse accordingly support the conclusions that have been derived from Vedic accentuation regarding the intonation of the Indo-European sentence, as do patterns in other dialects.

Among such patterns is the preference for enclitics in second position in the sentence (Wackernagel 1892). Words found in this position are particles, pronouns, and verbs, which have no accent in Vedic texts. This observation of Wackernagel supports the conclusion that the intonation of the sentence was characterized by initial high pitch, with the voice trailing off at the end. For the enclitic elements were not placed initially, but rather they occupied positions in which unaccented portions of words were expected, as in Skr. *prāvepā mā bṛható mādayanti*, ‘*The dangling ones of the lofty tree gladden me*’. The pronoun *mā* ‘*me*’, like other such enclitics, makes up a phrase with the initial word; in this way it is comparable to unaccented syllables of individual words, as in Skr. *pravātejā īriṇe vārvṛtānāḥ*, ‘*[born] in a windy place, rolling on the dice-board*’

A simple sentence then consisted not only of a unit accompanied by an intonation pattern, but also of subunits or phrases. These were identified by their accent and also by patterns of permitted finals.

9.3.2. SENTENCE DELIMITING PARTICLES

The particles concerned are PIE **nu**, **so**, **to**, all of them introductory particles.

NOTE. Their homonymy with the adverb **nu**, **nun** and the anaphoric pronoun was one of the reasons earlier Indo-Europeanists failed to recognize them and their function. Yet Delbrück had already noted the clause-introducing function of Skr. *sa* (1888), as in Skr. *tāsya tāni śīrṣāṇi prā cicheda. sā yāt somapānam āsa tātaḥ kapīñjalaḥ sām abhavat*, ‘*He struck off his heads. From the one that drank soma, the hazel-hen was created*’. Delbrück identified *sa* in this and other sentences as a particle and not a pronoun, for it did not agree in gender with a noun in the sentence. But it remained for Hittite to clarify the situation.

In Hittite texts the introductory use of the particles is unmistakable (J.Friedrich 1960); *ta* and *šu* occur primarily in the early texts, *nu* in the later, as illustrated in the following Old Hittite example (Otten and Souček 1969): *GAD-an pešiemi šu- uš LÚ-aš natta aušzi* ‘*I throw a cloth over it and no one will see them*’.

Besides such an introductory function (here as often elsewhere translated ‘and’), these particles were used as first element in a chain of enclitics, as in *n-at-ši* ‘and it to-him’, *nu-mu-za-kan* ‘and to-me self within’ and so on.

NOTE 1. In Homeric Greek such strings of particles follow different orders, but reflect the IE construction, as in: *oudé nu soí per entrépetai phílon êtor, Olúmpie*, ‘But your heart doesn’t notice, Zeus’. As the translation of *per* here indicates, some particles were used to indicate the relationships between clauses marking the simple sentence.

NOTE 2. Many simple sentences in PIE would then be similar to those in Hittite and Vedic Sanskrit, such as those in the charming story taken by Delbrück from the Śatapathabrāhmaṇa. Among the simplest is Skr. *tám índro didveṣa*, ‘Indra hated him’. Presumably *tam* is a conflated form of the particle *ta* and the enclitic accusative singular pronoun; the combination is attested in Hittite as *ta-an* (J. Friedrich 1960). Besides the use of sentence-delimiting particles, these examples illustrate the simplicity of PIE sentences. Of the fifteen sentences in the story, only two have more than one nominal form per verb, and these are adverbial as observed above. Similar examples from the other early dialects could be cited, such as the Italic inscription of Praeneste, or the Germanic Gallehus inscription: *Ek HlewagastiR HoltijaR horna tawido*, ‘I, Hlewagastir of Holt, made the horn’. In these late texts, the subject was mandatory, and accordingly two nominal forms had come to be standard for the sentence. If however the subject is not taken into consideration, many sentences contained only one nominal element with verbs, in the early dialects as well as in PIE.

9.4. VERBAL MODIFIERS

9.4.1. DECLARATIVE SENTENCES

The Injunctive has long been identified as a form unmarked for mood and marked only for stem and person. It may thus be compared with the simplest form of OV languages.

By contrast the Present indicative indicates “mood”. We associate this additional feature with the suffix *-i*, and assume for it declarative meaning.

NOTE 1. Yet it is also clear that, by the time of Vedic Sanskrit and, we assume, Late PIE, the injunctive no longer contrasted directly with the present indicative. We must therefore conclude that the declarative qualifier was expressed by other means in the sentence. We assume that the means of expression was an intonation pattern. For, in normal unmarked simple sentences, finite unaccented verbs stood finally in their clause, as did the predicative elements of nominal sentences; Delbrück’s repeatedly used example may be cited once again to illustrate the typical pattern: *vísaḥ kṣatríyāya balīm haranti*, ‘The villagers pay tribute to the prince’. Since the verb

haranti was unaccented, i.e., had no high pitch, we may posit for the normal sentence an intonation pattern in which the final elements in the sentence were accompanied by low pitch.

NOTE 2. Lehmann supports this assumption by noting that a distinctive suprasegmental was used in Vedic to distinguish a contrasting feature, *interrogation* or *request* (Wackernagel 1896). This marker, called *pluti* by native grammarians, consisted of extra length, as in *ágnāzi* ‘O fire’ (3 indicates extra length). But a more direct contrast with the intonation of simple sentences may be exemplified by the accentuation of subordinate clauses. These have accented verbs, as in the following line from the Rigveda: *antás ca prágā áditir bhavāsi*, ‘If you have entered inside, you will be Aditi’. As the pitch accent on *ágā* indicates, verbs in subordinate clauses maintained high pitch, in contrast with verbs of independent clauses like *bhavāsi*. We may conclude that this high pitch was an element in an intonation pattern which indicated incompleteness, somewhat like the pattern of contemporary English.

Evidence from other dialects supports the conclusion that, in late PIE, Declarative sentences were indicated by means of an intonation pattern with a drop in accentuation at the end of the clause.

NOTE. In Germanic verse, verbs of unmarked declarative sentences tend to occupy unaccented positions in the line, notably the final position (Lehmann 1956). Although the surface expression of accentuation patterns in Germanic is stress, rather than the pitch of Vedic and PIE, the coincidence of accentuation pattern supports our conclusions concerning PIE intonation.

9.4.2. INTERROGATIVE SENTENCES

The Interrogation was apparently also indicated by means of Intonation, for some questions in our early texts have no surface segmental indication distinguishing them from statements, for example, Plautus *Aulularia* 213, *aetatem meam scis*, ‘Do you know my age?’

NOTE. Only the context indicates to us that this utterance was a question; we may assume that the spoken form included means of expressing Int., and in view of expressions in the later dialects we can only conclude that these means were an intonation pattern.

Questions are generally classified into two groups:

- A. Those framed to obtain clarification (*Verdeutlichungsfragen*), and
- B. Those framed to obtain confirmation (*Bestätigungsfragen*). This feature accompanies statements in which a speaker sets out to elicit information from the hearer.

NOTE. It may be indicated by an intonation pattern, as noted above, or by an affix or a particle, or by characteristic patterns of order, as in German *Ist er da?* ‘*Is he here?*’ When the Interrogative sentence is so expressed, the surface marker commonly occupies second position among the question elements, if the entire clause is questioned. Such means of expression for Int. are found in IE languages, as Lat. *-ne*, which, according to Minton Warren “occurs about 1100 times in Plautus and over 40 times in Terence” (1881). Besides expressions like Lat. *egone* ‘*Me?*’, sentences like the following occur (Plautus *Asinaria* 884): *Aúdin quid ait? Artemona: Aúdio.* ‘*Did you hear what he is saying? Artemona: yes*’

Other evidence for a postponed particle for expressing Int. is found in Avestan, in which *-na* is suffixed to some interrogatives, as in Av. *kas-nā* ‘*who (then)?*’; and in Germanic, where *na* is found finally in some questions in Old High German. Old Church Slavic is more consistent in the use of such a particle than are these dialects, as in *chošteši li* ‘*Do you wish to?*’ This particle is also used in contemporary Russian.

The particle used to express Interrogation in Latin, Avestan, and Germanic is homophonous with the particle for expressing negation, PIE **ne**.

NOTE. It is not unlikely that PIE *ne* of questions is the same particle as that used for the negative. As the interrogative particle, however, it has been lost in most dialects. After Lehmann (1974), its loss is one of the indications that late PIE was not a consistent OV language. After Mendoza, the fact that such Interrogatives of a yes/no-answer are introduced by different particles in the oldest attested dialects means that no single particle was generalized by Late PIE; cf. Goth. *u*, Lat. *-ne*, *nonne*, *num* Gk. *ἤ, vò*, Skr. *nu*, Sla. *li*. However, the common findings of Hittite, Indo-Iranian, Germanic and Latin are similar if not the same. In any case, for most linguists, rather than a postposed particle, 1) Intonation was used to express the Interrogatives, as well as 2) Particles that were placed early in clauses, often initially.

The partial Interrogative sentences are those which expect an aclaratory answer; they are introduced in PIE by pronominal or adverbial forms derived from interrogative **qi-**/**qo-**, always placed initially but for marked sentences, where a change in position is admitted to emphasize it.

NOTE. In some languages, Interrogatives may be strengthened by the addition of posposed particles with interrogative sense, as in Av. *kaš-na*. Such forms introduce indirect interrogatives when they ask about a part of the sentence. Indirect interrogatives in the form of Total interrogatives (i.e., not of yes/no-answer) are introduced by particles derived from direct interrogative particles (when there are) or by conditional conjunctions; as Hitt. *man*.

9.4.3. NEGATIVE SENTENCES

Indications of Negation, by which the speaker negates the verbal means of expression, commonly occupies third position in the hierarchy of sentence elements.

We can only posit the particles **ne** and **mē**, neither of which is normally postposed after verbs.

NOTE 1. For prohibitive particle **mē**, compare Gk. μή, O.Ind.,Av.,O.Pers. *mā*, Toch. *mar/mā*, Arm. *mi*, Alb. *mos*. In other IE dialects it was substituted by **nē**, cf. Goth. *ne*, Lat. *nē* (also as modal negation), Ira. *ni*. It is not clear whether Hitt. *lē* is ultimately derived from **mē** or **nē**. PIE **ne** is found as Goth.,O.H.G. *ni*, Lat. *nē-* (e.g. in *nequis*) O.Ind. *nā*, O.Sla. *ne*, etc. Sometimes it is found in lengthened or strengthened forms as Hitt. *natta*, Lat. *non*, Skr. *ned*, etc. A common PIE lengthened form is **nei**, which appears in Lat. *ni*, Lith. *neĩ*, Sla. *ni*, etc., and which may also ultimately be related to Proto-Uralic negative **ei-* (Kortlandt, v.s.).

NOTE 2. In the oldest languages, negation seems to have been preverbal; Vedic *nákis*, Gk. *oú tis*, *mē tis*, Lat. *nēmo*, OHG *nioman* ‘no one’, and so on. The negative element **ne** was not used in compounding in PIE (Brugmann 1904); **ṇ-** had this function. Moreover, there is evidence for proposing that other particles were placed postverbally in PIE (Delbrück 1897). Delbrück has classified these in a special group, which he labels *particles*. They have been maintained postpositively primarily in frozen expressions: *ē* in Gk. *egō’ nē*, *ge* in *égōge ‘T* (Schwyzer 1939). But they are also frequent in Vedic and early Greek; Delbrück (1897) discusses at length the use of Skt. *gha*, Gk. *ge*, and Skt. *sma*, Gk. *mén*, after pronouns, nouns, particles, and verbs, cf. Lat. *nōlo < ne volo*, Goth. *nist < ni ist*, and also, negative forms of the indefinite pronoun as O.Ind. *mā-kis*, *ná-kis*, Lat. *ne-quis*, etc. which may indicate an old initial absolute position, which could be also supported by the development of correlative forms like Lat. *neque*, etc., which combine negation and coordination. Lehmann, on the contrary, believes in an older postposed order, characteristic of OV languages (i.e. a situation in IE II), because of the usually attributed value of emphasis to the initial position of negation, postverbal negation examples (even absolute final position in Hittite and Greek), the old existence of the form **nei**, as well as innovative forms like Lat. *ne-quis* or Gk. *oú-tis*.

NOTE 3. In Modern Indo-European, thus, negation should usually be preverbal, as in modern Romance languages (cf. Fr. *n’est*, Spa. *no es*, etc.), but it can be postponed in emphatic contexts, as it is usual in modern Germanic languages (cf. Eng. *is not*, Ger. *ist nicht*, etc.), as well as in very formal texts, thus imitating some of the most archaic findings of early PIE dialects.

9.5. NOMINAL MODIFIERS

9.5.1. ADJECTIVE AND GENITIVE CONSTRUCTIONS

1. Proto-Indo-European Attributive Adjectives were normally preposed.

NOTE. Delbrück summarizes the findings for Vedic, Greek, Latin, Lithuanian, and Germanic, giving examples like the following from Vedic: *śvetāḥ párvatāḥ*, ‘white mountains’ (1900). Lehmann (1974) adds an example of Hitt. *šuppi watar*, ‘pure water’.

In marked constructions Adjectives might be postposed, as in *ásvaḥ śvetāḥ*, ‘a white horse, a gray’.

2. The position of the Attributive Genitive is the same as that of the Attributive Adjective.

NOTE. A striking example is given from the Old English legal language (Delbrück 1900): *ōðres mannes hūses dura*, ‘the door of the house of the other man’.

Like the adjective construction, the attributive-genitive construction may have the modifier postposed for marked effect, as is *sómasya* in SB 3.9.4.15 (Delbrück 1878): *kíṃ nas tátāḥ syād íti? prathamabhakṣsá evá sómasyarā jñā íti*, ‘What might then happen for us? The first enjoyment of [Prince] Soma’.

NOTE 1. The relatively frequent marked use of the genitive may be the cause for the apparently free position of the genitive in Greek and Latin. The ambivalent order may also have resulted from the change of these languages toward a VO order. But, as Delbrück indicates, the preposed order is well attested in the majority of dialects. This order is also characteristic of Hittite (J. Friedrich 1960). We may therefore assume it for PIE.

NOTE 2. In accordance with Lehmann’s views on syntactic structure, the attributive genitive, like the attributive adjective, must be derived from an embedded sentence. The sentence would have a noun phrase equivalent with that in the matrix sentence and would be a predicate nominal sentence. Such independent sentences are attested in the older dialects. Delbrück gives a number of examples, among them: *aṣṭaú ha vai putrá ádites*, ‘Aditi had eight sons’. *áhar devánām áśīt*, ‘Day belonged to the gods’. These sentences accordingly illustrate that the genitive was used in predicate nominative sentences to convey what Calvert Watkins has labeled its primary syntactic function: the sense “of belonging”. When such a sentence was embedded in another with an equivalent NP, the NP was deleted, and the typical genitive construction resulted. Hittite also uses

s as a genitive as well as a nominative marker. For “genitives” like *haššannaššaš* ‘(one) of his race’ can be further inflected, as in the accusative *haššannaš-šan* ‘(to one) of his race’ (J. Friedrich).

9.5.2. COMPOUNDS

1. In the derivation of compounds special compounding rules apply.

The verbal compounds in a language observe the basic order patterns, For PIE we would expect an older OV order in compounds, as e.g. Skt. *agnídh-* ‘priest’ < *agni* ‘fire’ + *idh* ‘kindle.’

NOTE. A direct relationship between compounds and basic syntactic patterns is found only when the compounds are primary and productive. After a specific type of compound becomes established in a language, further compounds may be constructed on the basis of analogy, for example Gk. *hippagros* ‘wild horse’, in contrast with the standard productive Greek compounds in which the adjectival element precedes the modified, as in *agriókhoiros* ‘wild swine’ (Risch 1944-1949). Here we will consider the primary and productive kinds of compounds in PIE.

2. Two large classes and other minor types are found:

A. the Synthetics (noun+noun), which make up the majority of the PIE compounds,

a. Pure Synthetics, i.e. noun+noun.

b. Synthetics in which the first element is adverbial, i.e. adverb+noun.

B. The Bahuvrihis.

C. Adjective + Nouns, apparently not so productive in PIE as in its dialects.

D. A small number of additive compounds.

SYNTHETICS

Synthetics consist of a nominal element preceding a verbal, in their unmarked forms, as in Skt. *agnídh-*, ‘priest’. As in this compound, the relation of the nominal element to the verbal is that of *target*.

The particular relationship of nominal and verbal elements was determined by the lexical properties of the verb; accordingly, the primary relationship for most PIE verbs was that of *target*. But other nominal categories could also be used with verbs.

3. Kinds of Relationships:

1) The *Receptor* relationship, as Skr. *devahédana*, ‘angering the gods’.

2) The *Instrument* or *Means* relationship; as Skr. *ádrijūta*, ‘*speeded by the stones*’,

The compound *ṛtajā* of this passage may illustrate the *Time* relationship.

3) The *Source* relationship, as Skr. *añhomúc*, ‘*freeing from trouble*’.

4) The *Place* relationship, as Skr. *druśád*, ‘*sitting in a tree*’.

5) The *Manner* relationship; as, Skr. *īśānakṛt*, ‘*acting like a ruler*’.

These compounds exhibit the various relationships of nominal constituents with verbal elements, as in Skr. *tvā-datta*, ‘*given by you*’.

NOTE. Synthetics attested in the Rigveda accordingly illustrate all the nominal relationships determinable from sentences. Synthetics are frequently comparable to relative constructions, as in the following sentence: *ágnír agāmi bhárato vṛtrahá purucétaṇaḥ*, ‘*Agni, the god of the Bharatas, was approached, he who killed Vṛtra, who is seen by many*’.

Besides the large number of synthetics of the NV pattern, others are attested with the pattern VN. These are largely names and epithets, such as *púṣṭi-gu*, a name meaning ‘*one who raises cattle*’ (RV 8.51.1.), and *sanád-rayi* ‘*dispensing riches*’.

BAHUVRIHIS

The second large group of PIE compounds, *Bahuvrihis*, are derived in accordance with the sentence pattern expressing Possession. This pattern is well known from the Latin *mihi est* construction (Bennett 1914; Brugmann 1911): *nulli est homini perpetuom bonum*, ‘*No man has perpetual blessings*’.

Lehmann accounts for the derivation of bahuvrihis, like Lat. *magnanimus* ‘*great-hearted*’, by assuming that an equational sentence with a noun phrase as subject and a noun in the receptor category indicating possession is embedded with an equivalent noun, as in the following example (‘*great spirit is to man*’ = ‘*the man has great spirit*’):

On deletion of the equivalent NP (*hominī*) in the embedded sentence, a bahuvrihi compound *magnanimus* ‘*greathearted*’ is generated. This pattern of compounding ceased to be primary and productive when the dialects developed verbal patterns for expressing possession, such as Lat. *habeo* ‘*I have*’.

Bahuvrihis may be adjectival in use, or nominal, as in the vocative use of *sūnari* ‘*having good strength*’ (made up of *su* ‘*good*’ and **xner-* ‘*(magical) strength*’) in Slr. *viśvasya hí prāṇanaṃ jīvanaṃ tvé, ví yid uchási sūnari*, ‘*For the breath and life of everything is in you, when you light up the skies, you who have good strength*’. The Greek cognate may illustrate the adjectival use: *phéron d’ euēnora khalkón* ‘*They carried on board the bronze of good strength*’. The bahuvrihis are accordingly similar to synthetics in being comparable to relative clauses.

NOTE. Although the bahuvrihis were no longer primary and productive in the later dialects, their pattern remained remarkably persistent, as we may note from the various *philo-* compounds in Greek, such as *philósophos*, ‘*one who holds wisdom dear*’, *philoinos*, ‘*one who likes wine*’, and many more. Apart from the loss of the underlying syntactic pattern, the introduction of different accentual patterns removed the basis for bahuvrihis. As Risch pointed out, Greek *eupátōr* could either be a bahuvrihi ‘*having a good father*’ or a *tatpurusha* ‘*a noble father*’. In the period before the position of the accent was determined by the quantity of final syllables, the bahuvrihi would have had the accent on the prior syllable, like *rāja-putra* ‘*having kings as sons*’, RV 2.27.7, in contrast with the *tatpurusha* *rāja-putrá* ‘*king’s son*’, RV 10.40.3. The bahuvrihis in time, then, were far less frequent than *tatpurushas*, of which only a few are to be posited for late PIE. An example is Gk. *propátōr* ‘*forefather*’. If the disputed etymology of Latin *proprius* ‘*own*’ is accepted, **pro-pātrjós* ‘*from the forefathers*’, there is evidence for assuming a PIE etymon; Wackernagel (1905) derives Sanskrit compounds like *prá-pada* ‘*tip of foot*’ from PIE. Yet the small number of such compounds in the early dialects indicates that they were formed in the late stage of PIE (Risch).

NOTE 2. Dvandvas, such as *īndrāviṣ* ‘*nu*’ and a few other patterns, like the teens, were not highly productive in PIE, if they are to be assumed at all. Their lack of productiveness may reflect poorly developed coordination constructions in PIE (Lehmann 1969). Besides the expansion of *tatpurushas* and *dvandvas* in the dialects, we must note also the use of expanded root forms. Thematic forms of noun stems and derived forms of verbal roots are used, as in Skt. *deva-kṛta*, ‘*made by the gods*’. Such extended constituents become more and more prominent and eventually are characteristic elements of compounds, as the connecting vowel *-o-* in Greek and in early Germanic; Gk. *Apolló-dōros* ‘*gift of Apollo*’ (an *n-* stem) and Goth. *guma-kunds* ‘*of male sex*’ (also an *n-* stem). Yet the relationships between the constituents remain unchanged by such morphological innovations. The large number of *tatpurushas* in the dialects reflects the prominence of embedded-modifier constructions, as the earlier synthetics and bahuvrihis reflected the embedding of sentences, often to empty noun nodes. As noted above, they

accordingly have given us valuable information about PIE sentence types and their internal relationships.

9.5.3. DETERMINERS IN NOMINAL PHRASES

Nouns are generally unaccompanied by modifiers, as characteristic passages from an Archaic hymn of the Rigveda and from an Old Hittite text may indicate.

Demonstratives are infrequent; nouns which might be considered definite have no accompanying determinative marker unless they are to be stressed. The Demonstrative then precedes.

The relationship between such Demonstratives and accompanying Nouns has been assumed to be Appositional; it may be preferable to label the relationship a loose one, as of pronoun or noun plus noun, rather than adjective or article plus noun.

NOTE. In Homer too the “article” is generally an anaphoric pronoun, differing from demonstratives by its lack of deictic meaning referring to location (Munro). Nominal phrases as found in Classical Greek or in later dialects are subsequent developments; the relationship between syntactic elements related by congruence, such as adjectives, or even by case, such as genitives, can often be taken as similar to an appositional relationship (Meillet 1937).

To illustrate nominal phrases, cf. Vedic *eṣām marūtām*, “*of-them of-Maruts*”. The nominal phrase which may seem to consist of a demonstrative preceding a noun, *eṣām marūtām*, is divided by the end of the line; accordingly *eṣām* must be interpreted as pronominal rather than adjectival.

The following Hittite passage from a ritual illustrates a similar asyndetic relationship between the elements of nominal phrases (Otten and Souček 1969): *harkanzi- ma –an ^dHantašepes anduhšaš harša[(r)] –a ^{giš}ŠUKUR^{hi.a}*, But the Hantašepa-gods hold heads of men as well as lances. In this sentence the nouns for ‘heads’ and ‘lances’ supplement ‘it’. Moreover, while the meaning of the last word is uncertain, its relationship to the preceding elements is imprecise, for it is a nominative plural, not an accusative. Virtually any line of Homer might be cited to illustrate the absence of close relationships between the members of nominal phrases; cf. *Odyssey nēūs dé moi hēd’ hēstēken ep’ agrou nōsphi pōlēos, en limēni Rhēthrōi hupō Nēiōi hul ēēnti*, ‘My ship is berthed yonder in the country away from the city, in a harbor called Rheithron below Neion, which is wooded’. The nouns have no determiners even when, like *nēus*, they are definite; and the modifiers with *limēni* and *Neiōi* seem to be loosely related epithets rather than closely linked descriptive adjectives.

The conclusions about the lack of closely related nominal phrases may be supported by the status of compounds in PIE. The compounds consisting of Descriptive Adjectives + Noun are later; the most productive are reduced verbal rather than nominal constructions. And the bahuvrihis, which indicate a descriptive relationship between the first element and the second, support the conclusion that the relationship is relatively general; *rājā-putra*, for example, means ‘*having sons who are kings*’ rather than ‘*having royal sons*’; *gó-vapus* means ‘*having a shape like a cow*’, said of rainclouds, for which the epithet denotes the fructifying quality rather than the physical shape.

Accordingly, closely related nominal expressions are to be assumed only for the dialects, not for PIE. Definiteness was not indicated for nouns. The primary relationship between nominal elements, whether nouns or adjectives, was appositional.

The syntactic patterns assumed for late PIE may be illustrated by narrative passages from the early dialects. The following passage tells of King Hariśchandra, who has been childless but has a son after promising Varuna that he will sacrifice any son to him. After the birth of the son, however, the king asks Varuna to put off the time of the sacrifice, until finally the son escapes to the forest; a few lines suffice to illustrate the simple syntactic patterns.

AB	athainam	uvāca	varuṇam	rājānam	upadhāva	putro
7.14.	then-him	he-told	Varuna	king	you-go-to	son
	Acc. sg.	Perf. 3 sg.	Acc. sg.	Acc. sg.	Imper. 2 sg.	Nom. sg.
	me	jāyatām	tena	tvā	yajā	
	to-me	let-him-be-born	with-	you	I-worship	
		Imper. 3 sg.	Inst. sg.	Acc. sg.	Mid. Pres.	
	iti.	tatheti.	sa	varuṇam		
	end-quotation	indeed-end	‘he’	Varuna		
		(<tathā iti)	3 sg. Nom.			
	rājānam	upasāra	putro	me	jāyatām	tena
	king	went-to	son	to-me	let-him-be-born	with-him
		Perf. 3 sg.				
	tvā	yajā	iti.	tatheti.		
	you	I-worship	end-quotation	indeed-end-quotation		
	tasva	ha	putro	iaiñe	rohito	nāma

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his, of-him	now	son	he-was-born	Rohita	name
Gen. sg. m.	Ptc.		Mid. Perf. 3 sg.		
taṁ	hovācājani		te	vai	putro
him	Ptc.-he-told-he-was born		to-you	indeed	son
Acc. sg.	Aor. Pass. 3 sg. Ptc.			Ptc.	
yajasva	māneneti.		sa		
you-worship	me-with-him-end-quotation		'he'		
Mid. Imper. 2 sg.	Acc. sg.-Inst. sg.				
hovāca	yadā	vai	paśur	nirdaśo	
Ptc.-he-told	when	indeed	animal	above-ten	
	Conj.	Ptc.	Nom. sg. m.	Nom. sg. m.	
bhavatyatha	sa	medhyo	bhavati.	nirdaśo	
he-becomes-then	he	strong	he-becomes	above-ten	
Pres. 3 sg.-Ptc.		Nom. sg. m.			
'nvastvatha	tvā	yajā	iti.		
Ptc.-let-him-be-then	you	I-worship	end-quotation		
Imper. 2 sg.	Acc. sg.				
tatheti.	sa	ha	nirdaśa	āsa	
indeed-end-quotation	he	now	above-ten	he-was	
				Perf. 3 sg.	

Then he [the Rishi Narada] told him [Hariśchandra]: “Go to King Varuna. [Tell him]: ‘Let a son be born to me. With him I will worship you [= I will sacrifice him to you] .’”

“Fine,” [he said].

He went to King Varuna [saying]: “Let a son be born to me. I will sacrifice him to you.”

“Fine,” [he said]

Now his son was born. Rohita [was his] name.

[Varuna] spoke to him. “A son has indeed been born to you. Sacrifice him to me.”

He said thereupon: “When an animal gets to be ten [days old], then he becomes strong [= fit for sacrifice]. Let him be ten days old; then I will worship you.”

“Fine,” he said.

He now became ten.

As this passage illustrates, nouns have few modifiers. Even the sequence: *tasya ha putro*, which might be interpreted as a nominal phrase corresponding to ‘his son’, consists of distinct components, and these should be taken as meaning: “*Of him a son [was born]*”. As in the poetic passage cited above, nouns and pronouns are individual items in the sentence and when accompanied by modifiers have only a loose relationship with them, as to epithets.

9.5.4. APPPOSITION

Apposition is traditionally “when paratactically joined forms are grammatically, but not in meaning, equivalent”.

NOTE. Because of the relationship between nouns and modifiers, and also because subjects of verbs were only explicit expressions for the subjective elements in verb forms, Meillet (1937) considered apposition a basic characteristic of Indo-European syntax. As in the previous passage, subjects were included only when a specific meaning was to be expressed, such as *putra* ‘son’. The element *sa* may still be taken as an introductory particle, a sentence connective, much as *iti* of *tathā iti*, etc., is a sentence-final particle. And the only contiguous nouns in the same case, *varunam rājānam*, are clearly appositional.

A distinction is made between *Appositional* and *Attributive* (Delbrück); an appositional relationship between two or more words is not indicated by any formal expression, whereas an attributive relationship generally is.

NOTE. Thus the relationships in the following line of the *Odyssey* are attributive: *arnúmenos hén te psukhén kai nóston hetaíron*, lit. “*striving-for his Ptc. life and return of-companions*”. The relationship between *hén* and *psukhén* is indicated by the concordance in endings; that between *nóston* and *hetaíron* by the genitive. On the other hand the relationship between the two vocatives in the following line is appositional, because there is no mark indicating the relationship: *tôn hamóthen ge, theá, thúgater Diós, eipè kai Ēmi n*, ‘*Tell us of these things, beginning at any point you like, goddess, daughter of Zeus*’. Both vocatives can be taken independently, as can any appositional elements.

Asyndetic constructions which are not appositive are frequently attested, as Skr. *té vo hṛdé mánase santu yajñá*, ‘*These sacrifices should be in accordance with your heart, your mind*’. Coordinate as well as appositive constructions could thus be without a specific coordinating marker.

Comparable to appositional constructions are titles, for, like appositions, the two or more nouns involved refer to one person.

NOTE. In OV languages titles are postposed in contrast with the preposing in VO languages; compare Japanese *Tanaka-san* with *Mr. Middlefield*. The title ‘king’ with *Varuna* and similarly in the *Odyssey*, *Poseidāōni ánakti*, when *ánaks* is used as a title. But, as Lehmann himself admits, even in the early texts, titles often precede names, in keeping with the change toward a VO structure.

Appositions normally follow, when nouns and noun groups are contiguous, as in the frequent descriptive epithets of Homer: *Tòn d’ ēmeíbet’ épeita theá, glaukôpis Athēnē*, ‘*Him then answered the goddess, owl-eyed Athene*’.

To indicate a marked relationship, however, they may precede (Schwyzer 1950). But the early PIE position is clear from the cognates: Skt. *dyaus pitā*, Gk. *Zeú páter*, Lat. *Jūpiter*.

9.6. MODIFIED FORMS OF PIE SIMPLE SENTENCES

9.6.1. COORDINATION

While coordination is prominent in the earliest texts, it is generally implicit.

The oldest surviving texts consist largely of paratactic sentences, often with no connecting particles.

New sentences may be introduced with particles, or relationships may be indicated with pronominal elements; but these are fewer than in subsequent texts.

Similar patterns of paratactic sentences are found in Hittite, with no overt marker of coordination or of subordination. J. Friedrich states that “purpose and result” clauses are not found in Hittite (1960), but that coordinate sentences are simply arranged side by side with the particle *nu*, as in the Hittite Laws. Conditional relationships too are found in Hittite with no indication of subordination (J. Friedrich 1960).

NOTE. The subordinate relationships that are indicated, however, have elements that are related to relative particles. Accordingly the subordination found in the early dialects is a type of relative construction. As such examples and these references indicate, no characteristic patterns of order, or of verb forms, distinguish subordinate from coordinate clauses in PIE and the early dialects. Hermann therefore concluded in his celebrated article that there were no subordinate clauses in PIE (1895). For Lehmann (1974), the paratactic arrangement which he assumed for PIE, however, is characteristic of OV languages. Hypotaxis in OV languages is often expressed by nonfinite verb forms and by postposed particles.

The arrangement of sentences in sequence is a typical pattern of PIE syntax, whether for hypotactic or for paratactic relationships.

Expressions for coordination were used largely for elements within clauses and sentences. When used to link sentences, conjunctions were often accompanied by initial particles indicating the beginning of a new clause and also indicating a variety of possible relationships with neighboring clauses.

NOTE. Sentence-connecting particles are, however, infrequent in Vedic and relatively infrequent in the earliest Hittite texts; Lehmann concludes that formal markers of sentence coordination were not mandatory in PIE.

The normal coordinating particle in most of the dialects is a reflex of PIE **-qe**.

This is postposed to the second of two conjoined elements, or to both.

NOTE. Hittite *-a*, *-ja* is used similarly, as in *attaš annaš a* 'father and mother' (J. Friedrich 1960).

The disjunctive particle PIE **-wē** is also postposed.

NOTE 1. In Hittite, however, besides the postposed disjunctive particles *-ku ... -ku* 'or', there was the disjunctive particle *našma*, which stood between nouns rather than after the last. This pattern of conjunction placement came to be increasingly frequent in the dialects; it indicates that the conjunction patterns of VO structure have come to be typical already by IE II.

NOTE 2. With the change in coordinating constructions, new particles were introduced; some of these, for example, Lat. *et*, Goth. *jah*, OE *and*, have a generally accepted etymology; others, like Gk. *kaí*, are obscure in etymology. Syntactically the shift in the construction rather than the source of the particles is of primary interest, though, as noted above, the introduction of new markers for the new VO patterns provides welcome lexical evidence of a shift. The syntactic shift also brought with it patterns of coordination reduction (*Ersparung*) which have been well described for some

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dialects (Behaghel). Such constructions are notable especially in SVO languages, in which sequences with equivalent verbs (S, V, O, Conj., S₂, V₁, O₂) delete the second occurrence of the verb, as M.H.G. *daz einer einez will und ein ander ein anderz*, ‘that one one-thing wants and another an other’.

Reduction of equivalent nouns in either S or O position is also standard, as in *Beowulf*.

NOTE. But in the paratactic structures characteristic of Hittite, such reduction is often avoided. In an SVO language the second *memiās* would probably not have been explicitly stated, as in: ‘now my speech came to be halting and was uttered slowly’. The lack of such reduction, often a characteristic of OV languages, gives an impression of paratactic syntax. Another pattern seeming to be paratactic is the preposing of “subordinate clauses,” either with no mark of subordination or with a kind of relative particle, as in the concluding passage of *Muršilis Sprachlähmung* (Götze and Pedersen 1934). The second from last clause has no mark to indicate subordination; the earlier clauses contain a form of relative particle.

<i>IŠTU</i>	GIŠBANŠUR-ma-za-kán	kuizza	azikinun				
from	table-but-Refl.-Ptc.	from-which	I-was-accustomed-to-eat				
<i>IŠTU</i>	GAL-ja-kán	kuizza	akkuškinun				
from	beaker-and-Ptc.	from-which	I-was-accustomed-to-drink				
šašti-ja-za-kán	kuédani	šeškeškinun	<i>IŠTU</i>				
in-bed-and-Refl.-Ptc.	in-which	I-was-accustomed-to-sit	from				
URUDDU _{10xA} -ia-za-kán	kuizza	arreškinun					
basin-and-Refl.-Ptc.	from-which	I-was-accustomed-to-wash					
kuit-ja	imma	ÚNUTU	anda	uērijan	ešta	nu	UL
what-and	else	utensil	Adv.-Ptc.	mentioned	it-was	now	not
kuitki	dattat	<i>IŠTU</i>	DINGIR ^{LI}	QATAMMA	SIxDI-at		
any	it-was-taken	from	god	likewise	it-was-determined		

‘The god also determined that nothing more should be used of the table from which I was accustomed to eat, of the beaker from which I was accustomed to drink, of the bed in which I was accustomed to sleep, of the basin in which I was accustomed to wash, and of whatever other article was mentioned’

In an SVO language like English, the principal clause, which stands last in Hittite, would be placed first. The interpretation of the preceding clause as a result clause is taken from Götze and

Pedersen. The initial clauses contain relative particles which indicate the relationship to *kuitki* of the second-from-last clause; they also contain coordinating particles: *a*, *ia*. In this passage the clauses, whether coordinate or subordinate from our point of view, are simply arrayed in sequence. Each concludes with a finite verb which provides no evidence of hypotaxis. The sentence connectives which occur—repeated instances of *a/ia*—heighten the impression of coordination.

The absence in Hittite of verb forms – which are cognates of the Vedic and Greek optative and subjunctive – which came to be used largely to indicate subordination is highly consistent in its OV patterning, as such verb forms were not required.

Hittite however did not forego another device, which is used to indicate subordinate relationship in OV as well as VO languages, the so-called nonfinite verb forms. These are used for less explicit kinds of complementation, much the way relative constructions are used for more explicit kinds.

9.6.2. COMPLEMENTATION

Compound sentences may result from the embedding of nominal modifiers.

NOTE. In VO languages embedded nominal modifiers follow nouns, whereas in OV languages they precede nouns. This observation has led to an understanding of the Hittite and the reconstructed PIE relative constructions. If we follow the standard assumption that in relative constructions a second sentence containing an NP equivalent to an NP in the matrix sentence is embedded in that matrix sentence, we may expect that either sentence may be modified. A sentence may also be embedded with a dummy noun; the verb forms of such embedded sentences are commonly expressed with nominal forms of the verb, variously called infinitives, supines, or participles. In OV languages these, as well as relative constructions, precede the verb of the matrix sentence.

An example with participles in the IE languages is Skr. *vāsānaḥ* in the last lines of the following Strophic hymn: *rúśad vāsānaḥ sudṛśīkarūpaḥ*, “*brightly dressing-himself beautifully-hued*”.

It may also have “*a final or consequential sense*”, as in the following Strophic hymn: *tvām indra srávitavā apás kaḥ*, ‘*You, O Indra, make the waters to flow.*’ Also in the poetic texts such infinitives may follow the main verb, as in *ábodhi hótā yajáthāya devān*, lit. “*he-woke-up priest for-sacrificing gods*”, ‘*The priest has awakened to sacrifice to the gods*’.

NOTE. The postposed order may result from stylistic or poetic rearrangement; yet it is also a reflection of the shift to VO order, a shift which is reflected in the normal position for infinitives in the other IE dialects. In the Brahmanas still, infinitives normally stand directly before the verb, except in interrogative and negative sentences (Delbrück). On the basis of the Brahmanic order we may assume that in PIE nonfinite verbs used as complements to principal verbs preceded them in the sentence. Hittite provides examples of preposed complementary participles and infinitives to support this assumption (J. Friedrich). Participles were used particularly with *har(k)*- ‘have’ and *eš*- ‘be’, as in *uerijan ešta* ‘was mentioned’; the pattern is used to indicate state.

INFINITIVES

1. Infinitives could indicate result, with or without an object (J. Friedrich 1960): *1-aš 1-an kunanna lē šanhanzi*, lit. “one one to-kill not he-tries”, i.e. ‘One should not try to kill another’.

2. Infinitives could be used to express purpose, as in the following example, which pairs an infinitive with a noun (J. Friedrich): *tuk-ma kī uttar ŠÀ-ta šijanna išhiull-a ešdu*, lit. “to-you-however this word in-heart for-laying instruction-and it-should-be”, i.e. ‘But for you this word should be for taking to heart and for instruction’.

3. The Infinitive could be loosely related to its object, as in examples cited by Friedrich, such as *apāš-ma-mu harkanna šan(a)hta*, lit. “he-however-me for-deteriorating he-sought”, i.e. ‘But he sought to destroy me’.

4. The complementary infinitive indicates the purpose of the action; as Friedrich points out, it is attached to the verb *šanhta* plus its object *mu* in a construction quite different from that in subsequent dialects.

NOTE. These uses are paralleled by uses in Vedic, as may be noted in the work of Macdonell (1916), from which some examples are taken in Lehmann (1974). On the basis of such examples in Vedic and in Hittite, he assumes that infinitive constructions were used to indicate a variety of complements in PIE.

Hittite and Sanskrit also provide examples of Participles functioning appositionally or as adjectives indicating state (J. Friedrich 1960): *ammuk-ṣar-an akkantan IQ.BI*, lit. to-me-Pte.-indicating-quotation-him dying he-described, i.e. ‘He told me that one had died.’

NOTE. This pattern had been noted by Delbrück for the Rigveda, with various examples (1900:327), as *śíśihí mā śíśayám tvā śṛṇomi*, ‘*Strengthen me; I hear that you are strong.*’ The adjective *śíśayá* ‘*strengthening*’ is an adjective derived from the same root as *śíśihí*. Delbrück also noted that such “appositives” are indicated in Greek by means of clauses. Greek represents for Lehmann accordingly a further stage in the development of the IE languages to a VO order. Yet Greek still maintained preposed participles having the same subject as does the principal verb, as in: *tēn mēn idōn gēthēse*, lit. “*it Ptc. seeing he-rejoiced*”

This pattern permits the use of two verbs with only one indicating mood and person; the nonfinite verb takes these categories from the finite.

Participles were thus used in the older period for a great variety of relationships, though also without indicating some of the verbal categories.

Dependent clauses are more flexible in indicating such relationships, and more precise, especially when complementary participles and infinitives follow the principal verb.

9.6.3. SUBORDINATE CLAUSES

Indo-Europeanists have long recognized the relationship between the Subordinating Particles and the stem from which Relative Pronouns were derived in Indo-Iranian and Greek.

NOTE. Thus Delbrück has pointed out in detail how the neuter accusative form of PIE **jo-** was the basis of the conjunction **jod** in its various meanings: (1) Temporal, (2) Temporal-Causal, (3) Temporal-Conditional, (4) Purpose. He also recognized the source of conjunctive use in sentences like Skr. *yáj jáyathās tát áhar asya káme ‘ñsóḥ pīyū’ śam apibo giriṣṭhām*, ‘*On the day you were born you drank the mountain milk out of desire for the plant.*’

- 1) Relative clauses must have stood Before the Main Clause originally and
- 2) The earliest type of subordinate **jo-** clauses must have been the Preposed Relative constructions.

NOTE. This conclusion from Vedic receives striking support from Hittite, for in it we find the same syntactic relationship between relative clauses and other subordinate clauses as is found in Vedic, Greek, and other early dialects. But the marker for both types of clauses differs. In Hittite it is based on IE **qid** rather than **jod**; thus, Hittite too uses the relative particle for indicating subordination. The remarkable parallelism between the syntactic constructions, though they have different surface markers, must be ascribed to typological reasons; we assume that Hittite as well

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as Indo-Aryan and Greek was developing a lexical marker to indicate subordination. As does *yad* in Vedic, Hitt. *kuit* signals a “loose” relationship between clauses which must be appropriately interpreted.

As J. Friedrich has stated (1960), *kuit* never stands initially in its clause. Sentences in which it is used are then scarcely more specifically interconnected than are conjoined sentences with no specific relating word, as in examples cited by Friedrich (ibid.): *nu taškupāi nu URU-aš dapijanzi išdammašzi*, lit. Ptc. you-shout Ptc. city whole it-hears, ‘Now cry out [so that] the whole city hears’. Like this example, both clauses in a *kuit* construction generally are introduced with *nu* (J. Friedrich 1960). We may assume that *kuit* became a subordinating particle when such connections were omitted, as in Friedrich’s example. These examples illustrate that both *yád* and *kuit* introduce causal clauses, though they do not contain indications of the origin of this use.

It is therefore generally believed that Subordinates originated in Relative sentences, as Vedic, Old Irish, Avestan and Old Persian illustrate. Proverbs and maxims are a particularly conservative field in all languages, and even etymologically there are two series which especially often; namely, **qo-...to-**, and **jo-...to-**.

NOTE 1. For IE **qo-...to-**, cf. Lat. *cum...tum*, *qualis...talis*, *quam...tam*, or Lith. *kàs...tàs*, *kòks...tàs*, *kaîp...taîp*, *kiék...tiék*, etc., and for **jo-...to-**, Ved. *yás...sá tát*, *yáthā...táthā*, *yávat...távat*, Gk. *oios...toios*, *ósos...tósos*, O.Pers. *haya* (a compound from **so+jo**, with the same inverse compound as Lat. *tamquam*, from two correlatives), etc.

NOTE 2. For Haudry this correlative structure is the base for subordination in all Indo-European languages. Proto-Indo-European would therefore show an intermediate syntax between parataxis and hypotaxis, as the correlative structure is between a ‘loose’ syntax and a ‘locked’ one.

Lehmann assumes that the use of Skr. *yád*, Hitt. *kuit*, and other relative particles to express a causal relationship arose from subordination of clauses introduced by them to an Ablative; cf. Skr. *ácittī yát táva dhármā yuyopimá* (lit. *unknowing that, because your law, order we-have-disturbed*), *mā nas tásmād énaś deva rīriṣaḥ* (lit. *not us because-of-that because-of-sin O-god you-harm*), ‘Do not harm us, god, because of that sin [that] because unknowingly we have disturbed your law’.

As such relationships with ablatives expressing Cause were not specific, more precise particles or conjunctions came to be used. In Sanskrit the ablatival *yasmāt* specifies the meaning ‘because’.

Further, *yadā́* and *yátra* specify the meaning ‘when’. In Hittite, *mān* came to be used for temporal relationships, possibly after combined use with *kuit*; *kuitman* expressed a temporal relationship even in Late Hittite, corresponding to ‘while, until’, though *mahhan* has replaced *mān* (J. Friedrich 1960 gives further details). The conjunction *mān* itself specifies the meanings ‘if’ and ‘although’ in standard Hittite. In both Hittite and Vedic then, the “loose” relative-construction relationship between subordinate clauses and principal clauses is gradually replaced by special conjunctions for the various types of hypotactic relationship: Causal, Temporal, Conditional, Concessive.

Just as the Causal relationship developed from an Ablative modified by a Relative construction, so the Temporal and Conditional relationship developed from a clause modifying an underlying Time node.

The less differentiated and less precisely related subordinate clauses are often still evident, however, as in *yád* clauses of the Archaic hymn, Rigveda 1.167. For conciseness, only *yád* clauses will be cited here, with Hoffmann’s interpretation of each; the entire stanzas and their translations are given by Hoffmann (1967).

RV 1.167.5.	jóṣad	yád	īm	asuryā	sacádhyai
	she-desires	when	them	Asuryan	to-follow
<i>‘when the Asuryan will desire to follow them’</i>					

RV	arkó	yád	vo	maruto	haviṣmān
	song-of-praise	whenever,	for-you	Maruts	accompanied-by-libations
<i>‘if the song of praise accompanied by libations is designed for you, Maruts’</i>					

RV	sácā	yád	īm	vīṣamaṇā	aham̐yú
1.167.7.	together	because	them	manly-minded	proud
	sthirá	cij	jánīr	váhate	subhāgāḥ
	rigid	though	women	she-drives	well-favored

‘because the manly minded, proud, yet stubborn [Rodasi] brings along other favored women’

In these three stanzas *yad* introduces subordinate clauses with three different relationships: Temporal, Conditional, Causal. Such multiple uses of *yad* belong particularly to the archaic style; subsequently they are less frequent, being replaced by more specific conjunctions.

In addition to the greater specificity of subordinate relationship indicated by particles, the early, relatively free hypotactic constructions come to be modified by the dominant subjective quality of the principal verb. The effect may be illustrated by passages like the following from a Strophic hymn, in which the verb of the principal clause is an optative:

RV 1.38.4.	yád	yūyám	pṛṣnimātaro	
	if, when	you	having-Prsni-as-mother	
	mártāsaḥ		syātana	
	mortals		you-would-be	
	stotā	vo	amṛtaḥ	syāt
	singer	your	immortal	he-would-be

*‘Your singer would be immortal if [= in a situation when] you Maruts were mortals.’
(That is, if our roles were reversed, and you were mortals, then you would wish me to be immortal.)*

This passage illustrates how the use of the Optative in the principal clause brings about a Conditional relationship in the Subordinate clause (see also Delbrück 1900). Through its expression of uncertainty the Optative conveys a Conditional rather than a Temporal meaning in the *yad* clause.

NOTE. Lacking verb forms expressing uncertainty, Hittite indicates conditional relationships simply by means of Particles (J. Friedrich 1960). Although several particles are used in Hittite to indicate various types of conditional clauses—*man* ... *mān* for Contrary-to-Fact, *takku* and *man* for Simple Conditionals—Hittite did not develop the variety of patterns found in other dialects. These patterns, as well described in the handbooks, are brought about not only by differing particles but also by the uses of the various tense and mood forms. Constructions in the dialects which have developed farthest from those of PIE are those in which the tense, mood, or person is modified in accordance with rules based on the verb form of the principal clause. Such shifts are among the most far-reaching results of the subjective quality of the Indo-European verb (Delbrück 1900).

Differences between the constructions in the various dialects reflect the changes as well as the earlier situation. In Homer, statements may be reported with a shift of mood and person, as in:

Odyssey	líssesthai	dé	min	autós,	hópōs	nēmertéa	eípēi
	request	Ptc.	him	self	that	true-things	he-may-say
<i>'You yourself ask him so that he tells the truth.'</i>							

The form *eípēi* is a third-person aorist subjunctive. If the statement were in direct discourse, the verb would be *eípe*, second-person imperative, and the clause would read: *eípe nēmertéa* 'tell the truth'. Such shifts in person and mood would not be expected in an OV language; in Vedic, for example, statements are repeated and indicated with a postposed *iti*. The shifts in the other dialects, as they changed more and more to VO structure, led to intricate expression of subordinate relationships, through shifts in person, in mood, and in tense, as well as through specific particles indicating the kind of subordination. The syntactic constructions of these dialects then came to differ considerably from that even in Vedic.

The earliest poems of the Vedas are transparent in syntax, as may be illustrated by Stanzas 9 and 10 of Hymn 1.167:

RV 1.167.9.	nahí	nú	vo	maruto	ánty	asmé
	never	Ptc.	your	Maruts	near	from-us
	āráttāc	cic	chávaso	ántam	āpúḥ	
	from-far	or	of-strength	end	they-reached	
	té	dhṛṣṇúnā	śávasā	śúsuváṁsó		
	they	bold	power	strengthened		
	‘rṇo	ná	dvéṣo	dhṛṣatá	pári	ṣṭhuḥ
	flood	like	enmity	bold	against	they-stand

'Never have they reached the limit of your strength, Maruts, whether near or far from us. Strengthened by bold power they boldly oppose enmity like a flood.'

RV	vayám		adyéndrasya		préṣṭhā		vayám							
1.167.10.	we		today-Indra's		most-favored		we							
	śvó		vocemahi		samaryé									
	tomorrow		we-wish-to-be-called		in-battle									
	vayám		purā́		máhi		ca		no		ánu		dyŭ́n	
	we		formerly		great		and		us		through		days	
	tán		na		ṛbhukṣā́		narām		ánu		ṣyāt			
	that		us		chief		of-men		to		may-he-be			

'We today, we tomorrow, want to be called Indra's favorites in battle. We were formerly. And great things will be for us through the days; may the chief of men give that to us'.

Although the hymn offers problems of interpretation because of religious and poetic difficulties, the syntax of these two stanzas is straightforward; the verbs in general are independent of one another, in this way indicating a succession of individual sentences. Such syntactic patterns, though more complicated than those of prose passages, lack the complexity of Classical Greek and Latin, or even Homeric Greek. These early Vedic texts, like those of Old Hittite, include many of the syntactic categories found in the dialects, but the patterns of order and relationship between clauses had already changed considerably from the OV patterns of Middle PIE.

9.7. SYNTACTIC CATEGORIES

9.7.1. PARTICLES AS SYNTACTIC MEANS OF EXPRESSION

Noninflected words of various functions were used in indicating relationships between other words in the sentence or between sentences.

1. Some were used for modifying Nouns, often indicating the relationships of nouns to verbs. Although these were generally placed after nouns and accordingly were

Postpositions, they have often been called Prepositions by reason of their function rather than their position with regard to nouns (Delbrück).

2. Others were used for modifying Verbs, often specifying more precisely the meanings of verbs; these then may be called Preverbs.

3. Others, commonly referred to as Sentence Connectives, were used primarily to indicate the relationships between Clauses or Sentences (Watkins 1964; Lehmann 1969).

9.7.1.1. POSTPOSITIONS

Postpositions in the various dialects are found with specific cases, in accordance with their meanings.

Yet in the Old Hittite texts, the Genitive rather than such a specific case is prominent with Postpositions derived from Nouns, such as *piran* ‘(in) front’ (Neu 1970):

kuiš	LUGAL-ua-aš	piran	ēšzi
who	king's	front	he-sits
<i>‘whoever sits before the king’</i>			

Such postpositions came to be frozen in form, whether unidentifiable as to etymology; derived from nouns, like *piran*; or derived from verbs, like Skr. *tirás* (viz. Lehmann). Further, as the language came to be VO, they were placed before nouns.

As case forms were less clearly marked, they not only “governed” cases but also took over the meanings of case categories. The preposition *tirás* (*tiró*), derived from the root **tṛ*- ‘cross’, illustrates both the etymological meaning of the form and its eventual development as preposition:

RV	yám	te	śyenáh	padābharat
8.82.9.	what	for-you	eagle	with-foot-he-bore
	tiró		rājāṅsy	áspṛtam
	crossing, through		skies	not-relinquishing
	píbéd [<píba íd]	asya	tvám	īśiṣe
	you-drink-indeed	of-it	you	you-are-master (for-your-benefit)

‘What the eagle brought for you in his claws, not dropping it [as he flew] through the skies, of that drink. You control [it for your own benefit]’.

The syntactic use of such particles with nouns is accordingly clear.

9.7.1.2. PREVERBS

1. Rather than having the close relationships to nouns illustrated above, particles could instead be associated primarily with Verbs, often the same particles which were used as Postpositions.

2. Such combinations of particles and verbs came to be treated as units and are found repeatedly in specific uses (Delbrück 1888).

A. Preverbs might occupy various positions:

1. If unmarked, they are placed before the verb;

2. If marked, they are placed initially in clauses (Watkins 1964).

NOTE. In the course of time the Preverbs in unmarked position came to be combined with their verbs, though the identity of each element is long apparent in many of the dialects. Thus, in Modern German the primary accent is still maintained on some verbal roots, and in contrast with cognate nouns the prefix carries weak stress: *erteilen* ‘*distribute*’, *Úrteil* ‘*judgment*’. The steps toward the combination of preverb and verbal root have been described for the dialects, for example, Greek, in which uncombined forms as well as combined forms are attested during the period of our texts.

B. In the attested IE dialects:

a. Preverbs which remained uncombined came to be treated as Adverbs.

b. Combinations of Preverbs plus Verbs, on the other hand, eventually came to function like unitary elements.

The two different positions of preverbs in early texts led eventually to different word classes.

9.7.1.3. SENTENCE PARTICLES

1. Particles were also used to relate sentences and clauses (J. Friedrich 1959:18, § 11):

takku	LÚ.ULÙ ^{LU} -an	EL.LUM	QA.AZ.ZU	našma	GÌR-ŠU	kuiški
if	man	free	his-hand	or	his-foot	someone
tuḡarnizzi	nušše	20	GÍN	KUBABBAR		paii
he-breaks	Ptc.-to-him	20	shekels	silver		he-gives

'If anyone breaks the hand or foot of a freeman, then he must give him twenty shekels of silver.'

Particles like the initial word in this example indicate the kind of clause that will follow and have long been well described. The function of particles like *nu* is not, however, equally clear.

NOTE. Dillon and Götze related *nu* and the use of sentence connectives to similar particles in Old Irish (Dillon 1947). Such particles introduce many sentences in Old Irish and have led to compound verb forms in this VSO language. Delbrück had also noted their presence in Vedic (1888)

Since introductory *šu* and *ta* were more frequent than was *nu* in the older Hittite texts, scholars assumed that sentences in IE were regularly introduced by these sentence connectives. And Sturtevant proposed, as etymology for the anaphoric pronoun, combinations of **so-** and **to-** with enclitic pronouns, as in the well-known Hittite sequence *ta-at*, cf. IE **tod**, and so on (see Otten and Souček 1969 for the use of such particles in one text).

It is clear that sentence connectives were used in Hittite to indicate continued treatment of a given topic (Raman 1973). It is also found with Hittite relative constructions, a function which may also be ascribed to Vedic *sá* and *tád*.

NOTE. For Lehmann (1974), since this use may be accounted for through post-PIE influences, sentence connectives may have had a minor role in PIE.

2. Other particles, like Hitt. *takku* 'if', probably had their counterparts in PIE, even if the surface forms were completely unrelated. This is also true for Emphatic Particles like Skr. *íd*; they were used after nouns as well as imperatives. Such emphatic particles combined with imperatives suggest the presence of Interjections, which cannot usually be directly reconstructed for PIE but are well attested in the several dialects.

3. A coordinate sentence connective **-qe** can clearly be reconstructed on the basis of Goth. *u(h)*, Skr. *ca*, Gk. *te*, Lat. *que*, and so on. But its primary function is the coordination of elements in the sentence rather than clauses or sentences.

NOTE. Moreover, when *ca* is used to connect verbs in the Vedic materials, they are parallel (Delbrück 1888); Delbrück finds only one possible exception. In an OV language the relating of successive verbs is carried out by means of nonfinite verbs placed before finite. We may then expect that coordinating particles had their primary use in PIE as connectors for sentence elements rather than for sentences.

Another such particle is **-wě** ‘or’. Like **-qe**, the particle indicating disjunctive ‘or’ was postposed, in retention of the original pattern as late as Classical Latin.

4. Particles in PIE may also have corresponded to verbal qualifiers.

a. The most notable of these is **mē**, which carried a negative modal meaning.

b. There is indication of such uses of particles in other patterns, for example, of Vedic *purā* ‘earlier’ to indicate the past, as apparently Brugmann was the first to point out (Delbrück 1888), and also Vedic *sma*, to indicate repeated action in the past (Hoffmann 1967). It is curious that *sma* is also found after *mā* in Vedic (Hoffmann 1967).

NOTE. Lehmann suggested that such mood- and tense-carrying particles may have been transported from a postverbal to a preverbal position. Some particles may accordingly have been equivalent in an earlier stage of PIE to elements used after verbs to indicate verbal categories.

9.7.2. MARKED ORDER IN SENTENCES

1. Elements in sentences can be emphasized, by Marking; the chief device for such emphasis is Initial Position.

Other sentence elements may also be placed in initial position for marking.

2. In unmarked position the preverb directly precedes the verb. Changes in normal order thus provide one of the devices for conveying emphasis.

Other devices have to do with Selection, notably particles which are postposed after a marked element.

3. Emphasis can also be indicated by lexical selection.

4. Presumably other modifications might also be made, as in Intonation.

The various syntactic devices accordingly provided means to introduce marking in sentences.

9.7.3. TOPICALIZATION WITH REFERENCE TO EMPHASIS

Like emphasis, Topicalization is carried out by patterns of arrangement, but the arrangement is applied to coequal elements rather than elements which are moved from their normal order.

Topicalization by arrangement is well known in the study of the early languages, as in the initial lines of the Homeric poems. The Iliad begins with the noun *mēnin* 'wrath', the Odyssey with the noun *ándra* 'man'. These, to be sure, are the only possible nouns in the syntactically simple sentences opening both poems: *mēnin áeide* 'Sing of the wrath' and *ándra moi éennepe* 'Tell me of the man'. Yet the very arrangement of *moi* and other enclitics occupying second position in the sentence, in accordance with Wackernagel's law, indicates the use of initial placement among nominal elements for topicalization.

The use of topicalization may be illustrated by a more complex set of sentences, such as the first address of Zeus in the Odyssey. Only the first lines of this will be quoted; but these indicate a shift in topic from the 'gods' to 'men', then to a particular man, Aegisthus, then to Agamemnon, and subsequently to Orestes (Lehmann 1974).

Ο πόποι, ἡὸν δένυ θεοῦς βροτὸι αἰτιόονται; ἐκς ἡμέων γάρ φασι κάκ' ἐμμεναι, ἡοὶ δὲ καὶ αὐτοὶ, σπεῖσιν ἀτασθαλείσιν ὑπὲρ μόρον ἄλγε' ἐκῆουσιν, ἡὸς καὶ νῦν Αἰγίσθος ὑπὲρ μόρον Ἀτρεΐδαο, γέμ' ἁλόκῃον μνῆστέν, τὸν δ' ἐκτανε νοσῆσάντα,

'Alas, how the mortals are now blaming the gods. For they say evils come from us, but they themselves have woes beyond what's fated by their own stupidities. Thus Aegisthus beyond what was fated has now married the wedded wife of Agamemnon, and killed him on his return.'

As this passage and many others that might be cited illustrate, the basic sentence patterns could be rearranged by stylistic rules, both for emphasis and for topicalization. In this way the relatively strict arrangement of simple sentences could be modified to bring about variety and flexibility.

APPENDIX I: INDO-EUROPEAN IN USE

I.1. TEXTS TRANSLATED INTO MODERN INDO-EUROPEAN

These texts have been translated as examples for the revived language.

I.1.1. PATER NOS (LORD'S PRAYER)

Eurōpājóm	English	Latine	Ελληνικά
Pater Nos, kémeloisi jos esi,	Our Father, who art in heaven,	Pater noster, qui es in caelis:	Πάτερ ἡμῶν ὁ ἐν τοῖς οὐρανοῖς·
Nōm̃ sqénatoru tewe.	Hallowed be thy Name.	sanctificetur Nomen Tuum;	ἁγιασθῆτω τὸ ὄνομά σου·
Regnom cémjetōd tewe.	Thy kingdom come.	adveniat Regnum Tuum;	ἐλθέτω ἡ βασιλεία σου·
Dhidhétoru woljā Téwijā,	Thy will be done,	fiat voluntas Tua,	γενηθῆτω τὸ θέλημά σου,
ita kémelei jota płtáwijiāi.	On earth as it is in heaven.	sicut in caelo, et in terra.	ὡς ἐν οὐρανῷ καὶ ἐπὶ γῆς·
Qāqodjūtenom bharsjom ņseróm edjēu dasdhi nos	Give us this day our daily bread.	Panem nostrum cotidianum da nobis hodie;	τὸν ἄρτον ἡμῶν τὸν ἐπιούσιον δὸς ἡμῖν σήμερον·
joqe dhleglāns ņserāns parke,	And forgive us our trespasses,	et dimitte nobis debita nostra,	καὶ ἄφες ἡμῖν τὰ ὀφειλήματα ἡμῶν,
swāi skéletbhos párkomos.	As we forgive those who trespass against us.	Sicut et nos dimittimus debitoribus nostris;	ὡς καὶ ἡμεῖς ἀφίεμεν τοῖς ὀφειλέταις ἡμῶν·
Enim mē ņsmé péritloi enke prōd,	And lead us not into temptation,	et ne nos inducas in tentationem;	καὶ μὴ εἰσενέγκῃς ἡμᾶς εἰς πειρασμόν,
mō úpelēd nosēje nos. Estōd.	But deliver us from evil. Amen	sed libera nos a Malo. Amen	ἀλλὰ ρῦσαι ἡμᾶς ἀπὸ τοῦ πονηροῦ. ἀμήν.

I.1.2. SLWĒJE MARIJĀ (HAIL MARY)

Eurōpājóm	English	Latine	Ελληνικά
Slwēje Marijā, crātjā plēnā tū,	Hail Mary, full of grace,	Ave María, gratia plena,	Θεοτόκε Παρθένε, χαῖρε, κεχαριτωμένη Μαρία,
Arjos twojo esti;	the Lord is with thee;	Dominus tecum.	ὁ Κύριος μετὰ σοῦ.
súwoqnā cénāisi esi,	blessed art thou among women,	Benedicta tu in mulieribus,	εὐλογημένη σὺ ἐν γυναιξί,
súwoqnos-qe úderosjo two bhreugs estōd, Jēsus.	and blessed is the fruit of thy womb, Jesus.	et benedictus fructus ventris tui, Iesus.	εὐλογημένος ὁ καρπὸς τῆς κοιλίας σου, ὅτι Σωτήρα ἔτεκες τῶν ψυχῶν ἡμῶν
Noibha Marijā, Déiwošjo Mātér,	Holy Mary, Mother of God,	Sancta Maria, Mater Dei,	
nosbhos ōrāje āgeswñtbhos,	pray for us sinners,	ora pro nobis peccatoribus,	
numki mrtjos-qe nos daitei. Estōd.	now and at the hour of our death. Amen.	nunc et in hora mortis nostrae. Amen.	

I.1.3. KRÉDDHĒMI (NICENE CREED)

Eurōpājóm	English	Latine	Ελληνικά
Oinom kréddhēmi Deiwom,	We believe in one God,	Credo in unum Deo,	Πιστεύομεν εἰς ἓνα Θεόν
Paterm solwomóghmonm,	the Father Almighty,	Patrem omnipotentem,	Πατέρα παντοκράτορα,
djéwepl̥táwīdhōtm,	Maker of heaven and earth,	factorem cæli et terræ,	ποιητὴν οὐρανοῦ καὶ γῆς,
ḍrkñjōm sólwosom ṇḍrkñjōm-qe dhētór;	and of all things visible and invisible.	visibílium ómnium et invisibílium;	ὁρατῶν τε πάντων καὶ ἀοράτων.
Arjom-qe Jēsum Ghristóm oinom,	And in one Lord Jesus Christ,	Et in unum Dóminum Iesum Christum,	Καὶ εἰς ἓνα κύριον Ἰησοῦν Χριστόν,

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Déiwoſjo Sūnóm oinógnātom,	the only-begotten Son of God,	Fílium Dei unigénitum,	τὸν υἱὸν τοῦ θεοῦ τὸν μονογενῆ,
Patros-jos gnātós aiwēd prāi solwēd,	begotten of the Father before all worlds (æons),	et ex Patre natum ante ómnia sæcula:	τὸν ἐκ τοῦ πατρὸς γεννηθέντα πρὸ πάντων τῶν αἰώνων,
Deiwoſ Deiwēd, leuksmŋ léuksmene, wērom Deiwom wērēd Deiwēd,	Light of Light, very God of very God,	Deum de Deo, lumen de lúmine, Deum verum de Deo vero,	φῶς ἐκ φωτός, θεὸν ἀληθινὸν ἐκ θεοῦ ἀληθινοῦ,
gentós, nē dhatos,	begotten, not made,	génitum non factum,	γεννηθέντα οὐ ποιηθέντα,
Patrei kómbhoutis,	being of one substance with the Father;	consubstantiálem Patri,	ὁμοούσιον τῷ πατρί·
josōd solwā dhaktá senti;	by whom all things were made;	per quem ómnia facta sunt;	δι' οὗ τὰ πάντα ἐγένετο·
qos nosbhis rōdhí dhghómŋbhis kémelobhos kidét,	who for us men, and for our salvation, came down from heaven,	qui propter nos hómines et propter nostram salútem descéndit de cælis;	τὸν δι' ἡμᾶς τοὺς ἀνθρώπους καὶ διὰ τὴν ἡμετέραν σωτηρίαν κατελθόντα
enim memsom Noibhēd Ánamēd Wéwrtei Marijād eksí ándhesād, enim dhghomōn geneto;	and was incarnate by the Holy Ghost of the Virgin Mary, and was made man;	et incarnátus est de Spíritu Sancto ex María Vírgine et homo factus est;	ἐκ τῶν οὐρανῶν καὶ σαρκωθέντα ἐκ πνεύματος ἁγίου καὶ Μαρίας τῆς παρθένου καὶ ἐνανθρωπήσαντα,
eti krukídhētos nosbhis prōd Pontjei upo Pilatei, pastos sepēlitós-qe esti,	he was crucified for us under Pontius Pilate, and suffered, and was buried,	crucifíxus étiam pro nobis sub Póntio Piláto, passus et sepúltus est;	σταυρωθέντα τε ὑπὲρ ἡμῶν ἐπὶ Ποντίου Πιλάτου, καὶ παθόντα καὶ ταφέντα,
joqe ati tritjei stete diwí, skréibhmona ad kémelom-qe skāndwós, Patri déksijāi sedéjeti;	and the third day he rose again, according to the Scriptures, and ascended into heaven, and sitteth on the right hand of the Father;	et resurréxit tértia die secúndum Scriptúras; et ascéndit in cælum, sedet ad dexteram Patris;	καὶ ἀναστάντα τῇ τρίτῃ ἡμέρᾳ κατὰ τὰς γραφάς, καὶ ἀνελθόντα εἰς τοὺς οὐρανοὺς, καὶ καθεζόμενον ἐκ δεξιῶν τοῦ πατρὸς

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joqe dwonim kléwosē cemjest cīwóns mṛwons-qe kómdhēnqos;	from thence he shall come again, with glory, to judge the quick and the dead;	et iterum ventūrus est cum glória iudicāre vivos et mórtuos;	καὶ πάλιν ἐρχόμενον μετὰ δόξης κρῖναι ζῶντας καὶ νεκρούς·
qosjo regnom nē antjom bhéuseti.	whose kingdom shall have no end.	cuius regni non erit finis;	οὗ τῆς βασιλείας οὐκ ἔσται τέλος.
joqe Noibhom Ánamom, potim étrodhōtm-qe, Patrós Sūneus-qe proilóm,	And in the Holy Ghost, the Lord and Giver of life, who proceedeth from the Father,	Et in Spíritum Sanctum, Dóminum et vivificántem: qui ex Patre <i>Filióque</i> procédit;	Καὶ εἰς τὸ Πνεῦμα τὸ Ἅγιον, τὸ κύριον, (καὶ) τὸ ζωοποιόν, τὸ ἐκ τοῦ πατρὸς ἐκπορευόμενον,
qei Patrē Sūnéwē- qe semli áidetor enim magtájeter bhatos-jos próbhātṣ terqe esti.	who with the Father and the Son together is worshiped and glorified, who spake by the prophets.	qui cum Patre et Fílio simul adorátur et conglorificátur; qui locútus est per Prophétas;	τὸ σὺν πατρὶ καὶ υἱῷ συμπροσκυνούμενον καὶ συνδοξαζόμενον, τὸ λαλήσαν διὰ τῶν προφητῶν.
joqe oinām, noibhām, kṃtísolwām apostólejām ékkletijām.	In one holy catholic and apostolic Church;	Et in unam sanctam cathólicam et apostólicam Ecclésiām.	εἰς μίαν, ἁγίαν, καθολικὴν καὶ ἀποστολικὴν ἐκκλησίαν·
Oinom bhatējai agesupomoukom cadhmṇ;	we acknowledge one baptism for the remission of sins;	Confíteor unum baptísma in remissionem peccatorum	ὁμολογοῦμεν ἓν βάπτισμα εἰς ἄφεσιν ἁμαρτιῶν·
saitlōm-qe cītām cémjonqōm. Estōd	we look for the resurrection of the dead, and the life of the world to come. Amen.	et exspecto resurrectionem mortuorum et vitam ventūri sæculi. Amen.	προσδοκοῦμεν ἀνάστασιν νεκρῶν, καὶ ζωὴν τοῦ μέλλοντος αἰῶνος. Ἀμήν.

I.1.4. NOUDÓS SŪNÚS (PARABLE OF THE PRODIGAL SON)

	Eurōpājóm	English	Latine	Ελληνικά
11	Dhghomōn enis sū' nuwe eiket.	“A certain man had two sons.	Homo quidam habuit duos filios:	Ἄνθρωπός τις εἶχεν δύο υἱούς.
12	Joqe jowísteros patrēi weuqét : Pater, rijós dasdhi moi aitim qāi meghei áineti, joqe rēim ibhom widhét.	And the younger of them said to his father, ‘Father, give me the portion of goods that falls to me.’ So he divided to them his livelihood.	et dixit adolescentior ex illis patri: Pater, da mihi portionem substantiæ, quæ me contingit. Et divisit illis substantiam.	καὶ εἶπεν ὁ νεώτερος αὐτῶν τῷ πατρί, Πάτερ, δός μοι τὸ ἐπιβάλλον μέρος τῆς οὐσίας. ὁ δὲ διεῖλεν αὐτοῖς τὸν βίον.
13	Enim nē péluwāns dināns pos, solwā garlós, jowísteros sūnús reu porsótenom oigheto londhom, idhei-qe rēim nudét sewe ghlóidotos ciwents.	And not many days after, the younger son gathered all together, journeyed to a far country, and there wasted his possessions with prodigal living.	Et non post multos dies, congregatis omnibus, adolescentior filius peregre profectus est in regionem longinquam, et ibi dissipavit substantiam suam vivendo luxuriose.	καὶ μετ' οὐ πολλὰς ἡμέρας συναγαγὼν πάντα ὁ νεώτερος υἱὸς ἀπεδήμησεν εἰς χώραν μακράν, καὶ ἐκεῖ διεσκορπίσεν τὴν οὐσίαν αὐτοῦ ζῶν ἁσώτως.
14	Enim ítapo solwā cósisset kom, dhr̥ghtós molét ghrēdhus londhei ólnosmei, joqe egētum sepe bhwije.	But when he had spent all, there arose a severe famine in that land, and he began to be in want.	Et postquam omnia consummasset, facta est fames valida in regione illa, et ipse coepit egere.	δαπανήσαντος δὲ αὐτοῦ πάντα ἐγένετο λιμὸς ἰσχυρὰ κατὰ τὴν χώραν ἐκείνην, καὶ αὐτὸς ἤρξατο ὑστερεῖσθαι.
15	Itaqe cālós, qismei jugeto kéiwijom ólnosjo londhī, imqe sontajet porkons pāsksi.	Then he went and joined himself to a citizen of that country, and he sent him into his fields to feed swine.	Et abiit, et adhæsit uni civium regionis illius: et misit illum in villam suam ut pasceret porcos.	καὶ πορευθεὶς ἐκολλήθη ἐνὶ τῶν πολιτῶν τῆς χώρας ἐκείνης, καὶ ἐπεμψεν αὐτὸν εἰς τοὺς ἀγροὺς αὐτοῦ βόσκειν χοίρους:

16	Atqe úderom skliqāis plénātum gheríjeto porkōs edent jans atqe neqis ismeī dōt.	And he would gladly have filled his stomach with the pods that the swine ate, and no one gave him anything.	Et cupiebat implere ventrem suum de siliquis, quas porci manducabant: et nemo illi dabat.	καὶ ἐπεθύμει χορτασθῆναι ἐκ τῶν κερατίων ὧν ἤσθιον οἱ χοῖροι, καὶ οὐδεὶς ἐδίδου αὐτῷ.
17	Swei poti wṛtomnós, egt: qotjoi patrós domei mísdhotes paskneis spréigonti, kei egó au dhami mr̥ijai!	“But when he came to himself, he said, ‘How many of my father’s hired servants have bread enough and to spare, and I perish with hunger!’	In se autem reversus, dixit: Quanti mercenarii in domo patris mei abundant panibus, ego autem hic fame pereō!	εἰς ἑαυτὸν δὲ ἐλθὼν ἔφη, Πόσοι μίσθιοι τοῦ πατρός μου περισεύονται ἄρτων, ἐγὼ δὲ λιμῷ ὧδε ἀπόλλυμαι.
18	ṛísomnos paterm̐ eisō mene ad, joqe ismeī seksō : Pater, kémelom proti tewom-qe antí memlai,	I will arise and go to my father, and will say to him, “Father, I have sinned against heaven and before you,	surgam, et ibo ad patrem meum, et dicam ei: Pater, peccavi in cælum, et coram te:	ἀναστὰς πορεύσομαι πρὸς τὸν πατέρα μου καὶ ἐρῶ αὐτῷ, Πάτερ, ἡμαρτον εἰς τὸν οὐρανὸν καὶ ἐνώπιόν σου,
19	jāmi nē deknos egó, sūnús téwijos kluwētum: dhasdhi me swāi qimqim mísdhotom tewe.	and I am no longer worthy to be called your son. Make me like one of your hired servants.”	jam non sum dignus vocari filius tuus: fac me sicut unum de mercenariis tuis.	οὐκέτι εἰμὶ ἄξιος κληθῆναι υἱός σου: ποιήσόν με ὡς ἓνα τῶν μισθίων σου.
20	Ita ṛitós paterm̐ ludhét sewe. Eti jom qeli bhūlō, em patér tósjope dṛket, joqe ana kṛsents kómqēiljō krūtós estí enim kolsom petlós em bhusājét.	“And he arose and came to his father. But when he was still a great way off, his father saw him and had compassion, and ran and fell on his neck and kissed him.	Et surgens venit ad patrem suum. Cum autem adhuc longe esset, vidit illum pater ipsius, et misericordia motus est, et accurrens cecidit super collum ejus, et osculatus est eum.	καὶ ἀναστὰς ἦλθεν πρὸς τὸν πατέρα ἑαυτοῦ. ἔτι δὲ αὐτοῦ μακρὰν ἀπέχοντος εἶδεν αὐτὸν ὁ πατήρ αὐτοῦ καὶ ἐσπλαγχνίσθη καὶ δραμῶν ἐπέπεσεν ἐπὶ τὸν τράχηλον αὐτοῦ καὶ κατεφίλησεν αὐτόν.

Appendix I: Indo-European in Use

21	Wedét óisosmōi sūnús: Pater, kémelom proti tewom-qe anti memlai: jāmi nē deknos egó, sūnús téwijos nōmnādhjom	And the son said to him, ‘Father, I have sinned against heaven and in your sight, and am no longer worthy to be called your son.’	Dixitque ei filius: Pater, peccavi in caelum, et coram te: jam non sum dignus vocari filius tuus.	εἶπεν δὲ ὁ υἱὸς αὐτοῦ, Πάτερ, ἡμαρτον εἰς τὸν οὐρανὸν καὶ ἐνώπιόν σου, οὐκέτι εἰμι ἄξιος κληθῆναι υἱός σου.
22	nū mísdhatbhos bhato patér sewe; bherši: pṛismām dhrághete togām joqe tom westijete, anom tosjó ghéseni kerpjons-qe esjo daste pedsú:	“But the father said to his servants, ‘Bring out the best robe and put it on him, and put a ring on his hand and sandals on his feet.	Dixit autem pater ad servos suos: Cito proferte stolam primam, et induite illum, et date annulum in manum ejus, et calceamenta in pedes ejus:	εἶπεν δὲ ὁ πατήρ πρὸς τοὺς δούλους αὐτοῦ, Ταχὺ ἐξενέγκατε στολὴν τὴν πρώτην καὶ ἐνδύσατε αὐτόν, καὶ δότε δακτύλιον εἰς τὴν χεῖρα αὐτοῦ καὶ ὑποδήματα εἰς τοὺς πόδας,
23	kom piwonṃ- qe bhérete loigom joqe chénete, joqe edāmos, joqe włdām terpāmos,	And bring the fattened calf here and kill it, and let us eat and be merry;	et adducite vitulum saginatum, et occidite, et manducemus, et epulemur:	καὶ φέρετε τὸν μόσχον τὸν σιτευτόν, θύσατε καὶ φαγόντες εὐφρανθῶμεν,
24	jodqid kei sūnús mene dhedhuwós ēst atqe coje ati: skombnós ēst, atqe wṛētai. Enim włdām bhwijónt.	for this my son was dead and is alive again; he was lost and is found.’ And they began to be merry.	quia hic filius meus mortuus erat, et revixit: perierat, et inventus est. Et coeperunt epulari.	ὅτι οὗτος ὁ υἱός μου νεκρὸς ἦν καὶ ἀνέζησεν, ἦν ἀπολωλὼς καὶ εὗρέθη. καὶ ἤρξαντο εὐφραίνεσθαι.
25	Agrei au senísteros ēst sūnús: joqe jom cēmsēt enim domom nedisēt, kómkantum leigṃ-qe kluwét.	“Now his older son was in the field. And as he came and drew near to the house, he heard music and dancing.	Erat autem filius ejus senior in agro: et cum veniret, et appropinquaret domui, audivit symphoniam et chorum:	ἦν δὲ ὁ υἱὸς αὐτοῦ ὁ πρεσβύτερος ἐν ἀγρῷ: καὶ ὡς ἐρχόμενος ἤγγισεν τῇ οἰκίᾳ, ἤκουσεν συμφωνίας καὶ χορῶν,

26	Joqe neqom móghuwom ghaulós prket qid ghāi-ke bhousēnt.	So he called one of the servants and asked what these things meant.	et vocavit unum de servis, et interrogavit quid hæc essent.	καὶ προσκαλεσάμενος ἓνα τῶν παιδῶν ἐπυνθάνετο τί ἂν εἴη ταῦτα.
27	Isqe sqet: bhrātēr tewe cēme enim piwonm patér two chone loigom, jodqid tom cīwóm solwom ghōde.	And he said to him, ‘Your brother has come, and because he has received him safe and sound, your father has killed the fatted calf.’	Isque dixit illi: Frater tuus venit, et occidit pater tuus vitulum saginatum, quia saluum illum recepit.	ὁ δὲ εἶπεν αὐτῷ ὅτι Ὁ ἀδελφός σου ἦκει, καὶ ἔθυσεν ὁ πατήρ σου τὸν μόσχον τὸν σιτευτόν, ὅτι ὑγιαίνοντα αὐτὸν ἀπέλαβεν.
28	kṛditós autim esti, joqe nē en eitum welwāt. Ar patér ejos eksodlós, bhwijét im chestum.	“But he was angry and would not go in. Therefore his father came out and pleaded with him.	Indignatus est autem, et nolebat introire. Pater ergo illius egressus, cœpit rogare illum.	ὠργίσθη δὲ καὶ οὐκ ἤθελεν εἰσελθεῖν. ὁ δὲ πατήρ αὐτοῦ ἐξελθὼν παρεκάλει αὐτόν.
29	Atqe se protiweqents, patrēi bhato sewe: edke totjons atnons sístāmi twei upo, joqe neqom dikām tewe kleusō dus, atqe neqom meghei ghaidom desta wldāi ameikos senutēwijāi.	So he answered and said to his father, ‘Lo, these many years I have been serving you; I never transgressed your commandment at any time; and yet you never gave me a young goat, that I might make merry with my friends.	At ille respondens, dixit patri suo: Ecce tot annis servio tibi, et numquam mandatum tuum præterivi: et numquam dedisti mihi hædum ut cum amicis meis epularer.	ὁ δὲ ἀποκριθεὶς εἶπεν τῷ πατρὶ αὐτοῦ, Ἰδοὺ τοσαῦτα ἔτη δουλεύω σοι καὶ οὐδέποτε ἐντολήν σου παρήλθον, καὶ ἐμοὶ οὐδέποτε ἔδωκας ἔριπον ἵνα μετὰ τῶν φίλων μου εὐφρανθῶ:
30	Mō ita tom sūnús tewe kei, rēim loutsāis cṛālós cēme, ólnosmōi píwonm loigom chonta.	But as soon as this son of yours came, who has devoured your livelihood with harlots, you killed the fatted calf for him.’	Sed postquam filius tuus hic, qui devoravit substantiam suam cum meretricibus, venit, occidisti illi vitulum saginatum.	ὅτε δὲ ὁ υἱός σου οὗτος ὁ καταφαγὼν σου τὸν βίον μετὰ πορνῶν ἦλθεν, ἔθυσας αὐτῷ τὸν σιτευτόν μόσχον.

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31	Atqe oise tosmōi weuqét: suneu, tū áiwesi mojo esi, enim solwā menjā téwijā senti.	“And he said to him, ‘Son, you are always with me, and all that I have is yours.	At ipse dixit illi: Fili, tu semper mecum es, et omnia mea tua sunt:	ὁ δὲ εἶπεν αὐτῷ, Τέκνον, σὺ πάντοτε μετ' ἐμοῦ εἶ, καὶ πάντα τὰ ἐμὰ σὰ ἐστίν:
32	Włdám autim terptum, joqe gaudhētum opos est, jodqid bhrātēr tewe kei dhedhuwós ēst atqe coje ati: skombnós ēst, atqe wrētai.	It was right that we should make merry and be glad, for your brother was dead and is alive again, and was lost and is found.”	epulari autem, et gaudere oportebat, quia frater tuus hic mortuus erat, et revixit; perierat, et inventus est.	εὐφρανθῆναι δὲ καὶ χαρῆναι ἔδει, ὅτι ὁ ἀδελφός σου οὗτος νεκρὸς ἦν καὶ ἔζησεν, καὶ ἀπολωλὼς καὶ εὑρέθη.

I.1.5. NEWOS BHEIDHOS (NEW TESTAMENT) – JŌHANĒS, 1, 1-14

	Eurōpājóm	English	Latine	Ελληνικά
1	Pārjei Wṛdhom bhewet, joqe Wṛdhom Deiwei ēst ensí, joqe Deiwos Wṛdhom ēst.	In the beginning was the Word, and the Word was with God, and the Word was God.	in principio erat Verbum et Verbum erat apud Deum et Deus erat Verbum	Ἐν ἀρχῇ ἦν ὁ λόγος, καὶ ὁ λόγος ἦν πρὸς τὸν θεόν, καὶ θεὸς ἦν ὁ λόγος.
2	Ensí id pārjei Deiwei ēst.	He was in the beginning with God.	hoc erat in principio apud Deum	οὗτος ἦν ἐν ἀρχῇ πρὸς τὸν θεόν.
3	Eisōd solwā gegner enim id ɳeu neqid gégnisēt josjo gégone.	All things were made through Him, and without Him nothing was made that was made.	omnia per ipsum facta sunt et sine ipso factum est nihil quod factum est	πάντα δι' αὐτοῦ ἐγένετο, καὶ χωρὶς αὐτοῦ ἐγένετο οὐδὲ ἓν. ὃ γέγονεν
4	Ismi cītā bhewet, joqe cītā ēst dhghómonom leuks.	In Him was life, and the life was the light of men.	in ipso vita erat et vita erat lux hominum	ἐν αὐτῷ ζωὴ ἦν, καὶ ἡ ζωὴ ἦν τὸ φῶς τῶν ἀνθρώπων:

5	Itaqe leuks skotei skéjeti, joqe oisām skotos nē turét.	And the light shines in the darkness, and the darkness did not comprehend it	et lux in tenebris lucet et tenebrae eam non conprehenderunt	καὶ τὸ φῶς ἐν τῇ σκοτίᾳ φαίνει, καὶ ἡ σκοτία αὐτὸ οὐ κατέλαβεν.
6	Gnātós esti wīrós Deiwō sontonós Jōhanēs nómptos.	There was a man sent from God, whose name was John.	fuit homo missus a Deo cui nomen erat Iohannes	Ἐγένετο ἄνθρωπος ἀπεσταλμένος παρὰ θεοῦ, ὄνομα αὐτῷ Ἰωάννης;
7	Tristimonjōi ludhét se, leukbhi tristidhēnts, ei solwoi ijo kreddhēsēnt.	This man came for a witness, to bear witness of the Light, that all through him might believe.	hic venit in testimonium ut testimonium perhiberet de lumine ut omnes crederent per illum	οὗτος ἦλθεν εἰς μαρτυρίαν, ἵνα μαρτυρήσῃ περὶ τοῦ φωτός, ἵνα πάντες πιστεύσωσιν δι' αὐτοῦ.
8	Nē olne leuks, immō, leukbhi tristidhēnts.	He was not that Light, but was sent to bear witness of that Light.	non erat ille lux sed ut testimonium perhiberet de lumine	οὐκ ἦν ἐκεῖνος τὸ φῶς, ἀλλ' ἵνα μαρτυρήσῃ περὶ τοῦ φωτός.
9	Leuks wērom ēst, solwom bhānuti dhghomonm, dhoubnom kod ludhlā.	That was the true Light which gives light to every man coming into the world.	erat lux vera quae inluminat omnem hominem venientem in mundum	ἦν τὸ φῶς τὸ ἀληθινόν, ὃ φωτίζει πάντα ἄνθρωπον, ἐρχόμενον εἰς τὸν κόσμον.
10	Dhoubnei ēst, enim ijo dhoubnom gegner, atqe nē im dhoubnom gnōt.	He was in the world, and the world was made through Him, and the world did not know Him.	in mundo erat et mundus per ipsum factus est et mundus eum non cognovit	ἐν τῷ κόσμῳ ἦν, καὶ ὁ κόσμος δι' αὐτοῦ ἐγένετο, καὶ ὁ κόσμος αὐτὸν οὐκ ᾔγνων.
11	Somobhos ludhét, atqe im somói ghadont nei ad.	He came to His own, and His own did not receive Him.	in propria venit et sui eum non receperunt	εἰς τὰ ἴδια ἦλθεν, καὶ οἱ ἴδιοι αὐτὸν οὐ παρέλαβον.

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12	Jotjoi im ghadónt, moghtim tobhos génonī dōt Diwoputla, esjo nōmṇ kréddhēntbhos,	But as many as received Him, to them He gave the right to become children of God, to those who believe in His name:	quotquot autem receperunt eum dedit eis potestatem filios Dei fieri his qui credunt in nomine eius	ὅσοι δὲ ἔλαβον αὐτόν, ἔδωκεν αὐτοῖς ἐξουσίαν τέκνα θεοῦ γενέσθαι, τοῖς πιστεύουσιν εἰς τὸ ὄνομα αὐτοῦ,
13	joi nē ésenos, neqe memsī woljās, neqe wīrī immō Déiwsjo gnātós sonti.	who were born, not of blood, nor of the will of the flesh, nor of the will of man, but of God.	qui non ex sanguinibus neque ex voluntate carnis neque ex voluntate viri sed ex Deo nati sunt	οἱ οὐκ ἐξ αἱμάτων οὐδὲ ἐκ θελήματος σαρκὸς οὐδὲ ἐκ θελήματος ἀνδρὸς ἀλλ' ἐκ θεοῦ ἐγεννήθησαν.
14	Joqe Wṛdthom memsom wṛstós esti, enim pltomóm ṛsmí dhēke ení, enim ejos qedos dṛkomes, qedos swāi oinógnātejom Patrós wérotjō cratjā-qe plénóm.	And the Word became flesh and dwelt among us, and we beheld His glory, the glory as of the only begotten of the Father, full of grace and truth.	et Verbum caro factum est et habitavit in nobis et vidimus gloriam eius gloriam quasi unigeniti a Patre plenum gratiae et veritatis	Καὶ ὁ λόγος σὰρξ ἐγένετο καὶ ἐσκήνωσεν ἐν ἡμῖν, καὶ ἐθεασάμεθα τὴν δόξαν αὐτοῦ, δόξαν ὡς μονογενοῦς παρὰ πατρός, πλήρης χάριτος καὶ ἀληθείας.

I.2

KOMTLOQJOM

(CONVERSATION)

Common expressions in MIE include:

English	Eurōpājóm
hello!	alā! / gheuse!
dear Peter:	qeime Perte:
welcome	crātós / sucmtós tū
good day	latom ěsúm
good morning	wēsrom ěsúm
good afternoon / evening	wesprom ěsúm
good night	noqtim ěsúm
how are you?	qotā wļĕjesi?
I am fine	wļĕjō sū
Who are you?	qis esi?
Whose [son] are you?	qosjo esi?
what is your name? [<i>how are you heard?</i>]	qotā kluwĕjesi?
what is your name?	qid esti tebhei nōmṇ?
my name is Peter [<i>I am heard Peter</i>]	kluwĕjō Pertos
my name is Peter	meghei Pertos nōmṇ
pleased to meet you	gaudhĕjō tewe gnōtim

please [<i>I ask you</i>]	chedhō
thanks	mĕitimons / moitmom
thanks (I give you)	prijĕsna / prósĕdjom (tebhei agō)
I thank you	prijĕjō tewom
you are welcome, sir	esti sū, potei
excuse me	ṇgnōdhi
sorry/pardon me	parke
I am sorry	kesdō
don't worry	mĕ koisāje
good bye, darling	sļwĕj', prijótmā
good luck	kobom ěsúm
yes	dā / jāi / ne-(ghi)
indeed	nem-pe / ita tod
no	nĕ / nei
alright	tagteĩ
attention	probhoudhos
where is the door	qodhei dhworis?
here is what I asked	kei esti jod pṛkskóm
what is this?	qid (esti) tod?
this is food	pitús tod (esti)
what time is it?	qid esti daitis?
it is true	wĕrom tod
very good / the best	bhodistom / bhodsmom

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everything is alright	solwā sū (ágontor)
how old are you?	qótobhos átnobhos tū?
I am ten years old [ten born I am]	dekṃ gnātós esmi
do you speak European?	bhāsoi [bhasoi] an Eurōpājóm?
I speak a little	páukolom bhāmoi
I don't understand you	nē tewom peumi
tell me what you think	seqe moi qid kṣējāsi
I don't know	nē woida
shut up	takēj' [takėje]
sit down	sisde (sg.) / sísdete (pl.)
come here	cemj' [cemje] kom-ke
I'm going right now	nū ghenghō kom
what do you do or study?	qóterom ghléndhesi an drájesi?
are they married?	esti lachējonti?
I love women	lubhējō pelū dhémonāns / cenāns
write here your address	deikom skreibhe kei tewe

I live in the Main Street	Stoighei Magnéi ceiwō / trebhō
Lucrecia and I are friends	Lukretjā egó-qe ámeikes smes / ámeike swes
the cat mews in the garden	kattā ghortei mijaluti
the dog bites the cat	kattām mordéjeti kwōn
the woman walks with the cat	kattā dhémonā alájetoi
I see the head of the cat	kattās dṛkō ghebhām
Where is the train?	qodhei esti douknom?
the train is here	douknom (esti) kei
I want to eat fish	welmi piskim ghostum
do you want to sleep with me?	welsi mojo sweptum?
yes, I wish for it	jāi, moksi gherijai
no, you stink / smell bad	nē, smérdesi / bhragrājesi dus
it is hot! [how hot is it!]	qām kaléjeti!
it is cold! [how cold is it!]	qām srīgējeti!
I go swimming to the lake everyday	laqom eimi dhochei snātum qāqei

can I smoke?	moghō (an) smeughtum?
may I smoke? [<i>is it possible (for me) to smoke?</i>]	moghnjom meghei an smeughtum (esti)? esti moi smeughtum?
smoking prohibited	smeughtum wétānom
happy new year	ghoilom newom atnom
I agree with everything that you explained me yesterday in your mail	solwei manjō kom, jod dhghjéstenei bheri dewtlei peri
I thank you for the interest that you always have to carry on	méndhesi prijējō te, jobhi áiwesi prōd steightum awējāsi

online at <<http://dnghu.org/indo-european-language/>>.

NOTE. About the sentence “*is it possible to smoke?*”, constructed with the verb **esti**, compare Lat. *est* in Ovid (*Metamorphoses* Book III, 479) *quod tangere non est*, “*as it is not possible to touch*”; also Virgil *est cernere*, “*it can be seen*”; also, for Gk. *estì(n)*, “*it is possible*”, compare Lucian (*The Parliament of the Gods*, 12) ἔστιν, ὃ Ἑρμῆς, “*is it possible, Hermes*”.

MIE language lessons with common vocabulary and sentences are freely available

I.3 LATE PIE LEXICON

This lexicon is available online with regular updates at the automatic dictionary and translator <<http://indo-european.eu>>. For detailed etymological information, see Appendix III.1. That information is also available online at <<http://dnghu.org/en/proto-indo-european-language/>>.

The Late PIE etymological *schwa* (* θ) represents an older (PIH) laryngeal, which was later pronounced differently in each dialect. That laryngeal schwa is omitted if it is word-initial and appears alone, as in PIH **H₃bhruH*, or if the preceding syllable has full vocalism, as in **klamrós*, but it is written elsewhere, as in **p θ ter-*. For more on this, see Conventions Used in this Book, and § 2.2.10.

I.3.1. ENGLISH - PIE DICTIONARY

For detailed information on the Proto-Indo-European words, its etymology, usage, root and meaning, see the following section, Appendix I.3.2.

English	PIE
a bit	pau
abandoned	ermos
abound	spreigō
about	per(i), per(ti)
above	upsi
absent	apowésentis
absolute	permós
absolūtus	permos
abundant	chonós
abuse	dhebhō

abyss	ṛbhudhnóm
acarian	koris
accelerate	spreudō
accordance	sṃoitis
acorn	célṛdis
acorn	medjom
acquire	potijai
acquit	luwō apó
activate	kjējō
active	strēnwos
Adam's apple	croghos
address	deikos
adhere	gleibhō
adjust	árarjō
administrate	médneumi
adorn	mondō
adorn	peikō
adult	altjos
advanced	prokos
advantage	(sí)stāmi antí/prāi
advise	plākējō
affirm	ḡgjō
afflict	ághneumi
after	pos(ti)
afterwards	pósteri
again	ati
against	komtrōd
against	proti
aggravate	odáugjai
agile	ágḑlis
agitate	dhúneumi
agitate	kreutō
agitated	kighrós
agnus castus	weitēks
agonise	clnāmi
agreement	koimā
agreement	meitrom
air	porā
alas	troughi
alas	wai
alder	álesnos
alder	wernā
alike	jota sei
alive	cīwós
all	oljoi oljai olja
allergy	dedrus
alleyway	smoughos
allied	soqjos
along	práiteri

A GRAMMAR OF MODERN INDO-EUROPEAN

already	jāmi
also	toqe
altar	āsā
always	áiw(es)i
ambush	énsēdjom
ancestor	strutjos
ancient	prīskos
and	atqe
and	enim
and	joqe
and	qe
and also	itaqe
and not	neqe
angelica	qondhros
angle	qedos
animal	bhugos
animal	cīwotos
animal	smalos
ankle	spr̥os
announce	kárkarjō
annoy	peigō
annoyance	oghlos
annoying	mōlestos
annoying	trudsmós
anorak	kroknoś
another	onjos
another	aljos
anounce	m̥lgājō
ant	m̥rmeikā
antique	ántijos
anus	ghodos
anyone	qisqis qidqid
apart	sēd
apart	s̥ni
apparent	wīndos
appear	m̥lōskō
appearance	widā
appease	sēdājō
appease	litājō
appendix	plighā
apple	ábelos
approach (to)	p̥lnāmaí
arch	weītō
arch	wekō
ardour	aisdhom
arid	kserós
arise	kenō
arm	armos
arm	bhāghus

arm	dóusontos
armour	twakos
army	korjos
army	strātos
around	ambhí
arrangement	stāmp̥
arrival	ghētis
arrive	ṛkneumi
arrive	ghēmi
arrow	kēlom
art	artis
article	melmp̥
articulation	anglos
articulation	k̥ṛksos
as	qām
ash	āsos
ash	kenēs
ashtre	oskos
ashtree	bhr̥ksnos
ashtree	ósonos
ask	p̥r̥kskō
asp	apsā
aspect	spekjēs
aspire	wénāmoi
ass	kūlos
assigned	pr̥tós
asunder-legged	wāros
at	ad
at hand	prāighesto
at least	ge
at that point	tām
ate	ghosóm
attribute	bhagō
attack	w̥rgos
attack	wendhō
attack (to be in)	w̥rgējō
attention	pr̥óbhoudhos
auger	téredhrom
augur	kailom
aument	āugējō
aunt	ámetā
aunt	mātérterā
autumn	osēn
avoid	leinō
awaken	bhoudhējō
axe	áksijā
axe	bheitlom
axe	sekūris
axe	tekslā

Appendix I: Indo-European in Use

axle	aksis
babble	batā
babble	plabrājai
babble	lalājo
baby	dhēļjos
back	awou
back	gurnos
back	retrōd
backbone	wṛaghmn
backwards	postrōd
bad	dus
bad	elkós
bad	upelos
badger	brokos
bag	bholghis
bag	kórukos
bald	kalwos
ball	ghroudos
ball	gugā
ball	orghis
band	seimā
bandy-legged	walgos
banquet	daps
barbaric	bálbalos
barefoot	bhosos
bargain	wesnējō
bark	baubājai
barley	ghórdejom
barley	jewom
barrel	dōļjom
basin	wļghis
basket	kistā
basket	qasjos
basket	sportā
basket	woidlos
bast	lubhros
bath	lowtrom
be	bhewmi
be	esmi
be afraid	timējō
be allowed	likējō
be angry	eisāskai
be annoying	pigējō
be bitter	geigō
be born	gnāskai
be bright	spļndējō
be broken	lugējō
be cold	alghējō
be cold	srīgējō

be concealed	lōtējō
be curved	wijējō
be delayed	stptējō
be dry	āsējō
be empty	ghrējō
be expensive	dāpnāmi
be experienced	kaldējō
be far	(sí)stāmi apó
be favourable	bhðwējō
be fit	wļējō
be flat	lðpējō
be followed	swemōr
be furious	sājō
be high	kelsō
be hot	kļējō
be interested	mendhai
be loaded	gemō
be necessary	opos esti
be pregnant	kuwējō
be proper	dekējō
be rotten	pūtējō
be scratched	kṛsējō
be sitting	sedējō
be situated	ēsmoi
be strong	wegō
be strong	wigējō
be swollen	oidējō
be swollen	tumējō
be thirsty	tr̥sējō
be used	eukō
be violent	chr̥jō
be visible	dr̥kjai peri
be warm	tepējō
be wet	mðdējō
be withered	mṛkējō
beak	rōstrom
beak	sroknā
beam	tegnom
beam	trabhis
bean	bhabhā
bear	ṛtkos
bear	bhermi (bherō)
beard	bhardhā
bearing	bhṛtis
beast	ghwerā
beast of burden	jóugsmṇtom
beastly	ghwērínós
beat	wļeisō
beat up	orgājō

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beautiful	chaisos
beautiful	wēmos
beaver	bhebhros
because	jod qid
become	swēdhskō
accustomed	
become vigorous	kíkeumi
bed	spondhā
bee	bheiq̄lā
beech	bhāgos
been	bhūtós
beer	álum̄
beer	kremom
beer	sudhjom
before	antí
before	prāi
before	p̄ros
before dawn	anksi
befriend (to)	nínāmi
beget	gignō
begird	jósneumi
beguile	dreughō
behind	apóteri
belch	reugō
believe	kréd̄dhēmi
belly	tarsós
belong	ainō
beloved	kāros
belt (for safety)	wérunos
bend	greugō
bending	n̄ptos
beneficial	síslāwos
benefit	lawō
benefit	lawtlom
bent	kambos
bent	pandos
berry	morom
beseech	prekō
besides	perom
besiege	sedējō ambhí
betrothed	sponstós
better	bhodjós
between	énteri
beware	k̄dwējō
biceps	kiskā
big	crotsos
big	m̄dgnos
big eater	corós
bile	cheldi

bilge out	semjō
billow	sredhō
bind	nedskō
bind	bhendhō
bind	kekājō
bind	ligājō
bind	reigō
bind	síneumi
biped	dwipods
birch	bherāgs
bird	awis
bird	petsnós
birth	gentlom
bit	akmā
bite	denkō
bite	mordējō
bitter	bhidrós
black	ātros
black	dhoubhús
black	k̄rsnos
blackbird	meslā
blade	akjēs
blame	onējō
blaze	sweidō
bleach	kormnos
bleat	bebājō
bleat	blēkājō
blind	andhos
blind	kaikos
blister	kaldos
blister	wenseikā
block	mersō
blood	ēs̄
blood	kruwós
bloom	bhlosējō
blow	bhesmi
blow	bhlāmi
blow	(í)wēmi
blow out	munkō
blue	ghlastos
blunt	bhukús
boar	apros
boar	tw̄rkos
board	ploutos
boast	bhledō
boast	ghelbō
boat	plowós
bodkin	ēlā
body	k̄rpos

Appendix I: Indo-European in Use

boil	bherwō
boil	seutō
bold	dhṛsus
boldness	dhṛstis
bone	ostis
border	krēqā
bore	bhorājō
born	gnātós
both	ambhou
bought	qritóm
boundary	eghr
boundary	margōn
bovine	cowijós
bow	arqos
bowels	gudom
bowl	tekstā
box	kōpsā
boy	kelots
boy	maqos
boy	póweros
bracelet	weliks
brain	kerðsrom
bramble	dristos
bran	tolkos
branch	kankus
branch	osdos
branches	cespis
brass	ajos
brassy	ájesnos
brave	tregsnos
breach	bhernā
bread	bharsjom
break	bhr̥ṅō
break	bhrúsñāmi
break	rumpō
break off	rewō
breast	bhrusos
breath	anðmos
breath	spoisnā
breathe	etō
breathe	pneusō
breeze	áweljā
brew	bhrewō
briar	ksentis
bridge	bhrēwā
bright	bhānús
bright	leukós
brilliant	argós
bring out	dhraghō

broad	plātús
brooch	bharkos
brooch	dhéicodhlā
brood	aglā
brook	apnis
brook	reiwos
broom	aksteínos
broom	swoplom
broth	jeus
brother	bhrātēr
brother-in-law	daiwēr
brotherly	bhrátrijos
brother's son	bhrātreínos
brown	bhrounos
bud	gnoubhos
bug	keimēx
building	demos
building place	dmpedom
bull	porsis
bull	tauros
bulrush	bhrughnos
bulrush	joinkos
bumblebee	krāsrōn
bundle	bhaskis
bundle	dhrighsós
burden	bherm̥
burglar	tājots
burn	aidhō
burn	smelō
burn	dhechō
burn	eusō
burn	konkējō
burn	kremājō
burnt	ustós
burst	sp̥ṛgō
burst in	skekō
bury	ghrebhō
bury	sepēlijō
bush	bhrutēks
bush	dousmos
bush	q̥rsnos
but	mō
butter	arwā
butter	ghertom
butterfly	pāpeljos
buttock	klounis
buttocks	pougā
buy	qrínāmi
buy	selō

A GRAMMAR OF MODERN INDO-EUROPEAN

buzz	susājō
cabbage	kaulis
cable	sneurom
cable	winis
cackle	grakijō
cackle	kaklājō
calculate	deljō
calf	loigos
calf	wetlos
call	ghawō
call for	tolājō
calm	sēknis
caluum caput	gholwā
camel	wļbhontis
camp	kastra
can	moghō
cancer	ghñdhus
cannabis	worgjom
canopy	skostrom
captive	kōptos
car	woghnos
carbon	kṛdhōn
caress	ghneumi
carrot	mṛkā
carry	portājō
carry	weghō
cart	kṛsus
carve	skalpō
carve	skreidō
carve	smeidhō
castle	kasterlom
castrate	skerdō
cat	kattā
catch	kōpjō
cattle	ármñtom
cattle	peku
cauldron	qorjom
cause	winsō
cause to slope	klínāmi
caution	wadhis
cave	antrom
cave	speqos
cavern	kowṛ
cavity	celom
cedar	bhrosdhos
ceiling	tegtom
cellar	gupā
cereal	dhōnā
cereal	jéwornjom

cerebellum	mosgom
certain	enis
certainly	dā
certainly	ghi
certainly	ka
certainly	smā
certainly	toi
chaff	akos
chain	katēsna
chain	seinus
chair	sedlā
chalk	krētā
chamber	kēlā
chance	wikis
change	mejnō
character	mōs
charge	merkēds
charioteer	ṛots
chatter	blatsājō
cheap	wésolis
cheat	meugō
cheer	owājō
cheese	kwatsos
cheese	tūrós
cherry tree	kornos
chest	pegtos
chest	ṛklā
chew	gjewō
chew	mñtō
child	pūpos
child	putlom
chin	mñtom
chin	smekslā
chirp	bhrigijō
chirp	titijō
choice	wolos
choke	bhleusō
choose	wolējō
choose	opjō
circle	kirkos
circuit	ámhbinom
circulate	qelō
citizen	keiwis
city	polis
ciurve	qelpō
civil	kéiwijos
clack	glokijō
claim	qínunmoi
clang	klagjō

Appendix I: Indo-European in Use

classical	ántitjos
clean	mūdnós
clean	powējō
clean	pūtós
clean	pewō
cleanse	sꝛpijō
clear	aiskrós
clear	bhlaidos
cleave	bhindō
close	klawdō
close	wꝛeumi
close	wꝛijō
close to	pꝛa
closed	klawstós
cloth	westis
cloud	nebhis
clown	skoirsās
club	baktlom
club	lorgos
club	seikā
club	wísogā
coal	oncōl
coast	molā
coat	płtom
cockoo	kukūlós
cockoo	kukulājō
cockroach	blaktā
cold	kiklós
cold	ougros
cold	srīgos
collapsed	rwtós
collar	monīli
collect	karpō
collect	legō
collection	kómāglom
collection	qejtis
colony	ápowoiks
colorant	keimos
colour	kiwos
colour	wornos
coloured	pꝛqos
colt	kábꝛlos
colt	kánkestos
comb	kesō
comb	pekō
comb	pektēn
comb	pektō
come	cemjō
come back	ghighējō

come out	pārējō
command	judhējō
commission	upóqrijom
commit	mꝛdōmi
common	kómmoinis
communicate	mesgō
community	kommoinitáts
compasses	kirknos
compete	sperdhō
complain	qésai
complete	kómplēnos
complexed (to be)	wꝛghējō
compose	qejō
comprehend	tꝛējō
conceive	dídjāmi
concession	lētis
concubine	pareikā
condense	stejō
condition	dhēmꝛ
conducted	elóm
conflagration	dáwetus
connect	serō
conscience	kómwoistis
consider	mꝛjō
consideration	qeistis
consort	komjugs
conspiracy	jālos
conspirator	jōrós
conspire	jáneumi
contain	ꝛkējō
contend	bhogājō
contend	wikjō
contrive	smudhnō
convex	weksós
convey	ínekmi
cook	peqō
cook	peqťor
cook	poqós
cooked	peqťós
cooking	peqťis
coot	bhelēks
copy	áimneumi
core	pūrós
corn	niktis
cornice	ghrendhā
corruption	tādhis
cost of a feast	dapnom
couch	stālos

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cough	qostā
cough	tustijō
coughing	tustis
courage	nantis
course	drewā
course	kṛstus
court	kómwoirjom
courtyard	dhworom
cousin	jentēr
cover	skemō
cover	skeumō
cover	skeutō
cover	tegō
covering	skūtos
cow	cows
cow	lāpos
cow	wakkā
crab	karkros
crack	reimā
crackle	krépāmi
cradle	gretlom
crane	çús
crawl	rēpō
crawl	serpō
crazy	dhwolnos
create	genesājō
create	krēmi
creature	teknom
creep	snðghjō
crest	kristā
crib	bhondhsā
crime	kreimṇ
crime	lōbā
crimpy hair	gouros
crook	bhogjos
crop	sasjom
cross	kreuks
cross	terō
crossbeam	ghlaghos
crow	korniks
crowd	plēdhwis
crowd	slougos
crown	grendjom
crumb	groumos
crumb	smeikā
crumble	dhruhbhō
crumble	bhrijājō
crush	mṛtājō
crush	pīnsō

cry	dhrensājō
cry	wāghijō
cry	kreugō
cry	krigā
cry	reudō
crying	roudos
cudge	dolājō
cuirass	bhrusnjā
cup	kalēiks
cup	koupā
curb	bhegō
curd cheese	grutis
curly	kripsos
curtail	sneitō
curve	witjom
curve	keubō
curved	kṃros
curved	kṛwos
cushion	qolkā
custom	swēdhus
cut	kaidō
cut	kretō
cut	sékāmi
cut	tmāmi
cut off	snadhō
cut off	spl̥tājō
cut open	bhrijō
cut out	drepō
cut out	treukō
dace	menis
dad	appās
dad	attās
dad	tātā
dam	roinos
damage	klādis
damage	pēmṇ
damage	wolsom
damp	bewō
dare	dhṛsō
dark	dhóncelos
dark	dhoncos
dark	dhuskos
dark	keiros
dark	m̥nejós
dark	morcos
dark	skeuros
darkness	recos
darkness	temesras
dart	golbhnos

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daughter	dhugtēr
daughter-in-law	snusós
dawn	ausōsā
dawn	áussketi
day	dhochos
day	djēws
day	djnos
day	latom
dead	mṛtos
dead	mṛwos
deaf	bodhrós
deaf	dhoubhos
dear	leubhos
dear	prijós
death	chentis
death	dheunos
death	mṛtis
death	neks
debt	dhlēghlā
deceive	chlnō
deceive	dhwerō
deceive	melsō
decide	skidjō
decline	sterbhō
decree	dhedhmós
deep	dhubús
deer	kerwos
defame	klwījō
defecate	ghedō
defecate	kakkājō
defect	smeros
defective	mṛkos
defence	wertrom
defend	mághneumi
deflect	sklneumi
deity	deiwtāts
delay	morā
demand	kupjō
demon	dhwosos
den	bhōljóm
dense	tegús
dense	tṛkros
densify	stoipējō
depart	oighai
departure	proitis
deposit	loghos
depressed	neiwós
desert	jēlom
desert	teusqa

deserve	mṛējō
designate	mātējō
desire	aisskā
desire	gherijai
desire	awējō
desire	chelō
desire	smegō
desire	wekmi
desire	wenō
desire eagerly	jntō
destitute	awtjos
destroy	dheukō
destroy	nokējō
destroy	olējō
destruction	dhchitis
detergent	mūdlom
development	augos
devotion	krōbhatus
devour	sleugō
devour	cerbhō
devour	crājō
dew	dolghos
diarrhea	dhorjā
dick	bhṇghus
die	mṛjai
died	walóm
difference	kritis
different	íteros
dig	bhodhjō
dig	kánāmi
dig out	teukō
dim	bhlendhos
dimension	mētis
dinner	kersnā
dip	wṛonkis
direct	dhṇghus
direct	regō
direction	wertmōn
dirt	kóqros
dirt	qoinom
dirty	coudhros
dirty	salús
dirty	keqō
dis-	rēd/re
disabled	mṛkos
disgrace	ghálerom
disguise	mengō
dish	pēlwis
dishonour	stupróm

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disk	orbhis
dismantle	dhruslijō
dispersed	rārós
dispossession	spoljom
distaff	qolus
distance	apóst̃tis
distribute	nemō
dive	cadhō
divide	kljō
divide	weidhō
divide up	daimoi
do	dhídhēmi-dh̃k̃jō
do harm	ghudjō
do harm	kepō
do military service	dhreughō
do not?	nom nē
docile	glegos
doctor	médodiks
dog	kolignos
dog	kwōn
domain	dm̃seghr̃
dome	krūtis
door	dhworis
door	wēr
door-bar	rk̃slom
double	dwoplos
doubt	okējō
dough	reughm̃
dough	taismos
dove	dhombhos
dove	kólumbhos
down	nī
dowry	dōtis
drag	selkō
drag	deukō
drag	traghō
drag	wersō
drag away	tenghō
drapery	drappos
draw	streigō
draw tight	stringō
dream	ónerjos
dream	swepr̃
dream	swopnjom
dream	swopnjājō
dregs	suljā
dress	westijō
dress	wosējō

drink	ēghwr̃
drink	pōtis
drink	pibō
drinker	pōtōr
drinking	pōnom
drip	seilō
drive	enkō prō
drizzle	aghlóws
drone	bhoiqos
droop	lāgō
drop	bñdus
drop	dhrubhtis
drop	leibs
drop	spakos
drum	bámbalos
drunken	ēchrjos
drunken	tēmos
dry	kserós
dry	sisqos
dry	susdos
dry	tr̃stos
dry	tr̃sus
dry	torsējō
dry skin	sterbh̃njom
duck	añts
dust	pelwos
duty (religious)	dhēs
dwell	trebhō
dwelling	bhūtá
dwelling	westus
eagle	éroros
eagle owl	bughōn
ear	ousis
early	ájeri
earth	dheghom
earth	p̃táwija
earth	tersā
eastern	áusteros
easy	reidhos
eat	áknāmi
eat	edmi
eat	weskai
edge	ōrā
edge	bhrenō
eel	ellus
effort	molos
egg	ów(ij)om
eight	oktōu
eighth	oktowos

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eject	jðkjō
elastic	tmpus
elbow	ōlnā
elder	edhlos
element	skōlos
elm	olmos
elm	woighos
embank	klāmi
embroidery	snētjā
embryo	geltis
embryon	crebhos
employee	dhmos
empty	wāstos
empty	wōnós
empty	ausijō
enact	sankijō
encamp	kastrājō
encircle	gherdhō
enclose	twerō
enclosure	ghordhos
enclosure	kaghos
enclosure	odhrom
enclosure	wregis
enclosure	wrtom
encouragement	ghorėjai
end	antjom
end	bendā
end	dhigsnis
end	termēn
endeavour	rōdhjō
endure	tlāmi
enemy	nemots
enhance	bheljō
enjoy oneself	terpō
enjoyment	terptis
enlarge	augējō
enough (to be)	dheughō
entrails	sorwā
entrails	sternom
entrance	jānuwā
entrance	ōstjom
envelope	wéltrom
environment	bhewtlom
envy	rsjā
equal	somós
equipment	kómopjom
equipped with	went
erect	ghorsējō
ermine	kormōn

escape	skeubhō
estimate	qíqeimi
eternal	aiwós
eternal	jucis
eternity	áiwotāts
even	aigos
even	eti
even	gladhros
evening	wespros
evident	gnōros
evil	skelos
example	deikmðn
excavator	kernos
excellent	bhodrós
excellent	wēsus
excepted	ektós
excess	údcris
exchange	mojnos
exchange	mejō
exchange	moitājō
excite	sprewō
exclusive	káiwelos
exhaustion	dhðtis
expect	welpō
expel	(j)jēmi
experience	perijō
expert	suwids
explode	bólboljō
expression	bhātis
expression	weqtlom
extend	spáneumi
extend	spēmi
extend	tendō
extend	tenjō
extend	tensō
extend (to)	tonējō
extended	próstōrnos
extension	stṛnos
external	éksteros
extinguish	césneumi
extraordinary	ṛswodhros
exuberant	jṇdros
eye	oqos
eyebrow	bhrūs
face	enīqā
fact	dhētis
fair weather	qoitṛós, koitṛós
fall	polnō
fall	kadō

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fall asleep	swōpijō
fall asleep	dṛmijō
fall down	piptō
fall into	ghrewō
fallow	polkā
false	mļjos
family	gentis
family	wenjā
famine	nōunā
famous	klūtós
fan	bhlādhrom
fan	prējō
fancy	lðskējō
far	dew
far	porsōd
far (from)	qeli
farewell	ṛtís
farm	woikslā
farmer	agróqolās
far-reaching	sītús
fart	pesdō
farther	peros
fashion	teksō
fastening	apmṇ
fat	lajos
fat	pīmós
fat	piwōn
fat	tṇghus
fatality	moros
father	pðtēr
father-in-law	swekros
fatherland	pðtrjā
fatherly	pðtrjos
fault	agos
fault	loktos
fault	mendom
favourable	bhōwijós
fear	pðwējō
fear	āghar
fear	bhíbheimi
fear	dweimi
fearful	dwoiros
feast	westos
feast	wļdǎ
feather	peróm
feather	petsnā
feather	plousmā
feather	pornós
feeble	térunos

feed	pāskō
feel	awisdhijō
feel	qeisō
feel ashamed	aichesājō
female	dhémonā
fence	saipis
ferment	jesō
fern	pratis
ferret	wéiwersā
fever	tepnos
field	arwom
field	maghos
fierce	saiwos
fierceness	tonslis
fifteen	penqdekṃ
fifth	penqtos
fifty	penqadkṃta
fig	bheikos
fight	katos
fight	streudō
file	sleimā
fill	(pím)plēmi
fill	plṇāmi
filling	plēmṇ
filling	plētis
filth	mergis
finch	spingjā
find	(wí)wermi
find by chance	nṇkskai
find out	windō
finger	cistis
finger	dékṃtulos
finger nail	onchis
finish	cerjō
fire	egnis
fire	pāwṛ
firm	omos
first	prāmos
first	prāwos
first	prīsmos
first (of two)	próteros
fish	piskis
fist	penqstis
fist	pougnos
five	penqe
fix	pastos
flake	bhlokos
flame	bhlðgsmā
flame	bhokos

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flask	óbrusjā
flat	lergos
flat	plākos
flat	plānos
flat-footed	plautos
flatness	pltnos
flax	leinom
flea	puslēks
fleabane	dhwestus
flee	bhougājō
flee	bhugjō
fleece	gnebhis
flexible	lugnós
flight	bhougā
flimmer	merkō
flimmer	míkāmi
flood	pleudō
floor	plārom
flour	melwom
flour	mlātóm
flourishing	ghlustis
flow	plewō
flow	sorā
flow	bhleucō
flow	mejājō
flow	srewō
flow	weisō
flow down	stelghō
flower	bhlos
flower	bhlōtis
fluoresce	bhelō
flush away	rínāmi
flutter	spñdō
fly	muskā
fly	petō
fly	clājō
foal	kurnos
foam	spoimā
foenum	koinos
fog	kalgōn
fog	nebhla
foggy, to be	wapējō
fold	cijā
fold	bheugō
fold	plékāmi
follow	seqai
food	pasknis
food	pitús
food	westā

foot	pods
footprint	lorgā
footprint	pedom
forbid	wētāmi
force	stolgos
force	tewos
force	twenkō
force in	treudō
ford	pr̥tus
forearm	lakertos
forehead	bhrówntis
foreigner	ghostis
foremost	pr̥jós
forest	kselwā
forest	nemos
fork	ghabhlom
fork	mergā
form	magō
form	pr̥ptus
formerly	ōlim
fortieth	q̥d̥twr̥ádkm̥t̥m̥os
fortification	karkar
fortify	moinijai
forty	q̥d̥twr̥ádkm̥ta
forwards	pr̥ō(d)
fountain	awā
fountain	aw̥
fountain	dhontis
four	q̥d̥tw̥res
four days	q̥d̥tw̥rd̥jówijom
four each	q̥d̥tr̥usnos
four hundred	q̥d̥tw̥rk̥m̥tos
four hundreth	q̥d̥tw̥rk̥m̥t̥ém̥t̥m̥os
four times	q̥d̥tr̥us
four years	q̥d̥tw̥rat̥njom
fourteen	q̥d̥tw̥r̥dek̥m̥
fourth	q̥d̥tw̥r̥tos
fox	wolpis
foxglove	sp̥jonos
fragment	bhr̥oustom
fragrant	swekos
framework	wīt̥jā
fraud	dolos
fray	sremsō
free	léudheros
free	nosējō
freeze	pr̥unsō
frequent	menghos
friend	ámeikā

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friend	amēiks
fringe	antjās
from	apo
from	extrōd
from there	imde
from there	totrōd
from this side	kina
from upwards	dē
from which	jomde
frost	pruswá
frozen snow	kernós
fruit	ágrēnom
fruit	bhreugs
fry	bhagjō
fry	bhreicō
frypan	landhom
fuck	eibhō
fuel	dawtis
fugacious	tokwós
full	plēnós
full	plētós
fundament	upósēdjom
fungus	swombhós
furniture	endósēdjom
furrow	prká
furrow	solkos
further	ólteros
furthest	óltmos
gall	bistlis
gape	ghjājō
garden	ghortos
garlic	álujos
garlic	kesnus
garment	togā
gather	gercō
gather	katsājō
gaul	galnos
gaze	qekō
gender	genjos
gentle	klisrós
germ	genmṇ
get angry	kṛdijai
get cumulated	derghō
get dressed	ewō
get drunk	pojējō
get dry	tersai
get encrusted	kreupō
get in a space	telpō
get injured	steugō

get tired	kmāmi
gift	dōnom
gird	kingō
girl	maqā
give	(dí)dōmi
give birth	prijō
give joy	sōlājai
give opinion	one's tongējō
glade	loukos
glance	augá
glare	swelō
glass	pōtlom
glide	sleidhō
glimmer	bherkō
glimmer	ghlēmi
globe	globhos
gloomy	mauros
glory	klewos
glove	ghesris
glow	kandō
glowing ash	geulom
glue	gloitṇ
gnat	kūleks
gnaw	ghrendō
gnaw (to)	gnāmi
gnaw away	trowō
go	eimi
go	ṛskai
go aside	greubhō
go away	cícāmi
go down	keidō
goat	bokkos
goat	dighā
goat	ghabhros
goat	kaprā
goat	kapros
goatish	ghaidīnós
god	deiws
goddess	deiwā
godly	déiwijos
gold	ausom
gold	ghltom
golden	ghltóns
good	bhilis
good	dwenos
good	ēsús
good	mānos
good	probhws

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goos	ghansōr
grain	grānom
grand-daughter	neptis
grandfather	awos
grandfather	dhēdhjos
grandmother	anus
grandmother	áwija
grandson	nepēts
granny	annā
grant	lēmi
grass	ghrāsmṇ
grass	ghrāsom
grave	bhodsā
gravel	geisā
greasy	liprós
green	ghelwos
grey	kasnos
grey	pálowos
grey	plowós
grey	rāwos
grind	ghrewō
grind	melō
groan	onkājō
groin	ili
groin	ṇcén
groom	pusbhis
ground	bhudhnos
ground	swólejā
ground	telsus
group	kerdhos
group	qelos
grow	krēskō
grow	ṛdhjō
grow fat	peidō
grow thin	kerkō
growl	ghelijō
grown	augtós
grown	grṇdhís
grumble	ghremō
grumble	wṛṇgai
grunt	bhremō
grunt	grundijō
guardian	sṛwos
guerrilla	bhogā
guest	ghóstipots
guile	astus
guilty	sontis
gull	medgós
gullet	clā

gulp	slrgjō
gum	gengā
gush	skatējō
gush up	bhrendhō
hail	grōdis
hair	ghaitā
hair	kaisrom
hair	kerom
hair	lowā
hair	pilos
hair	rewmṇ
hair	welnos
hair	wondhos
hair (strong)	saitā
hairdresser	tonstór
half	sēmi-
hall	werstidhlom
ham	persnā
hammer	matlā
hammer	ordhos
hand	ghēsṛ
hand	ghestos
hand	mṇus
hand	wṛonkā
handle	ansā
handle	ghetlā
handle	skāpos
handle	qṛeumi
hang	lembō
hang	pendō
happen	leidō
hard	kartús
harm	skodhos
harn	wṛeinā
harrow	ókētā
harsh	drismós
harvest	ḡsnātis
haste	spoudā
hasten	bhūsājō
hasten	skegō
hatchet	tōkslos
hate	odjō (ōda)
hatred	ōdjom
have	eikō
have fever	cerō
have taste	sḡpijō
have wrinkle	grbējō
haven	kopnos
hawk	astris

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hawk	ōkúpteros
hazel	kósolos
hazelnut	árusā
head	ghebhlā
head	kaput
head	kersṛ
head of cereal	speikā
head towards	wergō
health	kóilutāts
healthy	jekos
healthy	koilús
heap	struwis
hear	kluwējō
hear	gheusō
hear	kļneumi
hearing	kleumṇ
heart	kṛdi / kṛdjom
hearth	aidhis
hearth	chornos
heat	cheros
heat	olējō
heath	kaitom
heave	erō
heaven	kémelom
heavy	cr(āw)ús
heavy	crðtos
hedgehog	eghjos
hedgehog	ghēr
heel	kalkis
heel	persā
hello	alā!
helmet	kelmos
help	jewō
hen	kerkos
henbane	bhélunā
herb	lubhjá
herd	gregs
herdsman	cówqolos
herdsman	kerdhjos
here	kei
heron	árdejā
hesitate	kenkai
hide	kēlājō
hide	keudhō
hiding place	kūlā
high	altós
high	bhrghos
high	úperos
high	úpselos

hill	kolnis
hill	montis
himself	se
hinge	kṛdén
hint	apóteros
hip	koksā
hip	londhwos
his	séwijos
hiss	streidō
hit	bhenjom
hit	kawdō
hit	kawō
hit	bhðtjō
hit	bhlagō
hit	bhleicō
hit	bhutjō
hit	slakō
hit	steupō
hold	potējō
hold	seghō
hold (to)	jemō
hole	lugjā
hollow	dholos
hollow	dhónejā
hollow	ghéwejā
hollow	kowos
hollow out	skerbhō
holy	noibhos
holy	qentos
holy	sakros
home god	lāōs
honey	melit
honour	aisdai
honour	mðgtājō
hoof	kophos
hook	ankos
hook	kenkos
hook	khamos
hook	onkos
hoopoe	ópopā
hope	spes
horn	kṛnu
hornbeam	grbeinā
hornless	kemos
horse	ekwos
horse	kabōn
horse	markos
hostage	gheislos
hot	kļtos

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house	domos
house	weiks
housemaster	esos
hovel	cꞛcestjom
hover	prewō
how	jota
how	qālis
how	qota
how great	qáwnptos
how many	qot(j)os
howbeit	aw
howl	ululājō
hum	kemjō
human being	dhghomōn
humble	wailos
humiliate	neidō
hump	gibbā
hundred	kꞛptom
hunger	dhꞛnis
hunger	ghrēdhus
hunt	woitā
hunt	(wí)weimi
hurry	sperghō
hurry	speudō
hut	kleitis
hut	koutā
I	egō
ice	eisom
ice	gelu
ice	glðgjēs
ice	jegis
icicle	krustā
icicle	stejsjā
ignorant	ꞛwidis
ill	aigros
illuminate	bháneumi
illuminate	loukējō
immediate	ūdhús
immediately	kitōd
immortal	ꞛmrótijos
impel	peldō
important	swērús
impregnate	tengō
impression	włtus
in	en
in excess	ꞛdhi
in the middle	meti
in the morning	prōi
incise	ghelō

incision	bhr̥mā
incite	ꞛghējō
incite	trenkō
inclined	nīqos
include	glembhō
incompetent	duswids
increase	augmꞛ
increase	augō
indeed	gar
indeed	qidpe
indication	deiktis
induce (to)	woghējō
inere	densō
inferior	níteros
inflammation	dheghwis
inflate	bhleidō
inflate	pusjō
inform	steumi
inheritance	orbhjom
insect	empis
inside	endo
inside	entós
inside	ētr̥
insipid	merwos
inspect (to)	skewō
insult	pējō
intellect	menmꞛ
intelligence	sꞛstus
intelligent	glēkis
intend	mꞛsjai
interest	dhēnos
interior	ennós
internal	énternos
internal	énteros
interval	énterom
intestine	énteros
intestine	ghoros
intestiones	routos
invert (to)	wortējō
investigate	windō peri
invisible	eksoqs
invoke	kiklēs-kō
iron	īsarnom
irritate	prousi-jō
island	enslā
ivy	khéderos
jaws	gombhos
jaws	gopos
join	jungō

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joint	artus
joint	koubos
joke	ghloumos
joke	ghleumi
journey	itājō
joy	gaudhjom
joyful	ghoilos
joyful	rōdos
judge	jewesdiks
juice	sapos
juice	soukos
jump	rebhājō
jump	dhṛnumoi
jump	leigō
juniper	lentos
juniper	toksos
just	jówestos
keel	kareinā
keep	bherghō
keep	kadhō
key	klāws
kidney	negrhōn
kill	nékāmi
kin	genos
kindness	prósēdjom
king	regs
kingdom	regnom
kingly	regjos
kiss	kusis
kiss	sówijā
kiss	bhusājō
knead	bheurō
knead	debhō
knee	genu
knee	teupō
knock	bheldō
knot	nōdos
knot	osbhos
know	(gí)gnōskō (gnōwa)
know	woida
know	skijō
knower	gnōtór
knowing	woidwós
knowledge	gnōtis
known	gnōtós
lack	egējō
lack	kðsējō
lack	meitō

ladder	skandslā
ladle	trowā
lake	ágherom
lake	laks
lamb	acnos
lamb	wṛēn
lame	klaudos
lamp	lapsā
land	agros
land	erwā
land	kampos
land	londhom
land	oudṇ
land estate	kāpos
landlady	dómūnā
landlord	dómūnos
lap	gremjom
lapwing	cówijā
large fish	sqalos
last	ópitjos
last	póstṃos
last year	péruti
late	lodi
laugh	khákhatnos
laugh	wṛisdējō
law	jewos
law	legs
lax	loksos
lay	leghos
lay	strāmp
lazy	leghskós
lead	nijóm
lead	plúwaidhom
lead	wedhō
leader	deuks
leaf	bholjom
leaf	leups
lean	gneichō
leap	rebhā
leap	kekō
learn	didkskō
leather	korjom
leather	letrom
leave	linqō
leek	prsom
left	laiwos
left	soujós
left-handed	skaiwós
leg	kanmā

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leg	krous
legal suit	stlitis
legbent	watjos
legitimate	tnktos
lend	gherō
lend	loiqnom
length	dļlngthō
leprosy	trudskā
less	mínusi
less	sétjosi
lessen	sewājō
leuer	weghtis
lick	linghō
lie	leghō
lie	keimoi
lie	kúbāmi
lie	leughō
lie open	pðtējō
life	cītā
life	cīvos
lifetime	saitlom
ligament	tenos
light	bhāos
light	drktā
light	leghús
light	leuks
light	leuksmņ
light	lņghros
light up	lukskējō
lighting	bhānom
like	lubhējō
likewise	itim
lily	leiljom
limb	karōn
lime-tree	leipā
lime-tree	pteljā
limit	bhrēunā
limp	skņgjō
line	streibā
line	strigjā
link	nedō
link	wédhneumi
lion	wlewā
lip	ghelnom
lip	lðbjom
lip	mēknos
liquid	latēks
liquid	serom
liquid	wļeiqos

liquid (to be)	wļiqējō
list	rēimņ
listen	kleumi
listening	kleutis
little	paukos
little owl	warnā
live	cejwō
lively	cīwāks
liver	jeqr
load	gomos
load	onos
lobster	kmertos
lock	ghrendhos
lock of hair	pulgā
lofty	mlōdhrós
long	dļlghos
long for	gheidhō
long hair	káisŗjēs
long-lasting	sēros
look	spekjō
look like	prepō
loom	weimņ
lot	koupnā
lot	teusmņ
lotus	kémeros
loud	torós
louse	lousēn
love	kāmi
love	stergō
love	wenos
love	amājō
love potion	wenēsnom
lovely	koimos
lower	nérteros
luck	toughā
lung	lðnchijóm
lung	pleumōn
lush	cīrós
luxury	ghloidos
lynx	louksos
magic	qdnos
magic	soitos
magic force	qedos
magnanimous	mðgnánðmos
magpie	peikos
maid	ándhesā
maim	skutājō
maintain	dļghējō
make afraid	tersējō

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make bitter	streubhō
make equal (to)	somējō
make hot	dhochējō
make money	pelō
make noise	bhelō
make noise	strepō
make up	dr̥k̥jō
male	wersis
mallow-plant	m̥lwā
man	mánnusos
man	wīrós
mane	krisnis
manner	koitús
mantle	sagom
maple	ákeris
maple	kleinos
march	cm̥tis
march	oimos
mare	ekwā
mark	ghronos
marrow	smerwā
marry	sneubhō
marsh	máreskos
mass	kōmos
mass	mōlis
mass	sloidhos
massacre	agrā
mast	masdos
master	potis
matching	dwískos
mate	bhendhros
mate	dāmos
mattock	sligōn
maxilla	genus
me	me
mead	medhu
meager	pēt̥los
means	moghtrom
measure	mestis
measure	metrom
measure	modos
measure	mēm̥i
measure	mēt̥ijai
meat	mēm̥sóm
meet	katsājai
meet	mimdō
meeting	komnom
melodious	bhendos
melt	tādhēs̥kō

memory	smemorjā
mention	m̥ntos
mention	cotējō
metal	raudos
midday	médhidjōws
middle	medhjos
middle (in the)	obhi
middling	leswos
might	moghtis
mild	loisós
mild	moilos
milk	glakti
milk	molgējō
mill	moleinā
millet	meljom
millstone	cr̥áwenus
mind	m̥ntis
miracle	smeirātlom
miserable	treughos
missing	s̥pterí
mist	mighlā
mistletoe	wiskom
mistress	potnjā
mix	miskējō
mix	krāmi
model	dhinghō
modest	nesros
molder	pujō
moment	mēqos
money	alchos
monster	ansus
month	mēnsis
moo	mugijō
moon	louksnā
more	m̥d̥gsi
more than that	immō
morning	amros - amrei
morning	ausrom
morning	wēsros
mortar	m̥rtāsjom
moss	muskos
mother	ammā
mother	mātér
mother-in-law	swekrús
motley	pr̥knos
mould	gheutis
mound	tumlós
mount	skandō
mountain	ceri

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mountain	pérkūnjom
mountain-path	kļdis
mouse	gleis
mouse	mūs
mouth	ōs
mouthful	bukkā
move	djejō
move	ṛneumi
move	meicō
move	mowējō
move	pelkō
move away	sprnō
movement	ṛnutis
much	pelu
mucus	moukos
mud	korkos
mud	leimos
mud	mūtrom
mud	penom
mud	sleimos
multitude	lugtos
mum	mammā
mundane	cécālos
murder	chenmi
murmur	dṛdrājō
murmur	mṛmrājō
muscle	kīkus
muscle	meus / muskós
must	mudstos
mutilate	kersō
mutilated	klambós
mutter	muttijō
mutual	moitwos
myop	neukos
mystery	kelgā
nail	klawos
nail	onghlos
nail	pṇgō
naked	nócodos
name	nōmṇ
name	práinōmṇ
name	kļējō
name	nōmnājō
narrow	amghús
narrowness	ámghustis
nates	nḋtis
native	gnos
nature	bhewtis
navel	onbhlos

near	nedjos
near	proqēd
neck	knokos
neck	kolsos
neck	mongos
neck	monos
necklace	torqis
need	ṇkējō
needle	akus
nest	nisdos
net	grebhos
net	nedsā
nettle	nedis
network	gersā
network	krātis
never	neqom
new	new(ij)os
newness	newotāts
nigh	proqos
night	noqtis
night bird	streigs
nightmare	morā
nine	newṇ
ninth	néwṇos
nipple	spēnos
nit	sknidā
no	nē
noble	atlos
noble	mḋglos
nobody	neqis
nod	newō
noise	swonos
noise	tóntenos
noisy	bholós
none	nōinos
nord	skouros
nose	nāsis
not	ghawōd
not	mē
not at all	nei
nothing	neqid
nourish	alō
now	nū
now	numki
nut	knouks
oak	aigā
oak	perqos
oak tree	grōbhos
oakum	stoupā

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oar	rēsmos
oat	awignā
oath	loughjom
oath	oitos
obedience	kleustis
obey	kleusō
obliged	moinis
obscurity	temos
observe	sṛwājō
observe	tewai
occipital	moldhā
occupation	koisā
odor	odós
of horses	ekwínós
of this side	kíteros
offshoot	stelōn
offspring	gnās
oil	solpos
oint	oncō
oint	linō
ointed	linós
ointment	ghreimðn
ointment	oncṇ
old	gerlós
old	senēks
old	wetwos
old (to become)	gerō
omoplate	skubtis
on	epi
on account of	rōdhí
once	semli
one	oinos
one	semos
one-eyed	kolnos
one-year creature	wetsós
onion	kaipā
onion	krémusom
open	wṛeumi apo
open land	rewos
opening	kaghlā
opinate	kṇsējō
opinion	dhōmós
oppress	amghō
oppress	ipjō
or	awti
or	we
oral	goulos
orange	badjos
orient	woidējō

orphan	orbhos
otherwise	awtim
otherwise	perti
otter	wðdrā
our	ṇserós
out	uti, ud
outdoors	rew
outermost	ékstṃos
outside	ek(sí)
over	(s)úperi
over	uperi
over there	oltrōd
owen	uqnós
owl	káwonā
own	ghðbhējō
ox	uksōn
paddle	plđājō
pain	edunā
pain	kormos
paint	pingō
palate	stōmṇ
palisade	edhr
palm	plmā
panic	mórmoros
parent	gentór
parent	gentrīks
part	aitis
part	prtis
part	qestis
parterre	leisā
particle	bhrustóm
partridge	kákabā
pass	jāmi
pass	trepō
passage	teqom
past	pṛnos
pasture	pāstus
path	sentos
patience	kómtłtis
patient	tlātjos
paunch	pṇdēks
pause	rowā
pay attention	ghowējō
pea	kikēr
peace	pags
peaceful	qijētós
pebble	ghrowā
pee	moighos
peel	gleubhō

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peg	kippos
penetrate	neghō
penis	bhalnós
penis	lalu
penis	moutos
penis	pesnis
penis	poutos
penthouse	kéliknom
penury	loigós
people	teutā
people	wolgos
pepper	píperi
perch	dhghusā
perfect	kómsqr̥tos
perform	sáneumi
perhaps	an
perimeter	wḏrbhis
period	áiwesos
permissive	młdhos
persecute	jeghō
persecute	wṛnāmi
perspective	dṛksmos
perspire	spoisājō
phantom	lemsos
pick	lesō
pickaxe	sḏkesnā
piece	pr̥snā
pig	porkos
pig	sūs
pig	trogos
piglet	sūkós
pike	ceru
pile	ákeswos
pile	kolnom
pillage	włeumi
pillar	stobhos
pin down	gangō
pin down	karnājō
pinetree	bharwos
pinetree	dhanwos
pink	elwos
pinnacle	stertos
pintle	bendlā
pious	jāgjus
pipe	strudsmā
piss	minghō
pit	mākājō
pit	skrobhis
pitch	peiks

place	stānom
place	stlokos
place	sinō
place	stānējō
placed on top	épiromos
plait	plektō
plait	resgō
plane	glabhō
planet	rewis
planitiēs	plātom
plate	stlām̃
platform	stātłom
plea	preks
pleasant	seljos
pleasant	swādús
pleasant	moghjos
pleasantly	ghornim
plough	arātrom
plough	arājō
plough animal	aghjā
plough handle	seghdhlā
plough handle	steiwā
ploughshare	wogsmis
pluck	gnebhō
plum	sloiwom
plump	kratsos
plunder	mḏrnamói
pod	gherghros
pod	skłiqā
poet	wātis
point	ardis
point	glōghis
poison	woisos
pole	pertā
pole	spelgis
policeman	worós
polish	sleimājō
pond	stagnom
ponder	medai
poodle	lāmā
pool	staknom
poor	ormos
poppy	mākōn
porcine	swīnós
porridge	poltos
portent	sqeros
portico	antas
portico	pr̥gā
portion	bhagos

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position	st̥tus
post	mētā
post	sparos
posterity	troghos
pot	auqslā
pot	kumbhā
potter wheel	dhroghnom
pouch	makēn
pour	ghundō
power	galnos
powerful	kúwros
praise	loudis
praise	molpā
praise	cerō
pray	chedhō
pray	meldhō
pray	ōrājō
prayer	moldhos
precarious	dúsōpis
preceding	preistos
precipitate	krepō
precisely	arti
precision	nomr̥
predator	dhaunos
prepare	adējō
presence	weidos
present	práiloghos
press	bhríkāmi
press	dhenghō
press	premō
press	presō
press tightly	kamō
prestige	meidos
prevail	cínāmi
previous	kintos
previous	préwijos
price	pretjom
prick	kentrom
prick	wésnāmi
prickle	aknā
prickle	speiksnā
priest	bhlaghm̥
priest	sákroddhos
principal	promos
procreation	gentus
produce	gonējō
produce (to)	gnājō
produce of land	dhēnom
productive	dhēlēiks

profession	kerdos
profit	bhéwedā
progeny	teukm̥
prominence	pr̥stis
promise	spondējō
promontory	akrom
promontory	prostos
promote	kákneumi
pronounce	bh̥skō
property	rentus
property	selwā
propice	sinísteros
propriety	rēis
prosper	mājō
protect	alkējō
protect	pālājō
protest	glaghá
proud	bhorsos
proud	meudos
prove	probhwājō
provide	porējō
provide	sepō
provided with handle	ansātos
provision	penos
proximity	enstar
pubescent	m̥jos
public servant	ambhíagtos
pulse	ercom
pumice	poimēks
punch	pungō
puncture	dheicō
punish	membhō
punishment	woinā
pure	k̥stos
pure	powros
purpose	meinom
pus	puwos
push	agō
push	kelō
pushed	agtós
pustule	pustlā
put	dhejō
put	stelō
put forth	pr̥oddōmi
put in order	tagjō
put off	nocējō
put on	m̥tijai
putrid	púlós

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quadruped	qətwɾpods
qualify	tādējō
queen	regeinā
question	prkskā
quick	peimis
quick	twɾtos
quickly	bhersī
quiet	sāmis
quietness	sāmðn
radiance	loukós
radiant	loukētjos
raffle	kleutō
rag	kentom
rag	pannos
rage	rðbhjō
rain	wɾstā
rain	plówijā
raise	tɫnō
ram	agós
ram	erjos
range	rékneumi
range (to)	kerdhō
rank	agmðn
rather	uta
raven	korwos
raw	ōmós
ray	rðdjom
raze	gneibhō
razor	ksnowātlā
reach	əpjō
reach	aikō
reach	ikjō
realise	pretō
reality	bhéwonom
reap	metō
reason	rətis
reason	argujō
receive	tekō
receive	ghndō
recent	kɲjós
recitate	spelō
reckon	rēmoi
reckon	puwējō
recline	kumbō
recommend	swādējō
red	dherghos
red	rudhrós
red (-haired)	reudhos
red ochre	miljom

red-deer	elēn
reduce	míneumi
reed	arom
refrain from	parkō
region	pagos
rejoice	gaudhējō
rejoice oneself	tusjai
relation	épijos
relative	pāsós
relative	sweljos
relax	remō
release	ledō
relief	podjom
religion	perístānom
remain	mɲējō
remain (water)	stagō
remaining	loiqós
remember	mímnāskō (memna)
remnant	atiloiqos
remoteness	ekstar
renew	newājō
renowned	mōros
rent	keusō
repair	sɾkijō
repellent	aghlós
replication	aimom
reprove	kudājō
reputation	kléumɲtom
request	áisoskō
require	bhedhō
residence	sedos
residence	selom
resin	cetus
resin	peitus
resonate	tónāmi
resound	boukājō
resound	gewō
respect	aisō
respect	wɾējai
rest	qijētis
rest	ermi
rest	qeješskō
rest	tɫijō
restless	ɲqijētós
restrain	kēsmi
restrict	strengō
result	tenkō
retain	dhermi

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retaliation	qoiná
retire	spleighō
revenge	apóqitis
rheum	grammā
rheum	lippā
rib	kostā
ribbon	tenā
rich	deiwoťs
riches	ops
ride	reidhō
right	déksteros
right	regťos
right way	jeunis
righteous	pūjós
rigid	sternós
rigid (to be)	stupējō
ring	anos
ring	krenghos
rite	admŋ
rivalry	neitom
river	dānus
river ford	wadhom
road	kelus
roam	wđgājai
roar	dhrēnos
roar	rugijō
roaring	ghromos
rob	sterō
rock	kárrēkā
rock	ondos
rock	pelsā
rock	roupis
rock	křdjō
rod	cosdhos
rod	litwos
rod	mentā
rod	slatā
roebuck	jorkos
roe-deer	alkis
roll	wolmos
roof	robhos
room	kětjā
root	wřdjā
root	wřrādiks
rope	resgtis
rope	sognos
rot	křjēs
rot	křnāmi
rotten	křnos

rotten	pūterós
rough	bhorcos
rough	brenghos
rough	dmpus
round	wolwós
row	wřstos
row	rējō
rowan tree	sorbhos
rub	melkō
rub	terjō
rubbed	trītós
rubber	gloidos
rubbish	ceudhos
rubbish	swordis
rudder	oisjā
rude	rudlós
ruin	réwesnā
ruin	rikjō
rule	włdhējō
ruler (in topography)	stolbos
rūmen	reusmŋ
ruminate	reusmnājō
rummage	ruspājai
rumor	bhāmā
rumor (to produce)	reumi
run	bhecō
run	dhewō
run	dremō (dídrāmi)
run	křsō
run	retō
run around	dhreghō
run away	tekwō
rust	roudhstos
rye	wřughis
ryegrass	airā
sack	coinos
sacrifice	sákrodhokjom
sad	creughos
sad	gorgós
sad	treistis
sadness	gorgnóm
safe	stiprós
sailor	nawāgós
saint	kadros
salary	misdhom
saliva	saleiwā
salt	sal

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salt	saldō
sanctuary	némētom
sand	samdhos
sand/gravel	pēnsús
sandal	pedlom
satisfaction	sātis
satisfied	prītós
satisfy	sánāmi
saucer	pðterá
say	seqō
scabies	skabhjēs
scald-crow	bhodhwos
scale	bhrounóm
scammony	akōkós
scandal	bhloskos
scant	mṇwos
scanty	sneitos
scar	kekātrīks
scar	krenktis
scatter	skedō
scatter (to)	sperjō
scene	polpos
scold	lājō
scorch	dáwneumi
scrape	gneidō
scrape off	greumō
scrape out	reubō
scratch	grbhō
scratch	gredō
scratch	meukō
scratch	skabhō
scrath out	meidō
scream	waplājō
scythe	dhēlgs
sea	mari
sea	tríjðtos
sea heaviness	srodhos
seabream	atis
seal	swelāks
seam	sjewmðn
seaside	leitos
season	jōrom
seat	sodjom
second	dwóteros
second	éteros
second	ónteros
secret	rounā
secrete	músnāmi
secretion	seimṇ

sect	wereinā
sedge	olwā
sedge	sesqos
see	dr̥kō
see	oqō
see	welō
see	widējō
seed	sēmṇ
seek	sāgijō
seen	dr̥ktis
seesaw	sweigō
seize	ghreibhō
seizing	āmós
self	sewe
sell	pðrnāmi
sell	wesnom
send	smeitō
send	sontējō
send away	iljō
sense	menos
sentence	bhānis
separate	wī
separate	derō
serpent	natriks
servant	ambhíqolos
serve	bhúncai
service	upóstānom
set	staurējō
set out	řijai
settle	sodējō
settlement	legnskā
settlement	sedmðn
seven	septṇ
seventh	séptmos
sew	sjewō
sewer's awl	sjūdhlā
sewn	sjūtós
shackle	winkijō
shade	skojā
shadow	skotos
shadow	unksrā
shake	kreitsō
shake	krotjājō
shake	qðtjō
shaker	mṇkstrom
shall	skelō
shameful	kaunós
share	erkō
sharp	akris

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sharp	gigrós
sharp	pikrós
sharpen	(kí)kēmi
shatter	bhresjō
shave	ksnowājō
shave	rādō
shave	tondējō
sheath	wageinā
sheep	owis
shelf	skolpos
shell	konkhā
shelter	krowos
shepherd	pōimōn
sherd	skroupos
shield	rebhō
shield	skoitom
shift	mejtis
shimmer	bhlġējō
shin-bone	skīwr
shin-bone	teibhjā
shine	erqō
shine	bhrēgō
shine	dhelō
shine	lukējō
shine	nitejō
shine	skejō
shine (to)	leukō
ship	nāws
ship	plówijom
shirt	kṛdsus
shit	coucis
shit	dherghs
shit	skerdā
shit	smerdā
shit	sterkos
shit	sterkos
shiver	tresō
shoddy	rupús
shoe	kṛpjōs
shoot	selgō
shoot	skeudō
shore	áperos
short	mṛghús
shoulder	omsos
shoulder-blades	pletjā
show	deikō
shrew	sworēx
shriek	krokijō
shrine	tegos

shuttle	kristājō
sibling	smópðtōr
sickle	srpā
side	splighstós
side	stlātos
sieve	kreidhrom
sieve	sējdhlom
sieve	krinō
sieve	sējō
sign	gnōtlom
silent	tausos
silent (to be)	silejō
silent (to be)	tðkējō
silently	tausnim
silver	árgntom
similar	smlis
simple	meros
simultaneously	oinowṛstós
made	ndwojos
sincere	kanō
sing	senchō
sing	óinoikos
single	mergō
sink	senqō
sip	lmbō
sip	sorbhējō
sir	arjos
sir	audhos
sister	swesōr
sister-in-law	glōs
sister's son	swesreinos
sit down	sisdō
site	loghjom
six	seks / sweks
sixth	sektos
skeleton	skroutos
skillful	dhabhros
skin	kūtis
skin	pelnis
skirt	baitā
skull	mreghmós
slack	mlínós
slack	slagós
slanting	loksós
slate	lēwanks
slaughterer	truks
slave	dōsos
sleep	swopnos

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sleep	sesmi
sleep	swepō
sleeper	swelom
slender	kṛklos
slender	makrós
slip	slabai
slip	sleibō
slip	sleubō
slip in	smúghneumi
sloe	dherghnos
slop	mouros
slow	m̥s̥os
slow	tárudos
small	alpos
small	gherús
small	paulos
small pillar	skolmā
smaller	meiwijós
smell	bhragrājō
smell	odējō
smell	sísghrāmi
smell good	swekō
smile	smejō
smith	ghwobhros
smog	sneudhs
smoke	dhūmājō
smoke	dhūmós
smoke	smoughos
smoke	smeughō
smooth	rastós
smooth	sleigō
smooth	slējús
snail	sleimāks
snake	enchis
snake	kélodhros
snake	sérpenos
snake	snoghā
snappy	swerwos
snare	merghā
snatch	r̥ðpjō
sneeze	str̥neumi
snore	srenkō
snore	stertō
snow	sneighs
snow	sníncheti
so	ita
so	mān
so	nom
so	swāi

so many	tot(j)os
so much	táwntos
sob	gheipō
soft	m̥d̥us
soften	m̥d̥uwijō
softened	m̥d̥snos
soil	bhudhm̥
soldier	neros
solid	dhobos
solid	māterós
solidify	greutō
someone	neqos
someone	edqis, edqid
son	sūnús
song	kanm̥
son-in-law	gemros
soon	moksi
soot	dhoulis
soot	sōdjā
sorrow	croughnos
soul	etm̥
sound	dhwonos
sound	kl̥ngō
sound	swénāmi
soup	supā
sour	amrós
sour	sauros
sow	trogjā
sow	segō
sow	sisō
sowing	segēts
sowing	sēlom
space	ghewos
spade	laghā
sparrow	parsā
sparrow	sparwos
speak	bhāmoi
speak	tloqai
speak	wíweqmi
spear	ghaisom
spear	lostos
spearshaft	ghastā
speckled	bhr̥ktos
speckled	m̥r̥ktos
speech	ðgtis
speech	bhām̥ðn
speechless	muttis
spelt	ados
spelt	alēiks

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spend	neudō
spend the night	awō
spill	seikō
spill	sujō
spin	snēmi
spit	spjwtoś
spit	spjewō
splash	persō
spleen	spelghā
splendid	ghlēiwos
split	dṛnos
split	delō
split	skerjō
split	skindō
split	skljō
split	spleidō
spoil	deusō
spokesman	kṛstōr
spoon	leiglā
spot	kālis
spray	ros
spread	strātós
spread	strnō
spread out	pṛtō
spring	lendhā
spring	mānājō
spring	wēsṛ
spring	skatō
spring	skerō
spring	slijai
sprout	geimō
sprout	wisējō
spurn	tembhō
square	qōddrom
squeak	pipjājō
squeeze	wēskō
stab	pinjos
stab	tálejā
stable	stārós
stain	dherkō
stain	smitlā
stain	sméneumi
stake	stauros
staked	staurós
stalk	kolmos
stalk	tibhjā
stall	stādhlom
stamp on	stembhō
stand	(sí)stāmi

standing post	stōtis
star	sterlā
star	steros
star	sweidos
stare	stelpō
start	dherbhō
stay	wesō
steadfast	woikós
steady	dhrmos
steal	klepō
steal	tājō
steam	bholos
steam up	dhemō
steep	kloiws
steep	rdhwos
step	cāmṇ
step	ghenghō
step	ghradjai
sterile	stérolis
stick	ghaisom
stick	spōnos
stick	steipēts
stick	stupos
stick	sworos
stick	ghaisējō
stick	glínāmi
stick	koljō
stick	limpō
stick	stigājō
sticky	gloijs
still	dom
sting	ákulos
stink	smerdō
stir up	mendhō
stir up (to)	sewō
stock	kreumi
stone	akmōn
stone	lōpods
stone	sōksom
stool	skabhnom
stop	stāwō
stop	strigājō
stop up	teurō
stork	kíkōnjā
storm	ṛbhros
story	kleutrom
straighten (to)	storējō
strain	kemō
strainer	rēti

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strap	telmón
strap	wļōrom
straw	pálejā
stream	bhleugsmņ
stream	bhoglā
stream	srowmos
street	stoighos
strenght	belom
strength	weis
strengthen	dherghō
stretched	tņtos
strew	strewō
strick	dhōunis
strike	bhínāmi
strike	bhreukō
strike	keldō
strike	plņgō
strike	tundō
strike	wedhskō
string	strengom
string	tentrom
stroll	alājai
strom	srewtis
strong	bélowents
strong	melos
strong	nertos
struck	bhītós
study	ghlendhō
study	stoudjom
stuff	bhrķjō
stumble	stemō
stupid	mlākós
stupid	mōrós
stutter	lepō
subsequent	pósteros
succeed	bheughō
success	kobom
such	tālis
suck	seugō
suck	dheimi
suck	mendō
sudden	abhnos
suffer	qņtjō
suffer	pθtjai
suitor	prokós
sulphur	swelplos
summer	samos
summer heat	chrensós
summit	bhroigos

summit	kolmņ
sun	sáwel(jos)
sunlight	swelā
superior	(s)úperos
supplementary	wíteros
support	leghtrom
support	bhlķjō
support	steutō
sure	pðgrós
surface	pelom
surname	kómnōmņ
sustenance	pādhlom
swallow	glujō
swallow	qemō
swamp	pļwods
swan	elōr
sway	kēwējō
sweat	swoidājō
sweet	dļkus
swell	bhreusō
swell	pankō
swell	salom
swell	swelājō
swell	turgējō
swelling	bhuljá
swelling	cotlós
swelling	keulom
swelling	panknos
swelling	paplā
swelling	pounā
swift	ōkús
swim	snāmi
swindle	swendhō
sword	kladjos
sword	ņsis
syrup	bhrwtom
table	speltā
tablet	klāros
tablet	loisā
tail	doklom
tail	dumbos
tail	ersā
tail	ersábhajjom
tail	pukos
take	emō
take	labhō
take care	swerghō
take possession	áinumoi
talk	gálgaljō

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talk	garsijō
tame	kékuros
tame	dómāmi
taste	geustis
taste	gusnō
team	lāwós
tear	dakru
tear	lðkesājō
tear	rōdō
tear off	weldō
tearing	lðkós
teat	dhēlós
teat	tettā
technique	teksnā
tell	jekō
tell	wedō
tell off	lámptom
temple	temlom
temple	tenjom
ten	dekṃ
tendon	kenklom
tendril	olgjā
tension (engine)	tórkṃptom
termite	tṛmos
terrible	ghouros
terror	tersós
thanks	moitmos
that	ei
that	elne elnā elnod
that one	oisos
that, the one that	jōs (je), jā, jod
the other one	álteros
then	ṇdha
then	tom
then	tom-ke
there	idhei
therefore	ar
therefore	tori
thick	dṇsus
thief	bhōr
thigh	bhemṛ
thigh	morjods
thigh	touknā
thin	bhlakkos
thin	speimis
thin	tṇus
thing	weqtis
think	sṇtējō
thinnen	kakō

third	tritjos
thirst	tṛstis
this	ghei-ke ghāi-ke ghod-ke
this	is, id
this	ke kā kod (eke ekā ekod)
this	se/sos sā/sī tod
thorn	sqijā
thorn	tṛnā
thousand	smeighsli
thrash	studējō
thread	koreibs
threaten	tercō
threatening	torcós
three	trejes trija trísore
three in a go	trísōs
three times	trís
threefold	triplós
throat	bhṛugs
throat	gutṛ
through	trāntis
throw	jðkējō
throw	supājō
throw away	celō
thrush	tṛsdos
thumb	polnēks
thunder	tontrom
thunder	torsmṇ
thunderbolt	meldhjā
thurify	kodejō
thus	s(w)eike
tick	degā
tick	rekā
tile	teglā
time	daitis
time	qṛtus
time	tempos
time	wetos
time before dawn	ánksitjom
tip	bhṛstís
tip	ghðrtā
tire	lṇcō
tired	clēnós
to	ana
to	dō
to another place	áljote
today	edjēw

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together	sm
tomb	sépeltram
tomorrow	krasi
tongue	dṇghwā
tongue-tied	balbos
tool	kaplos
tooth	dentis
top	kōnos
torch	chōks
torch	dāwētā
torment	cedhō
torpid (to be)	tr̥pējō
tortoise	ghelus
torture	cēlējō
torture	rigjō
totality	solwotāts
touch	krēwō
touch	palpājō
touch	tn̥gō
tough	raukos
towards	anta
towards	poti
towards there	totrēd
towards this side	kitrōd
towel	tergslom
tower	tursis
tower	m̥ijai
town	dounom
track	ogmos
track	pentō
traitor	prod̥tór
transport	woghos
transporter	weghtór
trap	lōkjō
trap	ségneumi
trap	segnom
travel	ambhírēmos
travel	kelujō
tread	sprāmi
treasure	kusdhos
treat	drewō
tremble	tremō
trestle	stoghos
triplication	trípl̥tis
troop	tw̥rmā
trouble	kādos
trouble	oghlējō
trough	aldhōn
trousers	skousā

trout	perknā
true	wēros
trunk	stērps
trunk	st̥m̥nos
trust	bheidhō
try	kōnājai
tube	aulos
tube	rebhrus
tuff of hair	w̥ltis
tunic	ruktus
tunnel	bolkos
turban	wosis
turfgrass	smelgā
turkey	téturos
turmoil	túmolos
turn	derbhō
turn	qerpō
turn	swerbhō
turn	torqējō
turn	welwō
turn	w̥stis
turn	w̥tō
turn around	witājō
turned aside	pérper̥ks
turnip	rāpom
twenty	dwidk̥m̥tói
twice	dwīs
twin	jemós
twisted	lordós
two	dwou, dwou dwāu,
two each	dwīsnōs
udder	ūd̥h̥r
udder	ūd̥h̥ros
ugly	bhoidhos
ugly	bhoidos
ugly	tr̥rp̥is
un-	̥
unbind	luwō (lewō)
unbound	lūnós
unbound	lūtós
uncle	áwontlos
uncle	p̥̥trujós
under	sup
under	upo
underly	̥d̥herós
understand	peumi
unexpected	nekop̥inós
unfair	̥joustos

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union	kómjougos
unjustice	ṇjousjom
unknown	ṇgnōtós
unmade	ṇdhētós
unmuddy	ṇsloimis
until	teni
uppest	(s)upmos
upright	ernos
use	bhreugtis
use	bhréucaí
usual	niṭjos
uter	úderos
utterance	wedmṇ
valley	klopnis
valuation	mēdos
value	wertos
vanish	dhchínāmi
variegated	pelupoikos
vase	gheutlom
vegetable	ghelwos
vegetation	dhalnā
vehicle	weghtlom
veil	wṛeikā
veil	gheughō
vein	weisnā
very	abhro-
very well	úperesū
vessel	bhidhós
vessel	kaukos
veteran	gerwós
vibrate	wibrājō
victim	wéiktomā
victory	seghos
view	dṛktis
vigor	wṛgā
vigorous	súnoros
vigour	woikā
village	woikos
vine	weitis
vine-leaf	pámponos
violent	twoisós
violet	sleiwos
virginal	poughos
virtue	dekos
vis-à-vis	seqi
viscose	cobhōn
vision	dṛkos
visitor	setis
vital energy	aiwu

vivid	ētros
voice	woqs
vomit	wémāmi
vow	wochējō
vulture	bhāsos
vulture	cṭurós
wade	sworā
wake up	bheudhō
wake up	gerjō
walk	steighō
walk	wadhō
wall	mākesjā
wall	walnom
wall	dhoighos
walls	moinja
walnut	knuwā
wander	ersājō
want	torpējō
war	dsā
warm	chormos
warm	cherō
warmth	topnos
warn	monējō
warp	keukō
warrior	meilēts
wart	wersmṇ
was	bhūm
wash	klewō
wash	lowō
wash	neicō
wasp	wopsā
watcher	bhulkos
water	aqā
water	weri
water	wodā
water	wodṛ
water	wopjā
water	prūsneumi
watercress	cérurōm
wave	tusnā
wave	welnā
wave	wṇdā
way	itr
way	pontis
way	tropos
way	weghjā
we	ṇsme
we	wejes / weje
weak	klamrós

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weak	lēnis
weaken	bhleumi
weaken	mlājō
weaken	mļkāmi
weakness	bhelu
wealth	opnā
weapon	wedhṛ
wear	gesō
weasel	kérberos
weather	wedhrom
weave	krekō
weave	webhō
weave	wegō
web	tekstlom
webbing	wṛéikonjom
wedge	kúnejos
wedge	tṛmēts
weed	mousos
weed	runkō
weed	sṛijō
weep	bhlēmi
weft	traghs mā
weigh	kenkō
weight	pondos
welcome	crātós
well	bhrewṛ
well	sū
went	ludhóm
went	sodóm
west	éperom
wet	molqos
wet	wosmós
wet	rðgājō
wet (to be)	uchējō
what	qis qid
wheat	bhar
wheat	bharseinā
wheat	bhreugsmṇ
wheel	dhroghós
wheel	qeklom
wheel	rotā
wheelrim	kantos
wheelrim	witus
whelp	kuwos
whelp	mondós
when	jom
when	qmdō
when	qom
whenever	s(w)ei

where	qomde
where	qodhei
where	qoi
where (rel.)	jodhei
wherefore	jori
wherefrom	qotrōd
whether	edqos, -qā, -qod
whey	misgā
which	qād
which	qóteros
whine	ghirrijō
whip	werbos
whip	wļepējō
whirl	çrcots
whirl	twṛbhōn
whirl	snerō
whirlpool	dhwolsā
whisper	swerō
whisper	swrswrājō
whistle	sweighlājō
whistle	sweisdō
white	albhos
white	kweidos
white-stained	bhlōros
whither	qote
whither	qotrēd
who, which	qos qā(i) qod
whoever	qāqos
whole	solwos
whore	loutsā
whore	skortom
why ?	qori
wicked	ṇprobhwos
wide	plākos
wide	urús
widely known	wíklutom
widow	wídhewā
wife	sṃloghós
wife	uksōr
wild	ghwērós
wild	reudos
will	weltis
will	welmi
willing	wolós
willow	widhus
willow	salēiks
win	winkō
wind	wentos
wind	gergō

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wind	wondhējō
window	louksā
wine	woinos
wine-cask	kļpros
wing	agslā
wing	peterós
winnow	neikō
winter	gheimŗ
winter	ghjems
winterly	gheimrīnós
wipe	mņtrājō
wipe	tergō
wire	chislom
wire	weiros
wisdom	widjom
wise	gnōwos
witch	wikkā
with	kpti
with	kom
withdraw	anjō
wither	wijēskō
without	ņeu
withdraw	kesdō
witness	tristis
wolf	wailós
wolf	wļqos
woman	cenā
woman	morignā
womb	colbhos
wonder	smeirai
wonderful	smeiros
wood	deru
wood	kǝldos
woodpecker	kikjā
woodpecker	peikā
woodpiece	skoidos
woodworker	tetkōn
wool	wļnā
word	wŗdhom
work	drājō
work	drātis
work	opos
work	wergom
work	wŗgjō
work with a thread	penō
workman	drātór
world	dhoubnom
worm	longhros

worm	ochis
worm	qrmis
worm	wormis
worn	bhoros
worry	mérneumi
worse	pedjós
worship	jagjō
worthy	deknos
wound	elkos
wound	wolsnos
wound	chendō
wound	swŗneumi
wrap	weipō
wrap out	werpō
wrapping	wélwmen
wrath	eisā
wring out	légneumi
wrinkle	gorbos
wrist	dornom
write	skreibhō
yarn	glomos
yarn	snēmņ
yawn	ghanos
year	atnos
yell	klāmājō
yellow	bhlāwos
yellow	knakos
yes	jāi
yesterday	dhghesi
yew	oiwos
yoke	jugóm
you	juwes / juwe
you	tū
young	júwenis
young	juwņkós
young	juwōn
young goat	ghaidos
youngster	machos
youth	júwņtā
youth	machotis

I.3.2. PIE - ENGLISH DICTIONARY

The Latin meaning and Syntax further define the English meaning and proper usage of the Late Proto-Indo-European words, while the Notes help to inflect them correctly. The PIH column shows the laryngeal reconstruction of the words, or the roots behind Late PIE vocabulary. For detailed information about the etymology of each reconstructed PIE word, and to determine the vocalic outputs of the etymological *schwa* (*ə) in the different dialects, v.i. Appendix III.1.

Late PIE	Synt	Notes	PIH	Meaning	(Latin)
(dī)dōmi	tr	BIIC	deH ^w ₃	give	dō
(gī)gnōskō (gnōwa)	tr	AVc	gneH ₃	know	nōscō
(ī)wēmi	tr	BIIB	H ₂ weH ₁	blow	exhalō
(jī)jēmi	cau	BIIB		expel	expellō
(kī)kēmi	tr		keH ₁	sharpen	exacuō
(pīm)plēmi	tr	BIIB	plH ₁ ; plnāmi	cf fill	pleō
(s)ūperi	ind		tab	over	super
(s)ūperos	adI		tab	superior	superior
(s)upmos	sup.			uppest	summus
(sī)stāmi	intr	BIIA	steH ₂ ; stīstāmi	stand	stō
(sī)stāmi antí/prāi	den			advantage	praestō
(sī)stāmi apó	intr			be far	distō
(wī)weimi	tr	BIID		hunt	uēnor
(wī)wermi	tr	BIIE		find	inueniō
əgjō	intr		H ₃ eg	affirm	aiō
əgtis	fem			speech	contiō
əpjō	inc		H ₂ ep	reach	apīscor
əsnātis	fem	jo		harvest	segēs
ábelos	mas		H ₂ eb-(e)lo	apple	malum
abhnos	adI			sudden	repentinus
abhro-	praeFix		(per-)	very	per-
acnos	mas		H ₂ eg ^(wh) -no	lamb	agnus
ad	ind			at	ad
adējō	tr			prepare	praeparō
admṇ	neu			rite	ritus
ados	neu	ádesos	H ₂ ed-os	spelt	ador
ágəlis	adI		H ₂ eg- Hli-/ ili- /Hlo-	agile	agilis
āghar	intr			fear	metuō
āgherom	neu			lake	lacus
aghjā	fem		H ₂ egh	plough animal	iūmentum
aghlós	adI			repellent	repellens
aghlóws	fem	(aghlewós)		drizzle	irrorātiō

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ághneumi	tr	BIVb		afflict	affligō
aglā	fem			brood	prōlēs
agmōn	neu	en		rank	agmen
agō	cau		H ₂ eg	push	agō
agos	mas		H ₂ ego-	fault	noxa
agós	mas		H ₂ egó-	ram	ariēs
agrā	fem			massacre	trucidatiō
ágrēnom	neu		H ₁ eg-r	fruit	fructus
agróqolās	mas			farmer	agricola
agros	mas		H ₂ egro-	land	ager
agslā	fem			wing	āla
agtós	adI			pushed	actus
aichesājō	den			feel ashamed	pudet
aidhis	fem	ej		hearth	aedes
aidhō	intr			burn	ardeō
aigā	fem		H ₂ eigeH ₂	oak	robus
aigros	adI		H ₂ oig-ro	ill	aeger
aikō	tr	AIa	H ₂ eik	reach	ic(i)ō
áimneumi		BIVb		copy	imitor
aimom	neu		H ₂ eimo-	replication	effigiēs
ainō	den		dat	belong	pertineō
áinumoi	tr			take possession	potior
aigos	adI			even	aequus
airā	fem			ryegrass	lolium
aisdai	tr			honour	honorō
aisdhom	neu			ardour	ardor
aiskrós	adI		H ₁ eisk- H ₂ eisk- aidh-sk?	/ ? clear	clārus
aisō	tr			respect	reueoreor
áisoskō	tr			request	quaerō
aisskā	fem			desire	desiderium
aitis	fem	jo	H ₂ ei-ti	part	pars
áiw(es)i	ind			always	semper
áiwesos	mas			period	aetas
aiwós	adII		H ₂ eiwo-	eternal	aeuus
áiwotāts	fem	jo		eternity	aetas
aiwu	neu		H ₂ oiwu(s)/ H ₂ oiwi- /H ₂ oiwo-/ H ₂ oiwā-	vital energy	uitālitās
ájeri	ind			early	mane
ájesnos	adII			brassy	aereus
ajos	neu	es	H ₂ ei-os	brass	aes
ákeris	fem	jo		maple	acer
ákeswos	mas			pile	aceruus
akjēs	fem			blade	aciēs
akmā	fem			bit	buccella
akmōn	mas	(ákmenos)	H ₂ ek-mon	stone	lapis

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aknā	fem			prickle	agna
áknāmi	tr	BIVa		eat	edō
akōkós	mas			scammony	acridium
akos	neu	es		chaff	acus
akris	adI		H ₂ ek-ri-, H ₂ ek-(e)ro-	sharp	acer
akrom	neu		H ₂ ek-ro	promontory	promontorium
áksijā	fem			axe	ascia
aksis	mas	jo	H ₂ egws-iH ₂	axle	axis
aksteinos	fem			broom	genista
áculos	mas			sting	aculeus
akus	fem	ew		needle	acus
alā!	excl.			hello	heus!
alājai	intr			stroll	ambulō
albhos	adI		H ₂ elbho-	white	albus
alchos	mas			money	pecūnia
aldhōn	mas	en		trough	potārium
alēiks		(alikós)		spelt	alica
álesnos	fem		H ₂ el-esno-	alder	alnus
alghējō	den			be cold	algeō
aljos	lois	id	H ₂ el-yo	another	alius
áljote	ind			to another place	aliō
alkējō	tr			protect	tueor
alkis	mas / fem	ej	cf. elēn	roe-deer	alcēs
alō				nourish	alō
alpos	adI			small	paruus
álteros	adII			the other one	alter
altjos	adII		altjós	adult	adultus
altós	adI			high	altus
álujos	mas			garlic	ālius
álumṇ	neu		H ₂ elu-	beer	ceruisia
amājō	tr			love	amō
ambhí	ind		h ₂ ṇ t _{bhí} ? > *h ₂ ṇ t _{bhí}	around	circum
ambhíagtos	mas		ambhíagots	public servant	agens publicus
ám_{bh}inom	neu			circuit	circuitus
ambhíqolos	mas			servant	seruus
ambhírēmos	mas			travel	iter
ambhou	lois			both	ambō
ámeikā	fem			friend	amīca
amēiks	mas	(amikós)		friend	amīcus
ámetā	fem			aunt	amita
amghō	tr		H ₂ emgh	oppress	angō
amghús	adI		H ₂ mghu-; amghus	narrow	angustus
ámghustis	fem			narrowness	angustiae
ammā	fem			mother	mamma
āmós	mas			seizing	apprehensiō

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amrós	adI		H ₃ mH ₂ -ró	sour	amārus
amros - amrei	mas			morning	mane
an	ind			perhaps	forsan
anðmos	mas		H ₂ enH ₁ (e)-mo	breath	animus
anðts	mas / fem	et	H ₂ enH ₂ -t(i)-	duck	anas
ana	ind			to	ad
ándhesā	fem			maid	uirgō
andhos				blind	caecus
anglos	mas		H ₂ eng-lo	articulation	rotula
anjō	tr			withdraw	remoueō
ankos	mas		H ₁ enko-	hook	ancus
anksi	ind		cf. noqtis	before dawn	anteluciō
ánksitjom	neu			time before dawn	antelucānum
annā	fem			granny	anus
anos	mas			ring	anus
ansā	fem			handle	ansa
ansātos	adII			provided handle	with ansātus
ansus	mas			monster	monstrum
anta	ind			towards	uersus
antas			H ₂ enH ₂ teH ₂	portico	antae
antí	ind		H ₁ enti	before	ante
ántijos	adI			antique	antiquus
ántitjos				classical	<i>classicus</i>
antjās	fem			fringe	antiae
antjom	neu			end	finis
antrom	neu			cave	tugurium
anus	fem		H ₂ enu-	grandmother	anus
áperos	mas			shore	ripa
apmṇ	neu		apsmṇ	fastening	copula
apnis	fem	ej	H ₂ ep-ni	brook	amnis
apo	ind			from	ab
apóqitis	fem			revenge	represalia
apóstðtis	fem			distance	distantia
apóteri	ind			behind	post
apóteros	adI			hint	posterus
apowésentis	adII			absent	absens
ápowoiks	mas	(ápowoikjos)		colony	colonia
appās	mas			dad	pappa
apros	mas		Hepro-	boar	aper
apsā	fem		H ₂ epseH ₂	asp	pōpulus tremula
aqā	fem		H ₂ ekweH ₂	water	aqua
ar	ind			therefore	ergō
arājō	tr		H ₂ rH ₁ ; H ₁ rjō; arjō	plough	arō
árarjō	tr			adjust	adaptō
arātrom	neu			plough	arātrum
árdejā	fem			heron	ardea

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ardis	fem	ej		point	punctus
árgñtom	neu		H ₂ rg-	silver	argentum
argós	adI		H ₂ ergó-	brilliant	splendidus
argujō	tr			reason	arguō
arjos	mas			sir	dominus
ármñtom	neu			cattle	armentum
armos	mas		H ₂ erH-mo-	arm	armus
arom	neu		H ₂ erom	reed	harundō
arqos	mas		H ₂ rkwo-	bow	arcus
arti	ind			precisely	adeō
artis	fem	jo		art	ars
artus	mas			joint	artus
árusā	fem		H ₂ er-	hazelnut	abellāna
arwā	fem			butter	aruīna
arwom	neu		H ₂ erH ₃ w-o r/ñ	field	aruum
āsā	fem			altar	āra
āsējō	den			be dry	areō
āsos	mas			ash	cinis
astris	mas	ej		hawk	astur
astus	mas			guile	astus
ati	ind			again	re(d)
atloiqos	mas			remnant	reliquiae
atis	fem			seabream	sparus aurata
atlos	adI			noble	nōbilis
atnos	mas			year	annus
atqe				and	ac
ātros	adI		H ₁ eH ₂ -tro	black	āter
attās	mas			dad	tata
audhos	mas			sir	dominus
augā	fem		H ₂ eugeH ₂	glance	fascis
augējō	prog			enlarge	augeō
āugējō	cau			aument	augeō
augmñ	neu	en		increase	augmentum
augō	cau		H ₂ ewg	increase	augō
augos	neu		áugestis	development	auctum
augtós	adI			grown	auctus
aulos	fem			tube	conductus
auqslā	fem		cf. uknós	pot	aula
ausijō	tr			empty	hauriō
ausom	neu			gold	aurum
ausōsā	fem		ausós; H ₂ eus-oHs- eH ₂	dawn	aurōra
ausrom	neu			morning	matīna
áussketi	intr			dawn	illūcescō
áusteros				eastern	orientālis
aw	ind			howbeit	autem
awā	fem			fountain	fons

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awējō	tr		H ₂ ew	desire	desiderō
áweljā	fem			breeze	aura
awigsnā	fem		H ₂ ewig-sneH ₂	oat	auēna
áwija	fem			grandmother	auia
awis	fem	ej	H ₂ ewi-	bird	auis
awisdhijō	tr			feel	sentiō
awṇ	neu	(ávenos)		fountain	fons
awō	dur		H ₂ ew	spend the night	pernoctō
áwontlos	mas			uncle	avunculus
awos	mas		H ₂ euH ₂ o-	grandfather	auus
awou	ind		H ₂ ewo(u)	back	retrō
awti	ind			or	aut
awtim	ind			otherwise	autem
awtjos	adI		H ₂ eut-	destitute	destitūtus
badjos	adI			orange	badius
baitā	fem			skirt	falda
baktlom				club	baculum
bábalos	and			barbaric	barbarus
balbos	adI			tongue-tied	balbus
bámbalos				drum	bombus
batā	fem			babble	locutiō sine sensu
baubājai	intr			bark	latrō
bebājō	intr			bleat	bēbō
belom	neu			strenght	uis
bélowents	neu			strong	robustus
bendā	fem			end	extrēmum
bendlā	mas			pintle	cnodax
bewō	tr	AIa		damp	imbuō
bhṭskō	tr			pronounce	pronuntiō
bhṭtjō	tr			hit	quatiō
bhṭwējō	tr		bhH ₂ w- /bhH ₃ w dat.	be favourable	faueō
bhabhā	fem			bean	faba
bhāghus	mas	ew		arm	bracchium
bhagjō	tr			fry	frigō
bhagō	cau			atribute	addicō
bhagos	mas			portion	portiō
bhāgos	fem		bheH ₂ go-	beech	fāgus
bhalnós	mas			penis	pēnis
bhāmṭn	neu			speech	affāmen
bhāmā	fem			rumor	fāma
bhāmoi	intr		bhH ₂ -moi	speak	for
bháneumi	tr	BIVb		illuminate	illūminō
bhānis	fem			sentence	sententia
bhānom	neu			lighting	illuminātiō
bhānús	adI		bhānus	bright	lucidus
bhāos	neu	(bháaesos)	bheH ₂ os; bhāwos	light	lux

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bhar	neu	(bharós)		wheat	far
bhardhā	fem			beard	barba
bharkos	mas			brooch	fibula
bharseinā	fem			wheat	farīna
bharsjom	neu			bread	pānis
bharwos	fem			pinetree	pīnus
bhaskis	mas			bundle	fascis
bhāsos	mas			vulture	ūltur
bhātis	fem		bhθtis	expression	expressiō
bhebhros	mas			beaver	fīber
bhecō	intr	AIa		run	currō
bhedhō	intr	AIb		require	postulō
bhegō	cau			curb	arcuō
bheidhō	tr	AIa		trust	fīdō
bheikos	fem			fig	fīcus
bheiq̄lā	fem		bheiq- non IE? Item pelekus ai. parašu	bee	apēs
bheitolm	mas			axe	ascia
bheldō	intr	AIa		knock	battuō
bhelēks	fem			coot	fulica
bheljō	tr		H ₃ bhel	enhance	prosperō
bhelō	intr			fluoresce	superluceō
bhelō	intr			make noise	strepō
bhelu	neu			weakness	dēbilitas
bhélunā	fem			henbane	hyosciamus
bhemr̥		(bhémenos)		thigh	femur
bhendhō	tr	AIa		bind	ligō
bhendhros	mas			mate	collēga
bhendos	adI			melodious	melodicus
bhenjom				hit	contusiō
bherāgs	fem	(bhergos)	bherH ₂ -g	birch	betulla
bherghō	tr	AIa		keep	conseruō
bherkō	den	AIa	cf. merkō	glimmer	fulgeō
bhermi (bherō)	tr	Bia	bhHr; bher	bear	bherō
bherm̥	neu			burden	onus
bhernā	fem			breach	fissūra
bhersti	ind		bhristi ? cf. testis <*tristis	quickly	citō
bherwō	inc	AIa		boil	feruō
bhesmi	intr	Bia		blow	spirō
bheudhō	inc	AIa		wake up	expergiscōr
bheughō	perf.	AIa		succeed	eueniō benē
bheugō		AIa		fold	flectō
bheurō	tr		(liquidō)	knead	commisceō
bhéwedā	fem			profit	compendium
bhewmi	dur	BIa / BIb	bhwH ₂	be	sum
bhéwonom	neu			reality	reālītās
bhewtis	fem	jo	bhūtis, bhūtís	nature	nātura

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bhewtlom	neu			environment	circumiectus
bhíbheimi	tr			fear	timeō
bhidhós	mas			vessel	fiscus
bhidrós	adI			bitter	asper
bhilis	adI			good	bonus
bhínāmi	tr	BIVa	bhiH	strike	tundō
bhindō	cau			cleave	findō
bhītós	adI		bhiH-tó	struck	tusus
bhl̥ǵsmā	fem			flame	flamma
bhlādhrom	neu			fan	flābellum
bhlaghm̥	neu			priest	flāmen
bhlagō	tr			hit	tundō
bhlaidos	adI			clear	candidus
bhlakkos	adI			thin	flaccus
bhlāmi	tr			blow	flō
bhlāwos	adI			yellow	flāuus
bhledō	intr	AIa		boast	glorior
bhleicō	intr	AIa		hit	flīgō
bhleidō	intr	AIa		inflate	inflor
bhlēmi	intr			weep	fleō
bhlendhos	adI			dim	sublustris
bhleucō	intr	AIa		flow	fluō
bhleugsm̥	neu	en		stream	flūmen
bhleumi	tr	BIII/AIIIu	bhelujō	weaken	dēbilitō
bhleusō	tr	AIa		choke	suffocō
bhl̥gējō	den			shimmer	fulgeō
bhl̥kjō	tr			support	fulciō
bhlokos	mas			flake	floccus
bhlōros				white-stained	candidē maculātus
bhlos	mas	(bhlēsos)		flower	flōs
bhlosējō	den			bloom	floreō
bhloskos	mas			scandal	scandalum
bhlōtis	fem	(bhlōtjos)	bhlH-ti	flower	flos
bh̥nghus	adI			dick	crassus
bhodhjō	tr			dig	fodiō
bhodhwos	mas			scald-crow	coruus
bhodjós	adI		(comparātīuus)	better	melius
bhodrós	adI			excellent	excellens
bhodsā	fem			grave	fossa
bhogā	fem			guerrilla	guerrilla
bhogājō	intr			contend	litigō
bhogjos	mas			crook	amnis
bhoglā	fem			stream	amnis
bhoidhos	adI		bhoi- <bhei 'timeō'	ugly	foedus
bhoidos	neu	es		ugly	foedus
bhoiqos	mas			drone	fūcus

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bhokos				flame	focus
bholghis	mas	ej		bag	follis
bholjom	neu		bheljom	leaf	folium
bhōljóm	neu		bhōwljóm	den	cubīle
bholos	mas			steam	uapor
bholós	adI			noisy	strepitosus
bhondhsā	fem			crib	praesepēs
bhōr	mas	bhrós		thief	fūr
bhorājō	tr			bore	forō
bhorcos	adI			rough	rudis
bhoros	mas			worn	gestāmen
bhorsos	adI			proud	superbus
bhosos	adII			barefoot	planipēs
bhoundhējō	cau			awaken	expergefaciō
bhougā	fem			flight	fūga
bhougājō	cau			flee	fūgō
bhōwijós	adI		bheHwiýō-	favourable	propitius
bhragrājō	den			smell	oleō
bhrātēr	mas	(bhrātros)	bhreH ₂ -ter	brother	frāter
bhrātreinos	mas			brother's son	sobrīnus
bhrātrijos	adII			brotherly	frāternus
bhrēgō	intr	AIIf		shine	luceō
bhreicō	tr	AIa		fry	frigō
bhremō	intr	AIa		grunt	fremō
bhrendhō	intr	AIa		gush up	exuberō
bhrenō	intr	AIa		edge	excellō
bhresjō	tr			shatter	disrumpō
bhréucaī	tr			use	fruor
bhreugs	mas	(bhrugós)		fruit	frux
bhreugsmṇ	neu	en		wheat	frūmentum
bhreugtīs	fem	jo		use	ūsus
bhreukō	tr	AIa		strike	mulceō
bhrēunā	neu			limit	līmes
bhreusō	cau	AIa		swell	tumefaciō
bhrēwā	fem			bridge	pons
bhrewō	tr	AIa		brew	concoquō
bhrewṛ	neu	(bhrefwōs)		well	puteus
bhr̥ghos	adI		bhr̥ghú-	high	altus
bhrigijō	intr			chirp	frigō
bhrijājō	tr			crumble	frīo
bhr̥ijō	cau		bhHriyō/bhHr uyō	cut open	incīdō
bhr̥ikāmi	tr			press	premō
bhr̥kjō	tr			stuff	farcio
bhr̥ksnos	fem		bhrH ₂ g-sno	ashtree	frāxīnus
bhr̥ktos	adI		cf. mṛktos	speckled	uarius
bhr̥mā				incision	incisiō
bhr̥ṇgō	tr		bhrH ₁ -g	break	frangō
bhroigos	mas			summit	cacumen

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bhrosdhos	fem			cedar	cedrus
bhrounóm	neu			scale	squāma
bhrounos	adI			brown	spādix
bhroustom	neu			fragment	frūstum
bhrówŋtis	mas			forehead	frōns
bhr̥stís	fem			tip	cupis
bhr̥tis	fem			bearing	portātiō
bhrughnos	fem			bulrush	iuncus
bhr̥ugs	mas	(bhr̥ugós)		throat	guttur
bhrūs	fem	(bhruvós)	H ₃ bhruH; bhrews	eyebrow	brus
bhrúsnāmi	tr	BIVa		break	defringō
bhrusnjā	fem			cuirass	lorīca
bhrusos	mas			breast	pectus
bhrustóm	neu			particle	particula
bhrutēks	mas	(bhrutkós)	(bhrutkós)	bush	frutex
bhrwtom	neu		bhrwHtó-	syrup	dēfrutum
bhudhm̥	neu	en		soil	solum
bhudhnos	mas			ground	fundus
bhugjō	dur			flee	fugjō
bhugos	mas			animal	bestiola
bhukús	adI		bhukus	blunt	hebes
bhuljá	fem			swelling	tumor
bhulkos	mas			watcher	uigil
bhūm	intr	(aor. ab esmi)	bhHu-m; bhwom	was	fuī
bhúncai	intr	AIa		serve	fungor
bhusājō	tr			kiss	osculō
bhūsājō	intr			hasten	percurrō
bhūtá	fem			dwelling	mansiō
bhutjō	tr			hit	quatiō
bhūtós	adII			been	part. pf. esse
bistlis	fem			gall	bilis
blaktā	fem			cockroach	blatta
blatsājō	intr			chatter	blaterō
blēkājō	intr			bleat	bēbō
b̥ḡdus	mas			drop	gutta
bodhrós	adI			deaf	surdus
bokkos	mas			goat	caper
bólboljō	intr	AIVd		explode	explōdō
bolkos	mas			tunnel	cuniculus
boukājō	intr			resound	personō
brenghos	adI			rough	raucus
brokos	mas			badger	mēlēs
bughōn	mas			eagle owl	bubō
bukkā	fem			mouthful	bucca
cadhō	intr		g ^w H ₂ dh	dive	immergō
cām̥	neu			step	gradus
cécālos	adI			mundane	mundānus

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cedhō	tr	AIa		torment	cruciō
cejwō	dur	AIa	g ^w H ₃ ei-w	live	uūō
cēlējō	tr	AIIIe		torture	tormentō
célŋdis	fem	ej		acorn	glans
celō	tr	AIa	g ^w elH ₂	throw away	abiciō
celom			g(e)uH ₂ -lo	cavity	cauitās
cemjō	intr		gwmjō	come	ueniō
cenā	fem		g ^w nH ₂ ; g ^w ēnis, g ^w nā	woman	mulier
cerbhō				devour	uorō
ceri	neu	ej	g ^w erH-	mountain	mons
cerjō	intr	AIa		finish	finiō
cerō	tr	Alb		praise	laudō
cerō	den			have fever	febriō
ceru	neu	ew		pike	ueru
cérurom	neu			watercress	berrum
césneumi	tr	BIVb		extinguish	exstinguō
cespis	fem			branches	foliamen
cetus	mas			resin	bitūmen
ceudhos	neu	es		rubbish	immunditia
chaisos	adI		ghwH ₂ y-so	beautiful	pulcher
chedhō	tr	AIa		pray	rogō
cheldi	neu			bile	fel
chelō	tr	AIa	H ₁ ghwel	desire	desiderō
chendō	cau			wound	feriō
chenmi	tr			murder	interficiō
chentis	fem	jo		death	nex
cherō	tr			warm	calefaciō
cheros	neu	es		heat	calor
chislom	neu			wire	filum
chŋnō	tr			deceive	fallō
chōks	fem	(chkos)	chōkeH ₁ ?	torch	fax
chonós	adI			abundant	abundans
chormos	adI			warm	formus
chornos	mas		chŋnos	hearth	fornus
chrensós	mas		chrensmós; cf. cherō	summer heat	aestus
chrjō	intr			be violent	furō
cícāmi	inc	BIIa	g ^w eH ₂	go away	abeō
cijā	fem			fold	ouīle
cínāmi	intr	BIVa		prevail	praeualeō
cīrós	adI			lush	laetus
cistis	fem			finger	digitus
cītā	fem		g ^w H ₃ itu-, g ^w H ₃ i-taH ₂ , g ^w H ₃ iwotā	life	uita
cīwāks	adI			lively	uūuax
cīwos	mas		g ^w H ₃ i-wo-	life	uita
cīwós	adI		g ^w H ₃ i-wó-	alive	uūuus

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cīwotos	mas			animal	animāl
cļā	fem			gullet	gula
cļājō	intr			fly	uolō
cļēnós	adI			tired	lassus
cļnāmi	intr	BIVa	g ^{wl} H	agonise	praepatior
cļturós	mas			vulture	uultur
cņtis	fem			march	itus
cobhōn	adI			viscose	conglūtīnōsus
coinos	mas			sack	saccus
colbhos	mas			womb	uterus
corós	mas			big eater	cibicida
cosdhos	mas			rod	uirga
cotējō	tr			mention	allūdō
cotlós	mas			swelling	tumōr
coucīs	fem			shit	merda
coudhros	adI			dirty	immundus
cówijā	fem			lapwing	uanellus
cowijós	adII			bovine	bouīnus
cówqolos	mas			herdsman	pāstor
cows	and			cow	bōs
cṛ(āw)ús	adI		g ^{wr} H ₂ -u/ g ^{wre} H ₂ u/ g ^{wre} H ₂ u; cṛ(āw)us	heavy	grauis
crθtos	adI		g ^{wr} H-tó	heavy	brūtus
cṛājō	tr		g ^{wr} H ₃	devour	uorō
crātós	adI		grH ₂ -to	welcome	grātus
cṛáwenus	mas		g ^{wre} H ₂ -n /g ^{wre} H ₂ -w	millstone	mola
cṛcestjom	neu			hovel	gurgustium
cṛcots	mas	(cṛcetós)		whirl	gurgues
cṛebhos	mas			embryon	foetus
creughos	adI		g ^{wru} -Hgh	sad	maestus
croghos	mas			Adam's apple	adamī malum
crotsos	adI			big	grossus
croughnos	adI			sorrow	maestitia
cṛús	fem	(cṛewós)		crane	grus
dā	ind			certainly	certō
daimoi	tr			divide up	distribuō
daitis	fem			time	tempus
daiwēr	mas	(daiwrós)		brother-in-law	leuir
dakru	neu	ew	akru /r̥k d - akru >drakru > dakru / skw- akru	tear	lacrima
dāmos	mas			mate	sodālis
dānus	mas			river	fluuius
dápnāmi	tr	BIVb		be expensive	carus esse
dapnom	neu			cost of a feast	impensa dapis

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daps	mas	dapós		banquet	daps
dáwētā	fem			torch	taeda
dáwetus	mas			conflagration	incendium
dáwneumi	tr	BIVb		scorch	accendō
dawtis	fem			fuel	cibus ignis
dē	ind			from upwards	dē
debhō	tr	AIa		knead	depsō
dedrus	mas			allergy	allergia
degā	fem			tick	rihipicephalus
deikmðn	neu			example	exemplum
deikō	tr	AIa		show	monstrō
deikos	mas			address	directiō
deiktis	fem		quoque diktis	indication	indicātiō'
deiwā	fem			goddess	dea
déiwijos	adII			godly	dīuus
deiws	mas			god	deus
deiwtāts	fem	(deiwtātjos)		deity	deitās
deiwots	adI	(déiwetos)		rich	dīues
dekējō	intr			be proper	decet
dekṃ	ind		dekm(t)	ten	decem
dékṃtulos	mas			finger	digitus
deknos	adI			worthy	dignus
dekos	neu	es		virtue	decus
déksteros	adII			right	dexter
deljō	tr	AIVc	dHl; del	calculate	calculō
delō	tr			split	abiungō
demos	neu	es		building	aedēs
denkō	tr	AIa		bite	admordeō
densō	tr	AIa		infere	dēdūcō
dentis	mas	jo	H1dont- H1dṇ t-	/ tooth	dens
derbhō	intr	AIa		turn	gyrō
derghō	intr	AIa		get cumulated	cumulō
derō	tr			separate	sēparō
deru	neu	(drewos)	derH-u; doru	wood	lignum
deukō	tr	AIa		drag	dūcō
deuks	and	(dukós)		leader	dux
deusō	tr			spoil	ruinō
dew	ind		dewH ₂ dweH ₂	far	procul
dh̥tis	fem			exhaustion	exhaustiō
dhabhros	mas			skillful	habilis
dhalnā	fem			vegetation	uiridia
dhanwos	fem			pinetree	abiēs
dhaunos	adI			predator	praedator
dhchínāmi	inc	BIVb		vanish	abeō
dhchitis	fem			destruction	dēlētiō
dhebhō	intr	AIa	Hdhebh	abuse	abūtōr
dhechō	dur	AIa		burn	ardeō
dhēdhjos				grandfather	auus

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dhedhmós	mas			decree	consultus
dheghom	mas	(dhghmos)	dhghmós	earth	humus
dheghwis	fem			inflammation	inflammātiō
dheicō	tr	AIa		puncture	figō
dhéicodhlā				brooch	fibula
dheimi	tr		dheH ₁	suck	sūgō
dhejō	tr	AIb		put	ponō
dhēlēiks	adI	(dhēlikós)		productive	fēlix
dhēlgs	fem	(dhl̥gos)		scythe	falx
dhēljōs	mas			baby	lactans
dhelō	intr	AIb		shine	splendeō
dhēlós	mas			teat	tetta
dhēm̥	neu			condition	habitus
dhemō	intr	AIb		steam up	uaporō
dhémonā	fem		dhēlus	female	femina
dhenghō	tr	AIa		press	imprimō
dhēnom	neu			produce of land	genitūra terrae
dhēnos	neu	es		interest	faenus
dherbhō	inc	AIa		start	functionem incipiō
dherghnos	fem			sloe	prūnus spinōsa
dherghō	tr			strengthen	corroborō
dherghos	adI			red	rūber
dherghs	fem	(dhrghos)		shit	excrēmentum
dherkō	cau	AIa		stain	maculō
dhermi	tr			retain	retineō
dhēs	mas	(dhasós)	dhH ₁ s-	duty (religious)	sacrificātiō
dhētis	fem	jo	dhHtí-, dheHti-	fact	factum
dheughō	intr	AIa		enough (to be)	sufficiō
dheukō	cau	AIa		destroy	conterō
dheunos	neu	es	dh(u)nH ₂	death	fūnus
dhewō	intr	AIb	dhewH ₁	run	currō
dhghesi	ind			yesterday	herī
dhghomōn	mas	(ghdhómenos)		human being	homō
dhghusā	fem			perch	perca
dhídhēmi- dhðkjō	tr	BI Ib / AIVb	dheH ₁	do	faciō
dhigsnis	mas	jo		end	finis
dhinghō	tr	AVIa		model	fingō
dhl̥eghlā	fem			debt	dēbitum
dhm̥is	fem			hunger	famēs
dhm̥os	mas			employee	famulus
dhñghus	adI			direct	directus
dhobos	adI			solid	solidus
dhochējō	cau			make hot	foueō
dhochos	mas		(dh)echr̥ (dh)ochr̥	/ day	diēs
dhoighos	mas			wall	moenia

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dholos	mas			hollow	cauitas
dhombhos	mas			dove	columba
dhōmós	mas			opinion	sententia
dhōnā	fem			cereal	cereāle
dhóncelos	adI			dark	fuscus
dhoncos	adI			dark	obscurus
dhónejā	fem			hollow	uōla
dhontis	mas	ej		fountain	fons
dhorjā	fem			diarrhea	diarhea
dhoubhos	adI			deaf	surdus
dhoubhús	adI		dhoubhus	black	āter
dhoubnom	neu			world	mundus
dhoulis			dhūlis	soot	fūligo
dhōunis	mas			strick	fūnis
dhraghō	tr	AIa		bring out	prōmō
dhreghō	intr	AIa		run around	circumcurrō
dhreños	mas			roar	gemitus
dhrensājō	intr			cry	densō
dhreughō	den	AIa		do service	military militō
dhrihsós	mas			bundle	fascis
dhṛmos	adI			steady	firmus
dhṛnumoi	intr	BIVb	dhrH ₃	jump	saltō
dhroghnom	neu			potter wheel	tornus
dhroghós	fem			wheel	rota
dhṛsō	tr	AIHh		dare	audeō
dhṛstis	fem			boldness	audacia
dhṛsus	adI			bold	audax
dhrubhjō	tr		dhrub(h)?	crumble	comminuō
dhrubhtis	fem	jo		drop	stilla
dhruslijō	tr			dismantle	dismontō
dhubús	adI		dhubus	deep	profundus
dhugtēr	fem	(dhugtrós)	dhugH ₁ ter	daughter	filia
dhūmājō	dur			smoke	fūmō
dhūmós	mas		dhuH ₁ -mo	smoke	fūmus
dhúneumi	tr	BIVb		agitate	agitō
dhuskos	adI			dark	fuscus
dhwerō	tr	AIa		deceive	defraudō
dhwestus	fem			fleabane	pulicāria
dhwolnos	adI			crazy	insānus
dhwolsā	fem			whirlpool	uertex
dhwonos	mas			sound	sonitus
dhworis	fem	ej	dhweris, dhur-	door	foris
dhworom	neu			courtyard	forum
dhwosos	mas		dhwosos (masc.) /dhwesos -es- (neut.)	demon	diabolus
dídjāmi	tr	BIIa	deiH ₂	conceive	concupere

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didkskō	tr			learn	discō
dighā	fem			goat	capra
djejō	intr			move	moueō
djēws	mas	(djwos)	dyeH ₁ -w	day	diēs
djnōs	fem		djnā	day	diēs
dļghējō	intr		dat	maintain	contineō
dļkus	adI			sweet	dulcis
dļlŋghos	mas			long	longus
dļlŋghotā	fem			length	longitudō
dŋmpedom	neu			building place	locus operum
dŋmpus	adI			rough	rudis
dŋmseghr	neu	dŋmseghnós		domain	dominium
dŋghwā	fem		dŋghu-H ₂ ; dŋt-ghuH ₂ ?	tongue	lingua
dŋsus	adI			thick	densus
dō	ind			to	ad
doklom	mas			tail	cauda
dolājō	tr			cudge	dolō
dolghos				dew	ros
dōljom	mas			barrel	dōlium
dolos	mas			fraud	dolus
dom	ind			still	dum
dómāmi	tr		dmH ₂	tame	domō
domos	fem	(domōs, dómewos)	domus	house	domus
dómūnā	fem			landlady	domina
dómūnos	mas			landlord	dominus
dōnom	neu		doH ₃ -no /doH ₃ -ro	gift	dōnum
dornom	neu			wrist	manicula
dōsos	mas			slave	seruos
dōtis	fem	jo		dowry	dos
dounom	neu		duHno-, dūno-	town	oppidum
dousmos	mas			bush	dūmus
dōusontos	mas			arm	braccium
drājō	intr			work	laborō
drappos	mas			drapery	drappus
drātis	fem			work	labos
drātór	mas	jo		workman	operārius
dṛdrājō	intr			murmur	murmurō
dremō (dídrāmi)	intr			run	currō
drepō		AIa		cut out	abscindō
dreughō	cau	AIa		beguile	dēcipiō
drewā	fem			course	cursus
drewō	tr	AIa		treat	consuēscō
drismós	adI			harsh	asper
dristos	mas			bramble	dūmus
dṛkjai peri	intr.			be visible	manifestor

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dr̥kjō	tr			make up	perspiciō
dr̥kō	tr			see	uideō
dr̥kos	mas			vision	faciēs
dr̥ksmos	mas			perspective	prospectus
dr̥ktā	fem			light	lūmen
dr̥ktis	fem			view	conspectus
dr̥ktis	fem	jo		seen	uisus
dr̥mijō	dur			fall asleep	obdormiscor
dr̥nos	mas		drH-nó	split	fragmentum
dsā	fem		dsH ₂	war	bellum
dumbos	mas			tail	caudula
dus	ind			bad	malē
dúsōpis	adI			precarious	precārius
duswids	adI			incompetent	inscius
dweimi	tr			fear	timeō
dwenos	adI			good	bonus
dwidk̥mtói	adII			twenty	uigintī
dwipods	adII	jo		biped	bīpēs
dwīs	lois			twice	bis
dwīskos	adI			matching	pār
dwīsnōs	lois			two each	bīnī
dwoiros	adI			fearful	dīrus
dwoplos	adII			double	duplus
dwóteros	adII			second	secundus
dwou, dwāu, dwou	adII			two	duo
ēchr̥jos	adI			drunken	ēbrius
edhlos	fem		H ₁ edh-lo-	elder	ebulus
edhr̥	neu	(édhenos)		palisade	uallum
edjēw	ind			today	hodie
edmi	tr		H ₁ ed	eat	edō
edqis, edqid	pron			someone	ecquis
edqos, -qā, -qod	pron			whether	ecquī, -quae, -quod
edunā				pain	dolor
egējō	den			lack	egeō
eghjōs	mas		H ₁ egh-yo / H ₁ ogh-i(H)no-	hedgehog	er
eghr̥	neu	(eghnós)		boundary	circumscriptiō
ēghwr̥	neu	(éghwenos)		drink	pōtiō
egnis	mas	jo	H ₁ eg ^w -ni-	fire	ignis
egō	pron	(mene)	egH(o) ₂	I	egō
ei	ind			that	ut
eibhō	intr	AIa	H ₁ eibh	fuck	futtuō
eikō	tr		H ₁ eik	have	habeō
eimi	dur		H ₁ ei	go	eō
eisā	fem			wrath	ira
eisāskai	inc			be angry	irāscor
eisom	neu			ice	gelū

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ek(sí)			H ₁ egh-si	outside	ex
eksoqs	adI	(éksoqjos)		invisible	inuisibilis
ekstar	neu	(ékstaros)	ek-stH ₂ -r, cf. enstar	remoteness	longinquitās
éksteros	adI		tab	external	exterior
ékstmos	adI			outermost	extimus
ektós	ind			excepted	praeter
ekwā	fem			mare	equa
ekwīnós	adII			of horses	equīnus
ekwos	mas		H ₁ ekwo-	horse	equus
ēlā	fem			bodkin	cuspis
elēn	mas	(alnós)	cf. alkis	red-deer	alcēs
elkos	neu	es		wound	ulcus
elkós	adI			bad	malus
ellus	mas	ew		eel	anguilla
elne elnā elnod	pron			that	ille illa illud
elóm	tr	(aor. a gesō)		conducted	gessī
elōr	mas	(éleros)		swan	olor
elwos				pink	rosaceus
emō	tr			take	emō
empis	fem			insect	insectus
en	ind			in	in-
enchis	fem	ej	H ₂ engwi- ; cf. oghwis	snake	anguis
endo	ind			inside	in
endósēdjom	neu			furniture	suppellex
enim	ind			and	et
enīqā	fem		eni-H ₃ k ^w -eH ₂	face	faciēs
enis	adII		tab	certain	quīdam
enkō prō	tr	AIa		drive	condūcō
ennós	adI			interior	interior
énsēdjom	neu			ambush	insidiae
enslā	fem			island	insula
enstar	neu	(énstaros)	en-stH ₂ -r, cf. ekstar	proximity	proximitās
éteri	ind			between	inter
éternos	adI			internal	internus
éterom	neu			interval	interuallum
éteros	adI		tab	internal	interior
éteros	adI		tab	intestine	intestīnus
entós	ind			inside	intus
éperom	neu			west	occidens
epi	ind		opi	on	insuper
épījos	adII		H ₁ eH ₁ p-i-	relation	adfinis
épiromos	adI		ópiromos	placed on top	supernus
ercom	neu		H ₁ ergwo-	pulse	erūm
erjos	mas		H ₁ er-	ram	ariēs
erkō	fac		H ₁ rk	share	commūnicō
ermi	intr		H ₁ rH ₁	rest	requiescō

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ermos	adI		H ₁ rH ₁ -mo-	abandoned	solus
ernos	adI			upright	arrectus
erō	tr	Ala		heave	erigō
éroros	mas		er-H ₃ ero-	eagle	aquila
erqō	intr	Ala	H ₁ erk ^w	shine	splendeō
ersā	fem		H ₁ ers-	tail	cauda
ersábhaljom	neu			tail	cauda
ersājō	den			wander	errō
erwā	fem			land	terra
esmi	dur		H ₁ es	be	sum
ēsmoi	intr			be situated	sum
esos	m		H ₁ esH-o-	housemaster	erus
ēsṛ	neu	(ésenos)	H ₁ esH-r	blood	sanguis
ēsús	adI		eH ₁ su- ?; ēsus	good	bonus
éteros	adII			second	secundus
eti	ind			even	etiam
etmṇ	neu	en		soul	animus
etō	intr	Ala		breathe	respirō
ētr	mas	ētenós	H ₁ eH ₁ -tr	inside	interior
ētros	adI		ātros ?	vivid	uiuidus
eukō	tr	Ala		be used	colō
eusō	intr		H ₁ eus	burn	ūrō
ewō	inc		H ₁ ew	get dressed	induō
extrōd	ind			from	ex
gálgaljō	intr			talk	garriō
galnos	mas			power	potentia
galnos	mas			gaul	gallus
gangō	intr			pin down	siffilō
gar	ind		ar ge	indeed	enim
garsijō	intr			talk	garriō
gaudhējō	intr			rejoice	gaudeō
gaudhjom	neu			joy	gaudium
ge	ind			at least	quīdem
geigō	den	Ala		be bitter	acūtus sum
geimō	intr	Ala		sprout	germinō
geisā	fem			gravel	calculus
geltis	fem			embryo	fētus
gelu	neu	ew		ice	gelū
gemō	tr	Alb		be loaded	grauātus esse
gemros	mas		gemHro-	son-in-law	gener
genesājō	cau			create	generō
gengā	fem			gum	gingiua
genjos	mas		comp. gnH ₁ yo-	gender	sexus
genmṇ	neu	en		germ	germen
genos	neu	es	genH ₁ os	kin	genus
gentis	fem	jo	genH ₁ iti- gnH ₁ iti-	/ family	familia
gentlom	neu		genH ₁ tlo-	birth	nascentia

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gentór	mas		genH ₁ tor	parent	genitor
gentríks	fem	(géntrijos)	genH ₁ triH ₂	parent	genitrīx
gentus	mas		genH ₁ tu-	procreation	genitus
genu	neu			knee	genū
genus	neu			maxilla	maxilla
gercō	tr	AIa	H ₂ ger	gather	cogō
gergō	cau	AIa		wind	contorqueō
gerjō	intr		H ₁ ger	wake up	expergīscor
gerlós	adI			old	senex
gerō	prog	AIa	gerH ₂	old (to become)	sēnēscō
gersā	fem			network	gerra
gerwós	mas			veteran	ueterānus
gesō	tr		H ₂ gs	wear	gerō
geulom	neu			glowing ash	fauilla
geustis	fem	jo		taste	gustus
gewō	intr	AIa		resound	resonō
ghǽbhējō	tr			own	possideō
ghǽrtā	fem			tip	cuspis
ghabhlo	neu			fork	furca
ghabhros	mas			goat	hircus
ghaidīnós	adII			goatish	haedīnus
ghaidos	mas			young goat	haedus
ghaisējō	den			stick	haereō
ghaisom	neu			spear	gaesum
ghaisom	neu			stick	pilum
ghaitā	fem			hair	capillum
ghálerom	neu			disgrace	labēs
ghanos	neu	es		yawn	hiātus
ghansōr	mas	er		goos	anser
ghastā	fem			spearshaft	hasta
ghawō	tr		ghH ₂ ew ghwH ₂ e	/ call	uocō
ghawōd	ind			not	haud
ghebhla	fem			head	caput
ghedō	tr	AIb		defecate	iunificō
gheidhō	tr	AIa		long for	auēō
ghei-ke ghāi-ke			tab	this	hic haec hoc
ghod-ke					
gheimr	neu	(ghéimenos)	gheims, ghjems	cf. winter	hiems
gheimrīnós	adII			winterly	hibernus
gheipō	intr	AIa		sob	hippitō
gheislos	mas		gh ^w eistlo- ?	hostage	obses
ghelbō	intr	AIa		boast	glorior
ghelijō	intr			growl	grunniō
ghelnom	neu			lip	labrum
ghelō	intr			incise	insecō
ghelus	fem			tortoise	testudō
ghelwos	neu	es		vegetable	olus

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ghelwos	mas		ghelHwos	green	uiridis
ghēmi	intr	BI Ib		arrive	perueniō
ghenghō	intr	AIa		step	uadō
ghēr	mas	(gherós)		hedg hog	ēr
gherdhō	tr	AIa		encircle	circumdō
gherghros	fem			pod	siliqua
gherijai	tr			desire	desiderō
gherō	tr			lend	commodō
ghertom	neu			butter	butyrum
gherús				small	exiguus
ghēsṛ	neu	(ghésenos)	cf. ghestos	hand	manus
ghesris	fem			glove	digitābulum
ghestos	neu		cf. ghēsṛ	hand	manus
ghētis	fem	jo		arrival	aduentus
ghetlā	fem			handle	stīua
gheughō	tr	AIa		veil	obumbrō
gheusō		AIa		hear	audiō
gheutis	fem			mould	fūtis
gheutlom	ðn			vase	bacārium
ghéwejā				hollow	fouea
ghewos	es			space	spatium
ghi	ind			certainly	certō
ghighejō	intr			come back	redeō
ghirrijō	intr			whine	hirriō
ghjājō	inc			gape	hiō
ghjems	mas	(ghjmos)	gheims; gheimṛ	cf. winter	hiems
ghlaghos	mas			crossbeam	patibulum
ghlastos	adI		ghl(H)-sto-	blue	caeruleus
ghlēiwos	adI			splendid	splendidus
ghlēmī	intr			glimmer	renideō
ghlenthō	tr	AIa		study	pertractō
ghleumi	intr			joke	nugor
ghloidos	mas			luxury	sumptus
ghloumos				joke	nuga
ghltnós	adII			golden	aureus
ghl̥tom	neu			gold	aurum
ghlustis	adI			flourishing	fluorescentia
gh̥ndhus	mas			cancer	cancer
gh̥ndō	tr	AVIc		receive	accipiō
ghneumi	tr	BI IIb		caress	mulceō
ghodos	mas			anus	ānus
ghoilos	adI			joyful	alacer
gholwā	fem		cf. ghelus 'testudō'	caluum caput	bald head
ghórdejom	neu			barley	hordeum
ghordhos	mas		cf. ghortos	enclosure	saep̥tum
ghoréjai	cau			encouragement	hortor
ghornim	ind			pleasantly	libenter

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ghoros	mas			intestine	intestīna
ghorsējō	cau			erect	horreō
ghortos	mas		cf. ghordhos	garden	hortus
ghosóm	tr	(aor. ab edmi)		ate	ēdī
ghóstipots	adII	jo		guest	hospes
ghostis	and	ej		foreigner	aduena
ghouros	adI			terrible	terrens
ghowējō	tr			pay attention	faueō
ghradjai	dur			step	gredior
ghrāsmṇ	neu	en		grass	grāmen
ghrāsom	ðb		ghreH ₂ -so	grass	herba
ghrebhō	tr	AIa		bury	inhumō
ghrēdhus	mas			hunger	fames
ghreibhō	tr	AIa	ghrbh / ghr-i-bh	seize	captō
ghreimðn	neu			ointment	unctiō
ghrējō	den			be empty	uacuu sum
ghremō	intr	AIa		grumble	fremō
ghrendhā	fem			cornice	corona
ghrendhos	neu	es	ghrōnā	lock	cirrus
ghrendō	intr	AIa		gnaw	frendō
ghrewō	cau	AIa		grind	conterō
ghrewō				fall into	ingruō
ghromos	mas			roaring	fremitus
ghronos	mas			mark	signum
ghroudos	mas			ball	pila
ghrowā	fem			pebble	calculus
ghudjō				do harm	damnō
ghundō	cau			pour	fundō
ghwerā	fem			beast	fera
ghwērínós			ghwerínós	beastly	ferínus
ghwērós	adI		ghwēr; ghwer; ghwerós	wild	ferus
ghwobhros	mas			smith	faber
gibbā	fem			hump	gibba
gignō	cau		genH ₁	beget	gignō
gigrós	adI			sharp	acūtus
gjewō	tr	AIa		chew	mandō
glðgjēs	fem			ice	glaciēs
glabhō	tr			plane	ēfodiō
gladhros	adI			even	glaber
glaghá	fem			protest	querēla
glakti	neu			milk	lac
glegos	adI			docile	infirmus
gleibhō	tr	AIa		adhere	adhaerō
gleis	mas	(glisós)		mouse	glis
glēkis	adI			intelligent	callidus
glembhō	cau	AIa		include	inclūdō
gleubhō	tr	AIa		peel	glübō

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glínāmi	intr	BIVa		stick	adhaerō
globhos	mas			globe	globus
glōghis	fem			point	cuspis
gloidos	mas			rubber	glūtinum
gloijós	adI			sticky	glutinoosus
gloitṇ	neu	gloitnós		glue	glūten
glokijō	intr			clack	glociō
glomos	neu	es		yarn	glomus
glōs	fem	(glēsos)	gH ₂ lōw	sister-in-law	glōs
glujō	tr	AIIIu		swallow	glūtiō
gnājō	tr			produce (to)	gignō
gnāmi	tr		knH ₂ ; cf. kanmā, ḱmā, knāmā	gnaw (to)	adrōdō
gnās	m/f	(gnājós)		offspring	prōlēs
gnāskai	inc		gnH ₁ -eH ₂ -sk	be born	nāscor
gnātós	adII		gnH ₁ -tó; comp. -gntó-	born	nātus
gnebhis	fem			fleece	uellus
gnebhō	tr	AIa		pluck	uellicō
gneibhō	tr	AIa		raze	rādō
gneichō	intr	AIa		lean	nītor
gneidō	tr	AIa		scrape	abrādō
gnōros	adI			evident	euidens
gnos	ad		in compositionē	native	ingenuus
gnōtis	fem			knowledge	nōtiō
gnōtlom	neu			sign	signum
gnōtór	mas			knower	nōtor
gnōtós	adI		gnH ₃ tós	known	nōtus
gnoubhos	mas			bud	geniculum
gnōwos				wise	nāuus
golbhnos	mas			dart	acūmen
gombhos	mas			jaws	dentes
gomos	mas			load	onus
gonējō	tr		gonH ₁ -eio/e-	produce	generō
gopos	mas			jaws	fauces
gorbos	mas			wrinkle	rūga
gorgnóm	neu			sadness	tristitia
gorgós	adI			sad	tristis
goulos	mas			oral	buccale
gouros	mas			crimpy hair	turbidō
grakijō	intr			cackle	gracillō
grammā	fem			rheum	grāmiaie
grānom	neu		grH ₂ -no-	grain	grānum
grbeinā				hornbeam	carpinus betulus
grbējō	den			have wrinkle	rugātus sum
grbhō	tr	AVIII		scratch	charaxō
grebhos	mas			net	rēte

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gredō	tr	AIa		scratch	scabō
gregs	mas	(grēcos)	H ₂ greg-	herd	grex
gremjom	neu			lap	gremium
grendjom				crown	corōna
gretlom				cradle	cūnae
greubhō	dur	AIa		go aside	mē auertō
greugō	intr	AIa		bend	curuō
greumō	tr	AIa		scrape off	abrādō
greutō	intr	AIa		solidify	solidificō
gr̥ndhís	adI			grown	grandis
grōbhos	fem			oak tree	quercus suber
grōdis	mas			hail	grandō
groumos	mas			crumb	grūmus
grundijō	intr			grunt	grunniō
grutis	fem			curd cheese	lac passum
gudom				bowels	intestīnum
gugā	fem			ball	globus
gupā	fem			cellar	pitheūs
gurnos	mas			back	dorsum
gusnō	tr			taste	gustō
gutṛ	mas	(gútenos)		throat	guttur
idhei	ind			there	ibī
ikjō	tr		H ₂ yk	reach	ic(i)ō
ili	neu	(ílijos)		groin	intestīnum
iljō	tr	AVIII (lām-loja-leisō)	H ₁ lH ₂ redupl. H ₁ i-H ₁ lH ₃	send away	amandō
imde	ind			from there	inde
immō	adII			more than that	immō
ínekmi	tr	BIle	H ₁ nk	convey	apportō
ipjō				oppress	opprimō
is, id	pron		tab	this	is, ea, id
īsarnom	neu			iron	ferrum
ita	ind		itH	so	ita
itājō	freq			journey	itō
itaqe	ind			and also	itaque
íteros	adII			different	differens
itim	ind			likewise	item
itṛ	neu	(ítenos)		way	iter
jðkējō	den			throw	iaceō
jðkjō	tr			eject	iaciō
jagjō	tr		jH ₂ g-jo/e	worship	uenerō
jāgjus	adI		jeH ₂ g-ju-	pious	pius
jāi	ind			yes	certō
jālos	mas			conspiracy	coniurātiō
jāmi	intr		yH ₂	pass	transeō
jāmi	ind			already	iam
jáneumi	tr	AIVb	ieH ₂ ; iH ₂ neumi	conspire	coniurō

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jánuwā	fem			entrance	iānua
jeghō	tr			persecute	persequor
jegis	mas	ej		ice	glaciēs
jekō	tr	Alb		tell	narrō
jekos	adI			healthy	sānus
jēlom	neu			desert	desertum
jemō	tr			hold (to)	contineō
jemós	neu			twin	geminus
jentēr	mas	(jentrós)		cousin	cognātus
jeqr	neu	(-óneros)		liver	iecur
jesō		Alb		ferment	fermentō
jeunis	fem			right way	uia recta
jeus	neu	(jusós)		broth	ius
jewesdiks	adII	jo		judge	iudex
jewō	intr	AIa		help	adiuuō
jewom	neu			barley	hordeum
jéwornjom	fem			cereal	cereāle
jewos	neu	(jéwesos)		law	iūs
jndros	adI			exuberant	laetus
jntō	tr	AVIa		desire eagerly	auēō
jod qid	ind			because	quia
jodhei	rel			where (rel.)	ūbī
joinkos	mas			bulrush	iuncus
jom	rel			when	cum
jomde	rel			from which	unde
joqe	ind			and	et
jori	rel			wherefore	quapropter
jorkos	mas			roe buck	gazella
jōrom	neu		yeHro-	season	tempus
jōrós	mas			conspirator	conspirātor
jos (je), jā, jod	rel		tab	that, the one that	is quis
jósneumi	tr	BIVb		begird	cingō (to)
jota	rel			how	quōmodo
jota sei	ind			alike	quasi
jóugsmntom	mas			beast of burden	iūmentum
jówestos	adI			just	iūstus
jucis	adII		H ₂ yu-gwiH ₃	eternal	iūgis
judhējō	tr		kwid kwismeī	command	iubeō
jugóm	neu			yoke	iugum
jungō	tr			join	iungō
júwenis	adII			young	iuuenis
juwes / juwe	pron		tab	you	uōs
juwṇkós	adII		H ₂ iw-wHṇkó-	young	iuuenis
júwṇtā	fem			youth	iuuentus
juwōn	adI	(júwenos)	H ₂ iw-wHen--	young	iuuenis
kəldos	mas		cf. kəldis	wood	lignum
kəpjō	tr		kHp	catch	capiō
kəpsā	fem			box	capsa
kəptos				captive	captus

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kə̌sējō	den			lack	careō
kə̌stos	adI			pure	castus
kə̌wējō	den			beware	caueō
ka	ind			certainly	sīc
kábn̄los	mas			colt	equulus
kabōn	mas	(kábonos)		horse	equus
kadhō	tr			keep	praeseruō
kadō	prog			fall	cadō
kādos	neu	es		trouble	cūra
kadros	adII			saint	sanctus
kaghlā	fem			opening	caula
kaghos	mas			enclosure	claustrum
kaidō	cau			cut	caedō
kaikos	adI			blind	caecus
kailom	neu			augur	augurium
kaipā	fem			onion	caepa
káisrjēs	fem			long hair	caesariēs
kaisrom	neu			hair	capillum
kaitom	neu			heath	silua
káiwelos	neu			exclusive	exclusōrius
kákabā	fem			partridge	perdix
kakkājō	intr			defecate	cacō
kaklājō	intr			cackle	cacillō
kákneumi	tr	BIVb		promote	foueō
kakō	cau			thinnen	tenuefaciō
kaldējō	den			be experienced	calleō
kaldos	mas			blister	callus
kalēiks	mas/ fem	(kalikós, kalijós)	kalīks	cup	calix
kalgōn		(kálgenos)		fog	cāligo
kālis	fem			spot	macula
kalkis				heel	calx
kalwos	adI		kḷHwos	bald	caluus
kambos	adI			bent	tortus
kāmi	tr			love	amō
kamō	tr		kH2m	press tightly	comprimō
kampos	mas			land	campus
kánāmi	tr	BIIIa		dig	fodiō
kandō	tr			glow	candō
kánkestos	mas			colt	equulus
kankus	mas		kanku /kākā	branch	ramulus
kanmā	fem		knH2; kn̄H2mā, knāmā, knH2mi-; cf. gnāmi	leg	crus
kanm̄	neu	(kánmenos)		song	carmen
kanō	intr			sing	canō
kantos	mas		cf. witus	wheelrim	cantus

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kaplos	mas		cf. skāpos	tool	instrumentum
kāpos	mas			land estate	fundus
kaprā	fem			goat	capra
kapros				goat	caper
kaput	neu	(kaputós)		head	caput
kareinā	fem		Har-	keel	carīna
karkar	mas	(karkarós)		fortification	mūnitūra
kárkarjō				announce	nuntiō
karkros				crab	cancer
karnājō	tr	AIIIa		pin down	carinō
karōn	fem	en		limb	membrum
kāros	adI			beloved	cārus
karpō	tr			collect	carpō
kárrēkā	fem			rock	rūpēs
kartús	adI		kartus	hard	dūrus
kasnos	mas			grey	cānus
kasterlom	neu			castle	castellum
kastra	neu	(kastrōm)		camp	castra
kastrājō	tr			encamp	castrō
katēsna	fem			chain	catēna
katos	mas			fight	pugna
katsājai	intr			meet	congregior
katsājō	tr			gather	cōgō
kattā	fem			cat	fēlēs
kaukos	mas			vessel	collectāculum
kaulis	fem			cabbage	caulis
kaunós	adI			shameful	puđendus
kawdō	tr	AIIa	kH ₂ w-d	hit	cūdō
kawō	tr	AIIb	kH ₂ w	hit	cūdō
káwonā	fem			owl	noctua
ke kā kod (eke ekā ekod)	pron			this	hic hae hoc
kei	ind			here	hic
keidō	intr	AIa		go down	descendō
keimēx	mas			bug	cīmex
keimoi	inc			lie	iaceō
keimos	neu	kéimesos		colorant	colorans
keiros	adI			dark	obscurus
kéiwijos	adII			civil	cīūlis
keiwis	and	ej		citizen	cīuis
kekājō	tr			bind	nectō
kekātriks	fem	(kekātrikós, kekātrijós)		scar	cicatrix
kekō	intr			leap	saltō
kékuros	adI			tame	cicur
kēlā	fem			chamber	cella
kēlājō	cau			hide	cēlō
keldō	tr			strike	percellō
kelgā	fem			mystery	mysterium

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kéliknom	neu			penthouse	cēnaculum
kelmos	mas			helmet	galea
kelō	tr			push	impellō
kélodhros	mas			snake	coluber
kēlom	neu			arrow	sagitta
kelots	mas	(kéletos)		boy	ephebus
kelsō	intr	AIa		be high	excellō
kelujō	intr			travel	iter facere
kelus	fem			road	uia
kémelom	neu			heaven	caelum
kémeros	fem			lotus	lotus
kemjō	tr			hum	cantillō
kemō	intr	AIb		strain	adñitor
kemos	adII			hornless	incornis
kenēs	fem	(kensós)		ash	cinis
kenkai	intr			hesitate	uacillō
kenklom				tendon	tendō
kenkō	inc	AIa		weigh	pendō
kenkos	mas			hook	hamus
kenō	intr		knjō	arise	oborior
kentom	mas			rag	pannus
kentrom	neu			prick	centrum
kepō	tr			do harm	infensō
keqō	tr	AIa		dirty	mancillō
kerðsrom	neu		kerH-s-ro-	brain	cerebrum
kérberos	mas			weasel	mustela
kerdhjos	mas			herdsman	pāstor
kerdhō	tr	AIa		range (to)	ordinō
kerdhos	mas			group	grex
kerdos	neu	es		profession	ars
kerkō	inc	AIa		grow thin	tenuescō
kerkos	fem			hen	gallina
kernos	mas			excavator	pāla
kernós	mas			frozen snow	nix gelāta
kerom	neu			hair	caesariēs
kersnā	fem			dinner	cēna
kersō	tr	AIa		mutilate	mutilō
kersr̥	neu	(kersenós)	kersr̥ , kersn̥, kerH1os	head	caput
kerwos	mas		kerH2wo-	deer	ceruus
kesdō	intr			withdraw	cēdō
kēsmi	tr		ke(k)Hs-mi	restrain	reprimō
kesnus	mas			garlic	āl̥ius
kesō	tr			comb	pectō
kētjā	fem			room	cubiculum
keubō	cau	AIa		curve	curuō
keudhō		AIa		hide	abdi
keukō	dur			warp	inflectō
keulom	neu			swelling	turgentia

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keusō	tr		keusH	rent	locō
kēwējō	intr			sway	oscillō
khákhathnos	mas			laugh	cachinnus
khamos	mas			hook	hāmus
khéderos	fem			ivy	hedera
kighrós	mas			agitated	agitātus
kikēr	mas	(kikrós)		pea	cicer
kíkeumi	intr	BIIIb		become vigorous	uigescō
kikjā	fem			woodpecker	pīca
kiklēsķō	tr	(kiklēwa)		invoke	inuocō
kiklós	adI		kelH	cold	frīgidus
kíkōnjā	fem			stork	ciconia
kīkus	mas	(kī´kewos)		muscle	mūsculus
kina	ind			from this side	hinc
kingō	tr			gird	cingō
kintos	adII			previous	praeecēdens
kippos	mas			peg	cippus
kirknos	mas			compasses	circinus
kirkos	mas			circle	circus
kiskā	fem			biceps	biceps
kistā	fem			basket	cista
kíteros	adI			of this side	citer
kitōd	ind			immediately	citō
kitrōd				towards this side	citrō
kiwos	mas			colour	colōr
kjējō	cau			activate	ciō
klādis	mas			damage	clādēs
kladjos	mas			sword	gladius
klagjō	intr			clang	clangō
klāmājō	intr			yell	clamō
klambós	adI			mutilated	mutilus
klāmi	tr			embank	aggerō
klamrós	adI		klmH ₂ -ro	weak	dēbilis
klāros	mas			tablet	tabella
klaudos	adI			lame	claudus
klawdō	tr			close	claudō
klawos	mas			nail	clāuus
klāws	fem	(klāwós)		key	clāuis
klawstós	adI			closed	clausus
kļdis	fem		kəlnis?; kəldos	cf. mountain-path	callis
kleinos	fem			maple	acer
kleitis	fem			hut	casa
klējō	den			be hot	caleō
klējō	tr		klH ₁	name	nōminō
klepō	tr	A1a		steal	clepō
kleumi	neu		kluH	listen	audiō
kleumņ	neu			hearing	audītus
kléumņtom	neu			reputation	reputātiō

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kleusō	tr	AIa		obey	oboediō
kleustis	fem		klustís	obedience	oboedientia
kleutis	fem	jo	quoque klutis	listening	audientia
kleutō	tr	AIa		raffle	sortior
kleutrom	neu			story	historia
klewō	tr	AIa		wash	purgō
klewos	neu	es		glory	gloria
klínāmi	cau			cause to slope	clinō
klisrós	adI			gentle	gentilis
kljō	tr		(s)kel	divide	diuidō
kļneumi	tr	BIVb*	kleuH <*kl- ne-uHmi	hear	audiō
klŋgō	intr	AIIC	klH ₁ -g	sound	clangō
kloiws	adI		kloinos	steep	clīuus
klopnis	fem	jo		valley	uallis
klounis	fem	jo		buttock	clūnis
kļpros	mas			wine-cask	cupa
kl̥tos	adI			hot	calidus
klūtós	adI		kluH-tó	famous	auditus
kluwējō	den			hear	clueō
kļwijō	tr			defame	difāmō
kmāmi	prog		kmH ₂	get tired	dēfetiscor
k̥mertos	mas			lobster	langusta
k̥pros				curved	camur
k̥pti	dh°r			with	cum
k̥ptom	ind			hundred	centum
knakos	adI		knH ₂ -ko	yellow	glaesus
kn̥jós	adI			recent	recens
kn̥ksos	mas			articulation	artus
knokos	mas			neck	ceruix
knouks	fem	(kneukos)		nut	nux
kn̥sējō	tr			opinate	censeō
kn̥stōr	mas		kenstōr	spokesman	orātor
knuwā	fem			walnut	nux
kobom	neu			success	euentus
kodejō	tr			thurify	turificō
koilús	adI		koilus	healthy	sānus
kóilutāts	fem	jo		health	ualētūdō
koimā	fem			agreement	pacta
koimos	adI			lovely	cārus
koinos	mas			foenum	hay
koisā	fem			occupation	cūra
koitús	fem	(koitewós)		manner	modus
koksā	fem			hip	coxa
kolignos	mas			dog	canis
koljō	tr			stick	adhaerō
kolm̥	neu	en		summit	culmen
kolmos	mas		kolH ₂ -mo-	stalk	calamus

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kolnis	fem	ej	kolH-ni-, kH - ni-, kolH-wi, kolH-wo	hill	collis
kolnom	neu			pile	sublīca
kolnos	adII			one-eyed	unioculis
kolsos	mas		nōn qolsos quoniam gmc. nōn *hw incipit	neck	collum
kólumbhos	mas			dove	columba
kom	ind			with	cum
kómāglom	neu			collection	collectiō
kómjougos	mas			union	coniunctiō
komjugs	epi	komjugós		consort	coniux
kómmoinis	adII			common	commūnis
kommoinitāts	fem	jo		community	commūnitas
komnom	neu			meeting	congregātiō
kómnōmṃ	neu			surname	cognōmen
kómopjom	neu			equipment	armāmenta
kōmos	mas			mass	globus
kómplēnos	adII			complete	complētus
kómsqr̥tos	adI			perfect	perfectus
kómtl̥tis	fem			patience	patientia
komtrōd	ind			against	contrā
kómwoirjom	neu			court	curia
kómwoistis	fem			conscience	conscientia
kōnājai	inc			try	cōnōr
konkējō	cau			burn	combūrō
konkhā	fem			shell	concha
kōnos	mas			top	turbēn
kophos	mas			hoof	ungula
kopnos	mas			haven	portus
kógros	mas			dirt	immunditia
koreibs	mas	(koribós)		thread	quālus
koris	12			acarian	acarus
korjom	neu			leather	corium
korjos	neu			army	exercitus
korkos	adI			mud	caenum
kormnos	mas			bleach	aqua lixiuia
kormōn	mas	(kórmenos)		ermine	mustēla erminea
kormos	mas			pain	dolor
kornīks	fem	(kornikós, kornijós)		crow	cornīx
kornos				cherry tree	cornus
kórukos	mas			bag	saccus
korwos	adI		korw-, korweH₂	raven	raucus
kósolos	fem			hazel	corilus
kostā	fem		H₃osteH₂	rib	costa

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koubos	mas			joint	artus
koupā	fem		kūpā	cup	cūpa
koupnā	fem			lot	copia
koutā	fem			hut	mapālia
kowos	adI			hollow	cauus
kowr	neu	(kówenos)	kuH ₂ -r	cavern	cauerna
krāmi	tr	Bib / BIVa	krH ₂ / kṛneH ₂	mix	permisceō
krasi	ind			tomorrow	cras
krāsrōn	mas	en		bumblebee	crābrō
krātis	fem	ej	krH ₂ tis	network	crātis
kratsos				plump	crassus
kṛdén		krdnos		hinge	cardō
kṛdhōn	mas	(kṛdhenós)		carbon	carbō
kṛdi / kṛdjom	neu	(kṛdejós / kṛdjī)		heart	cor
kṛdijai	prog			get angry	stomachor
kṛdjō	intr		krH-d	rock	trepidō
kṛdsus	fem			shirt	camisia
kréddhēmi	tr		krd dhH ₁ /dhH ₃	+ believe	crēdō
kreidhrom	neu			sieve	crībrum
kreimṇ	neu			crime	crīmen
kreitsō	intr	AIa		shake	agitor
kekō		AIa		weave	texō
kremājō	cau			burn	cremō
krēmi	tr		krH ₁	create	creō
kremom	neu			beer	ceruisia
krémusom	neu			onion	caepa
krenghos	mas			ring	anus
krenktis	fem			scar	cicātrix
krépāmi	intr			crackle	crepō
krepo	intr	AIa		precipitate	praecipitor
krēqā	fem			border	limēs
krēskō	prog			grow	crēscō
krētā	fem			chalk	crēta
kretō	tr	AIa		cut	exsecō
kreugō	intr	AIa		cry	gemō
kreuks	fem	(krukós)		cross	crux
kreumi	tr		kru-H	stock	dēpositō
kreupō	inc	AIa		get encrusted	incruster
kreutō	tr	AIa		agitate	permoueō
krēwō	tr	AIIf		touch	commoueō
krigā				cry	clamor
krinō	tr		kry; tab	sieve	crinō
kripsos	adI			curly	crispus
krisnis	fem	jo		mane	crīnis
kristā	fem			crest	crista
kristājō	cau			shuttle	agitō
kritis	fem			difference	differentia

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krjēs	fem			rot	cariēs
krklos	adI			slender	gracilis
krnāmi	tr		krH ₁	rot	corrumpō
krnos	adI			rotten	corruptus
krnu	neu	krnewós	tab	horn	cornū
krōbhtus	mas			devotion	dēuotīō
krokijō	intr			shriek	crociō
kroknos	mas			anorak	peplum
krotjājō	tr			shake	agitō
krous	neu	(kreusos)		leg	crūs
krowos	mas			shelter	refugium
krpjōs	mas		krH ₂ pjo-; krāpjo-	shoe	calceus
krpos	neu	es		body	corpus
krsejō	den			be scratched	carreō
krsnos				black	āter
krso	tr	AIHh		run	currō
krstus	mas			course	cursus
krsus	mas			cart	currus
krustā	fem			icicle	crustula
krūtis	fem		krūtis	dome	cupula
kruwós	mas	es	kr(e)uH ₂ -	blood	cruor
krwos	adI			curved	curuus
kselwā	fem			forest	silua
ksentis	fem			briar	sentis
kserós	adI			dry	siccus
kserós	adI		kse-ró	arid	aridus
ksnowājō	tr			shave	abrādō
ksnowātlā	fem			razor	nouācula
kúbāmi	den			lie	cubō
kudājō	intr			reprove	orbiurgō
kukulājō	intr			cockoo	cucu facere
kukūlós	mas			cockoo	cucūlus
kulā	fem			hiding place	latebra
kūleks	mas	(kūlkós)		gnat	cūlex
kūlos	mas			ass	cūlus
kumbhā	fem			pot	catinus
kumbō	intr			recline	accumbō
kúnejos	mas			wedge	cuneus
kupjō	tr			demand	exigō
kurnos	mas			foal	pulllus
kusdhos	mas			treasure	thesaurus
kusis	mas			kiss	basium
kūtis	fem	ej	kūtis	skin	cutis
kuwējō	den			be pregnant	gravidus sum
kuwos	mas			whelp	catulus
kúwros	adI			powerful	potens
kwatsos	mas			cheese	caseus
kweidos	mas			white	candidus

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kwōn	mas	(kwnos)		dog	canis
ləbjom	neu			lip	labrum
ləkesājō	cau			tear	lacerō
ləkjō				trap	laciō
ləkós	mas			tearing	lacerātiō
lənchijóm	neu			lung	pulmō
ləpējō	den			be flat	plānus sum
ləpods	mas	(ləpedós)		stone	lapis
ləskējō				fancy	lasciuiō
lətējō	den			be concealed	lateō
labhō	tr			take	emō
laghā	fem			spade	pāla
lāgō	intr	AIle	(s)leH2g; cf. lṅgwō	droop	ēlanguescō
laiwos	adII			left	laeuus
lājō	tr			scold	obiurgō
lajos	neu			fat	adepts
lakertos	mas			forearm	lacertus
lakuš	mas	ew		lake	lacus
lalājo	intr			babble	blaterō
lalu	ind			penis	pēnis
lāmā	fem			poodle	lāma
lámṇtom	neu			tell off	obiurgātiō
landhom	neu			frypan	sartagō
lāōs	mas	(lāesos)		home god	lār
lāpos	mas			cow	bōs
lapsā	fem			lamp	lampās
latēks	mas	latkos		liquid	latex
latom	mas			day	dies
lawō	tr		lH ₂ ; abl.	benefit	fruor
lāwós	mas		leH ₂ wó-	team	squadra
lawtlom	neu			benefit	lucrum
ledō	tr		lH ₁ d	release	āmittō
leghō	den			lie	occubō
leghos	neu	es		lay	fulcrum
legnskā	fem			settlement	sēdēs
legnskós	adI			lazy	pīger
leghtrom	mas			support	destina
leghús	adI		cf. ḡlghros; leghus	light	leuis
légneumi	tr	BIVb		wring out	ēguttō
legō	tr			collect	legō
legs	fem	(lēgos)		law	lēx
leibs	mas	(libós)		drop	gutta
leidō	pro	AIa		happen	accidō
leiglā	fem			spoon	ligula
leigō	intr	AIa		jump	saliō
leiljom	neu			lily	lilium
leimos	mas			mud	līmus

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leinō	tr	A1a		avoid	uitō
leinom	neu			flax	linum
leipā	fem			lime-tree	tilia
leisā	fem			parterre	lira
leitos	neu	léitesos		seaside	litus
lembō	tr	A1a		hang	suspendō
lēmi	tr	Bic	lH	grant	indulgeō
lemsos	mas			phantom	phasma
lendhā	fem			spring	fons
lēnis				weak	lēnis
lentos	fem			juniper	picea
lepō	intr			stutter	balbutiō
lergos	adI			flat	plānus
lesō	tr			pick	carpō
leswos	adI			middling	sublestus
lētis	fem			concession	indulgentia
letrom	neu		CELT. *pletro- ?, cf. lat. pellis	leather	corium
leubhos	adI			dear	cārus
léudheros	adI		H ₁ leudh	free	liber
leughō	intr	A1a		lie	mentior
leukō	intr			shine (to)	luceō
leukós	adI			bright	lucens
leuks	fem	(lukós)		light	lux
leuksmṇ	neu	en		light	lūmen
leups	mas	(lupós)		leaf	folium
lēwanks	fem	(leewankós)		slate	ardesia
ligājō	tr			bind	ligō
likējō	tr			be allowed	licēt
limpō	den			stick	haereō
linghō	tr			lick	lingō
līnō	tr		liH; lināmi	oint	linō
līnós	adI			ointed	litus
linqō	tr			leave	linquō
lippā	fem			rheum	lippa
liprós	adI		lipH ₂ ró	greasy	adipōsus
litājō				appease	litō
litwos	mas			rod	lituus
lmbō	tr			sip	lambō
lṇcō	cau	AVIc	(s)leH ₂ ; cf. lāgō	tire	fatigō
lṇghros	adI		cf. leghús	light	leuis
lōbā	fem			crime	dēlictus
lodi	neu			late	tarde
loghjom	neu			site	situs
loghos	mas			deposit	dēpositus
loigos	mas			calf	uitulus
loigós	mas		H ₃ loigo-	penury	lack
loiqnom	neu			lend	commodātus

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loiqós	adII			remaining	reliquus
loisā	fem			tablet	līra
loisós	adI			mild	mitis
loksos	mas			lax	salmō
loksós	adI			slanting	obliquus
loktos	mas		loktus	fault	culpa
londhom	neu			land	regiō
londhwos	mas			hip	lumbus
longhros	mas			worm	lombrīcus
lordós	adI			twisted	tortus
lorgā	fem			footprint	uestigium
lorgos	mas			club	uirga
lostos	mas			spear	hasta
loudis	mas	ej		praise	laus
loughjom	neu			oath	sacramentum
loukējō	tr			illuminate	ilūminō
loukētjos	adI			radiant	splendidus
loukos	mas			glade	saltus
loukós	mas			radiance	splendor
louksā	fem			window	fenestra
louksnā	fem			moon	lūna
louksos	mas			lynx	lynx
lousēn	fem	(lusnós)		louse	pedis
loutsā	fem			whore	merētrix
lowā	fem			hair	coma
lowō	tr		lH ₃ w	wash	lauō
lowtrom	neu			bath	lābrum
lubhējō	tr			like	libet (mihi)
lubhjā	fem			herb	herba
lubhros	mas			bast	liber
ludhóm	intr	(aor. a cemjō)		went	iī
lugējō	den			be broken	fractus sum
lugjā	fem			hole	ōrificium
lugnós	adI			flexible	flexibilis
lugtos	mas			multitude	copiae
lukējō	den			shine	luceō
lukskējō	tr			light up	incendō
lūnós	adI			unbound	solūtus
lūtós	adI			unbound	solūtus
luwō (lewō)	tr		lwH	unbind	luō
luwō apó	tr			acquit	absoluō
mðdējō	den			be wet	madeō
mðglos	adI			noble	nōbilis
mðgnánðmos	adI			magnanimous	magnanimus
mðgnos	adI		mH ₁ -g-nó / mH ₁ -gH ₂	big	magnus
mðgsi	ind			more	magis
mðgtājō	tr			honour	mactō
mðrnamói	tr		-nH ₂ moi	plunder	exspoliō

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machos	mas		maghu-	youngster	iuuenis
machotis	fem			youth	iuuentūs
mághneumi	tr	BIVb		defend	dēfendō
maghos	mas			field	pratum
magō	tr			form	configurō
mājō	prog			prosper	mātūrō
mākājō	cau			pit	maciō
makēn	mas		(maknós)	pouch	crumēna
mākesjā				wall	mūrus
mákōn	mas	mákenos		poppy	papauer
makrós	adI			slender	macer
mammā	fem			mum	mamma
mān	ind		meH ₂ n	so	etenim
mānājō	intr			spring	mānō
mánnusos	mas			man	homō
mānos	adI			good	bonus
maqā	fem			girl	puella
maqos	mas			boy	ephebus
máreskos	mas			marsh	mariscus
margōn	mas	margenós		boundary	margō
mari	neu	ej		sea	mare
markos	mas			horse	equis
masdos	neu			mast	mālus
mātējō	tr			designate	dēsignō
māter	fem	(mātrós)	meH ₂ -ter-	mother	māter
māterós	mas			solid	solidus
māterterā	fem			aunt	mātertera
matlā	fem			hammer	malleus
mauros	adI			gloomy	fuscus
ṃbhros	mas		cf. nebh-	storm	imber
me	pron		H ₁ me; aton.	me	mē
mē	ind			not	nē
medai	intr		mH ₁ d; cōgit.	ponder	medeor
medgós	mas			gull	mergus
médhidjōws	mas			midday	meridiēs
medhjōs	adII			middle	medius
medhu	neu	ew		mead	mel
medjom	neu			acorn	glans
médneumi	tr	BIVb		administrate	administrō
médodiks	epic		med- / mēd- cf. regs	doctor	medicus
mēdos	neu			valuation	aestimātiō
meicō	intr	AIa	H ₁ myg ^w	move	mutō
meidō	tr	AIa	mei /meid	scrath out	desculpō
meidos	neu			prestige	auctoritās
meilēts	mas	(meiltós)		warrior	milēs
meinom	neu			purpose	propositiō
meitō	den	AIa		lack	dēsum

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meitrom				agreement	contractus
meiwijós	adI			smaller	minor
mejājō	intr		mínāmi	flow	meō
mejnō	inc	AIa		change	mūtō
mejō	inc			exchange	mūtō
mejtis	fem	jo	quoque mjtis	shift	permutātiō
mēknos	mas			lip	labrum
meldhjá				thunderbolt	fulmen
meldhō	intr			pray	precor
melit	neu	mélitos		honey	mel
meljom	neu		-	millet	milium
melkō	tr	AIa		rub	mulceō
melmṇ	neu			article	articulus
melō	tr	AIb		grind	molō
melos	adI			strong	robustus
melsō	tr	AIa		deceive	mentior
melwom	neu			flour	farīna
membhō	tr	AIa		punish	puniō
mēmi	tr			measure	metior
mēmsóm	neu		memsóm	meat	carō
mendhai	intr		cogit.	be interested	interest
mendhō	tr	AIa		stir up	torqueō
mendō	tr			suck	sūgō
mendom	neu			fault	mendum
menghos	adI			frequent	frequens
mengō	tr	AIa		disguise	uestiō
menis	mas			dace	phoxinus
menmṇ	neu	en		intellect	intellectus
menos	neu	es		sense	sensus
mēnsis	mas	ej	meH ₁ ns-, mH ₁ nt-	month	mēnsis
mentā	fem			rod	uirga
mēqos	neu	es	meH ₁ -H ^u -os	moment	mōmentum
mergā	fem			fork	furca
merghā	fem			snare	laqueus
mergis	fem			filth	situs
mergō	cau	AIa	merg/mezg	sink	mergō
merkēds	fem	(merkōdós)		charge	naulus
merkō			cf. bherkō	flimmer	fulgeō
mérneumi	tr	BIVb		worry	turbō
meros	adI			simple	merus
mersō	tr			block	inctercludō
merwos				insipid	insipidus
mesgō	tr	AIa		communicate	communicō
meslā	fem			blackbird	merula
mestis	fem		memstis ?	measure	mensūra
mētā	fem			post	mēta
meti	ind			in the middle	in mediā parte
mētijai	tr			measure	mētior

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mētis	fem		meH ₁ -ti-	dimension	dīmensiō
metō	tr	Alb		reap	metō
metrom	neu	mētrom 2 ^o comp.		measure	mensūra
meudos	adI			proud	superbus
meugō	intr	Ala		cheat	dēlūdō
meukō	tr	Ala		scratch	ērōdō
meus / muskós	neu	(mūsós)		muscle	mūs
mighlā	fem			mist	uapor
míkāmi	dur			flimmer	micō
miljom	neu			red ochre	minium
mimdō	inc			meet	accurrō
mímnāskō (memna)	intr	AVc	cogit.	remember	memini
míneumi	cau	BIVb		reduce	minuō
minghō	intr			piss	mingō
mínusi	ind			less	minus
misdhom	neu			salary	sālārium
misgā	fem			whey	sērum lactis
miskējō	cau			mix	misceō
mlājō	cau			weaken	dēbilitō
mlākós	adI		ml-H ₂ kó	stupid	stultus
mlātóm	neu		mlH ₂ tó	flour	farīna
ml̥dhos	adI			permissive	permissiūus
ml̥dsnos	adI			softened	ēmollitus
ml̥dus	adI		ml-du; tab	soft	mollis
ml̥duwijō	tr			soften	molliō
ml̥gājō	tr			anounce	nuntiō
ml̥inós	adI			slack	ēneruis
ml̥jos	adI			false	falsus
ml̥kāmi	intr	BIIIa		weaken	ēlanguescō
ml̥nejós	adI			dark	mulleus
ml̥ōdhrós	adI			lofty	excelsus
ml̥ōskō	intr		mlH ₃	appear	appareō
ml̥sos	mas			slow	lentus
ml̥wā	fem		ml̥H-weH2	mallow-plant	malua
m̥pdōmi	tr			commit	mandō
m̥pējō	den			remain	maneō
m̥pijai	omc			tower	ēmineō
m̥pijō	den		mnH ₂	consider	opīnor
m̥pkos	adI		cf. m̥pnwos	defective	mancus
m̥pkstrom	neu			shaker	mixtarium
m̥psjai	neu			intend	intendō
m̥ptijai	tr			put on	mentior
m̥ptis	fem	jo	mentis	mind	mens
m̥ptō	tr		mH ₂ t	chew	mandō
m̥ptom	neu			chin	mentum
m̥ptos	mas			mention	mentiō
m̥ptrājō	tr			wipe	abrādō

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m̥pus	fem	(m̥newós)		hand	manus
m̥wos	adI		cf. m̥nkos	scant	insignificans
mō	ind			but	sed
modos	neu	es		measure	modus
moghjos	adI			pleasant	amoenus
moghō	tr	AIId	mH ₃ gh	can	possum
moghtis	fem	jo		might	potestās
moghtrom	neu			means	remedium
moighos	mas			pee	uriina
moilos	adI			mild	comēs
moinijai	tr			fortify	mūniō
moinis	adI			obliged	mūnis
moinja	neu			walls	moenia
moitājō	tr			exchange	mūtō
moitmos	mas		méitimos	thanks	grātes
moitwos	adII			mutual	mutuus
mojnos	mas			exchange	commūtātiō
moksi	ind			soon	mox
molā	fem			coast	litus
molhā	fem			occipital	occipitium
molhdos	mas			prayer	prex
moleinā	fem			mill	molīna
molestos	adI			annoying	molestus
molgējō	tr			milk	mulgeō
mōlis	fem	ej		mass	mōlēs
mos	neu	es		effort	mōlimen
molpā	fem			praise	superbia
molqos	adI			wet	madidus
mondō	tr			adorn	ornō
mondós	mas			whelp	cattulus
monējō	cau			warn	moneō
mongos	fem			neck	collus
monīli	neu		monH-	collar	monīle
monos	mas			neck	cervi
montis	mas	ej		hill	mons
morā	fem			delay	mora
morā	fem			nightmare	somnus terrorificus
morcos				dark	obscūrus
mordējō	tr			bite	mordeō
morignā	fem			woman	mulier
morjods	mas	ed		thigh	poples
mórmoros	mas			panic	horror
morom	neu			berry	mōrum
mos	fem		cf. m̥tis	fatality	infortūnium
mōros	adI		mōros /mēros cf. yōrom /yērom	renowned	nōbilis
mōrós	adI			stupid	mōrus

Appendix I: Indo-European in Use

mōs	mas	(mosós)		character	ingenium
mosgom	neu			cerebellum	cerebellum
moukos	mas			mucus	mūcus
mouros	mas		mounos	slop	illuuiēs
mousos	fem			weed	alga
moutos	mas			penis	mūtō
mowējō	cau			move	moueō
mreghmós	mas			skull	caluaria
mṛējō	den			deserve	mereō
mṛghús	mas			short	breuis
mṛijai	intr			die	morior
mṛjos	mas			pubescent	pūbes
mṛkā				carrot	carota
mṛkējō	den		H ₂ mr-k	be withered	marceō
mṛkos	adI			disabled	murcus
mṛktos	adI		cf. bhṛktos	speckled	uarius
mṛmeikā	fem			ant	formīca
mṛmrājō				murmur	murmurō
mṛtājō	tr			crush	conterō
mṛtāsjom	neu			mortar	mortārium
mṛtis	fem	jo	cf.moros	death	mors
mṛtos	adII			dead	mortuus
mṛwos	adII			dead	mortuus
mūdlom	neu			detergent	dētersīuum
mūdnós				clean	mundus
mudstos	mas			must	mustus
mugijō	intr			moo	mugiō
munkō	tr	AVIa		blow out	ēmungō
mūs	neu	(mūsós)	muH-s-; mews	mouse	mūs
muskā	fem			fly	musca
muskos	mas			moss	muscus
músnāmi	tr	BIVa		secrete	abdō
mūtrom	neu			mud	lutum
muttijō	den			mutter	muttiō
muttis	adI			speechless	mutus
ṛ	ind			un-	in-
nḋtis	fem			nates	natis
nantis	fem			courage	audacia
nāsis	fem	ej	neH ₂ s-i	nose	nārēs
natriks	fem	(natrikós, natrijós)		serpent	natrix
nawāgós	epic			sailor	nauta
nāws	fem	(nāwós)	neH ₂ w-	ship	nāuis
ṇbhudhnóm	neu			abyss	abyssus
ṇcén	fem		H ₁ ngw	groin	inguen
ṇdha	ind		H ₁ ndh- tab	then	deinde
ṇdherós	adI			underly	inferior
ṇdhētós	adII			unmade	infectus
ṇdhi	ind			in excess	magis etiam

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ṇdwojos	adI			sincere	sincērus
nē	ind			no	nē
nebhis	fem	ej		cloud	nūbes
nebhla	fem			fog	nebula
nedis	fem	ej		nettle	urtīca
nedjos	adI		nHed-yo-	near	propinquus
nedō	tr	AĪb	nHd	link	nōdō
nedsā	fem			net	nassa
nedskō	tr	Ava	nHd-skō	bind	nectō
neghō	tr	AIa		penetrate	penetrō
neghrōn	mas	en		kidney	rēnis
nei	ind			not at all	nequaquam
neicō	tr			wash	lauō
neidō	tr	AIa		humiliate	humiliō
neikō	tr	AIa		winnow	ventilō
neitom	neu			rivalry	inimicitia
neiwós	adI			depressed	dēpressus
nekāmi	tr			kill	necō
nekopínós	mas			unexpected	necopiinus
neks	mas	(ṇkos)		death	nex
nēmētom	neu			sanctuary	sanctuārium
nemō	tr		n-em	distribute	distribuō
nemos	neu	es		forest	nemus
nemots	epic.	(németos)		enemy	inimīcus
nepēts	mas	(népotos)		grandson	nepos
neptis	fem	jo		grand-daughter	neptis
neqe	ind			and not	neque
neqid	pron.			nothing	nihil
neqis				nobody	nemō
neqom	ind			never	nunquam
neqos	pron.			someone	quisquis
neros	mas		H ₂ ner(o)-	soldier	milēs
nérteros	adII			lower	inferus
nertos	adI			strong	robustus
nesros	adI		neHs-ro	modest	modestus
ṇeu	ind			without	sine
neudō	tr	AIa		spend	impendō
neukos	adI			myop	myops
new(ij)os	adI			new	nouus
newājō	tr			renew	nouō
newṇ	ind		H ₁ newn	nine	nouem
néwṇos	adII			ninth	nouenus (nōnus)
newō	intr	AIa		nod	nuō
newotāts	fem	(newotātjos)		newness	nouitās
ṇgnōtós	adI			unknown	ignōtus
nī	ind			down	sub
nijóm		(aor. a bherō)		lead	dūxī
niktis	fem			corn	grānum

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nínāmi	tr	BIIa, BIVa	H ₃ nH ₂ ; ^ž nāmi	befriend (to)	faueō
nīqos	adII			inclined	prōnus
nidos	mas			nest	nīdus
nitējō	den		*nei-	shine	niteō
nīteros	adI		tab	inferior	inferior
nitjos	adI			usual	usitātus
ņjousjom	neu			unjustice	iuiuria
ņjoustos	adI			unfair	iniustus
ņkējō	tr	AIIIe		need	necesse est
ņkneumi	tr	BIVb	H ₂ nk; cf. ņņkskai; pf. H ₂ eH ₂ nó(n)k H ₂ e = ānoka	arrive	perueniō
ņmrótijos	adII		ņmr̥tó-	immortal	immortālis
ņmtos	mas			bending	plecāmentum
ņņkskai	tr	AVc	h ₂ n-h ₂ nk-sk- ; cf. ñkneumi	find by chance	nanciscor
nocējō	cau			put off	exuō
nócodos	adII		nog ^w od(h)o- /nog ^w oto /nog ^w no-	naked	nūdus
nōdos	mas			knot	nōdus
noibhos	adII			holy	sanctus
nōinos	pron		nōinlos	none	nullus
nokējō	cau			destroy	deleō
nom	ind			so	num
nom nē	ind			do not?	nonne
nōmņ	neu	en	H ₃ neH ^u ₃ -mn, H ₃ nH ^u ₃ -mn,	name	nōmen
nōmnājō	tr			name	nōminō
nomr̥	neu	nómenos		precision	subtilitās
noqtis	neu	jō		night	nox
nosējō	cau			free	recipiō
nōunā	fem		noH ₂ u-	famine	esuriēs
ņprobhwos	adI			wicked	improbus
ņqijētós	adI			restless	inquiētus
ņserós	adII			our	noster
ņsis	mas	jō		sword	ensis
ņsloimis	adII			unmuddy	illimis
ņsme	pron		tab	we	nōs
ņswodhros	adI			extraordinary	rārus
nū	ind			now	nunc
numki	ind		ki num	now	nunc
ņwidis	adI			ignorant	ignārus
obhi	ind			middle (in the)	ob
óbrusjā	fem			flask	obrussa
ochis	mas		cf. enghwis	worm	lombricus
odāugjai	intr			aggravate	exulceror
odējō	tr			smell	olō

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odhrom	neu			enclosure	claustrum
odjō (ōda)	tr		H ₃ d	hate	ōdi
ōdjom	neu			hatred	ōdium
odós	mas	es		odor	odor
oghlējō	cau			trouble	inquietō
oghlos	mas			annoyance	molestia
ogmos	mas		H ₂ og-mo	track	orbita
oidējō	den		H ₃ eid	be swollen	tumēō
oighai	intr			depart	proficiscor
oimos	mas			march	itus
óinoikos	adII			single	ūnicus
oinos	adII		H ₁ oi-no-	one	ūnus
oinowr̥stós	adII			simultaneously made	in eōdem tempore factus
oisjā	fem		H ₃ iH ₂ s-?	rudder	tēmō
oisos	adII			that one	iste
oitos	mas			oath	sacrāmentum
oiwos	fem		H ₃ eiwo-	yew	taxus
okējō	den			doubt	dubitō
ókētā	fem			harrow	occa
oktōu		(āi oi)	H ₁ oktō(u)	eight	octo
oktowos	adII			eighth	octāuus
ókúpteros	mas		H ₃ ku-/eH ₃ ku- + -ptero- /-petro-	hawk	accipiter
ókús	adI		H ₁ eH ₃ k-u-; ókus	swift	rapidus
olējō	cau		ol- / al- ?	heat	adoleō
olējō			H ₃ el	destroy	aboleō
olgjā	fem			tendrill	cincinnus
ōlim	ind			formerly	ōlim
oljoi oljāi olja	pron	pl.		all	omnes
olmos	fem			elm	ulmus
ōlnā	fem		H ₃ olH ₁ -neH ₂	elbow	ulnā
ólteros	adI			further	ulterus
ólt̥mos	sup.			furthest	ultimus
oltrōd	ind			over there	ultrā
olwā	fem			sedge	ulua
omos	adI			firm	firmus
ōmós	adI		eH ₃ mH ₂	raw	crūdus
omsos	mas		H ₁ omH-so	shoulder	umerus
onbhlos	mas		H ₃ nbh-	navel	umbilicus
onchis	mas	ej	H ₃ nghw-i	finger nail	unguis
onç̥	neu	(óncenos)	h ₃ engw̥	ointment	ungen
oncō	tr	AVIII	H ₃ engw	oint	unguō
oncōl	mas	(ñclós)	H ₁ ongw-ōl	coal	carbō
ondos	neu	óndesos		rock	saxum
onējō	tr		H ₃ enH ₂	blame	culpō
ónerjos	mas			dream	somnus

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onghlos	mas			nail	clāuus
onjos	adII			another	alius
onkājō				groan	uncō
onkos	mas			hook	uncus
onos	neu	es	H ₃ en-os-	load	onus
ónteros	adII			second	secundus
ópitjos	adII			last	ultimus
opjō	tr			choose	ēligō
opnā	fem			wealth	substantia
ópopā	fem			hoopoe	upupa
opos	neu	(ópesos)	H ₃ ep-os-	work	opus
opos esti	intr			be necessary	opportet
ops	mas	(ēpos)		riches	ops
oqō	tr			see	uideō
oqos	mas		H ₃ okwo-	eye	oculus
ōrā	fem			edge	ōra
ōrājō	tr			pray	ōrō
orbhis	mas		H ₃ erbhi-; cf. orghis	disk	orbis
orbhjom	neu			inheritance	hērēditās
orbhos	adII		H ₃ erbho-	orphan	orbus
ordhos	mas		pordhos ? cf. gr. perqw	hammer	malleus
orgājō	tr		H ₃ erg	beat up	contundō
orghis	fem	ej	H ₃ erghi-; cf. orbhis	ball	pila
ormos	adI			poor	pauper
ōs	neu	(ēsos)	H ₁ eH ₃ s-	mouth	ōs
osbhos	mas			knot	nodus
osdos	mas		H ₂ osdo-	branch	rāmus
osēn	mas	(osnós)	H ₃ esH ₃ en	autumn	autumnus
oskos	fem		H ₃ es-ko- /-kā	ashtrē	frāxinus
ósonos	fem		H ₃ es-no-	ashtree	ornus
ostis	mas	ej	H ₃ estHi-; H ₃ estHṛ- / H ₃ estHṇ -	bone	os
ōstjom	neu			entrance	ōstium
oudṇ	neu	(óudesos)		land	terra
ougros	adI			cold	frigidus
ousis	fem		H ₂ ousi-	ear	auris
ów(ij)om	neu		H ₁ oH ₂ w-yo	egg	ōuum
owājō	tr			cheer	ouō
owis	fem		H ₃ ewi-, H ₂ owi-	sheep	ouis
pðgrós	adI		pH ₁ g-ro pH ₁ g-no	sure	constans
pðrnāmi	tr	BIVa	prH ₂	sell	uendō
pðtējō	den		ptH ₁ /pH ₁ t	lie open	pateō
pðtēr	mas	(pðtros)	pH ₂ -ter; tab	father	pater

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pðterá	fem			saucer	patera
pðtjai	tr			suffer	patior
pðtrjā	fem			fatherland	patria
pðtrjos	adII			fatherly	paternus
pðtrujós	mas			uncle	patruus
pðwējō	den			fear	paueō
pādhlom	neu		peH ₂ -dhlo/tlo-	sustenance	pābulum
pagos	mas			region	pagus
pags	fem	(pāgos)		peace	pax
pālājō	tr			protect	protegō
pálejā	fem			straw	palea
pálowos	adI			grey	pallidus
palpājō	tr			touch	tangō
pámponos	mas			vine-leaf	pampinus
pandos	mas			bent	pandus
panknos				swelling	pannus
pankō	intr			swell	tumescō
pannos	mas			rag	pannus
pāpeljos	mas			butterfly	pāpiliō
paplā	fem			swelling	papula
pareikā	fem			concubine	paelex
pārējō	intr			come out	pāreō
parkō	tr	AI Ib		refrain from	parcō
parsā	fem			sparrow	parra
pasknis	mas	ej		food	pābulum
pāskō	tr		peH ₂ -sk	feed	pāscō
pāsós	mas			relative	familiāris
pastos	adI			fix	fixus
pāstus	mas			pasture	pastus
pau	ind		tab	a bit	paucum
paukos	adI		tab	little	paucus
paulos	adI		tab	small	paruus
pāwɾ	neu	(pwnós)	peH ₂ w-r-	fire	ignis
pedjós	adI II			worse	dēterius
pedlom	neu			sandal	sandalia
pedom	neu		pedóm ?	footprint	peda
pegtos	neu	es		chest	pectus
peidō	prog	AIa		grow fat	pīnguescō
peigō	tr	AIa		annoy	molestō
peikā	fem			woodpecker	pīca
peikō	tr	AIa		adorn	ornō
peikos	mas			magpie	pīcus
peiks	fem	(pikós)		pitch	pix
peimis	adI			quick	celer
peitus	mas			resin	resīna
pējō	tr	AIa		insult	insultō
pekō	tr			comb	pectō
pektēn	mas	(pektnós)		comb	pecten
pektō	tr	AIa		comb	pectō

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peku	neu	(pékewos)		cattle	pecu
peldō	tr	AIa		impel	pellō
pelkō	intr	AIa		move	migrō
pelnis	fem	jo		skin	pellis
pelō	tr	AIb		make money	lucror
pelom	neu			surface	superficiēs
pelsā	fem			rock	rūpēs
pelu	ind		pelH ₁ u	much	multum
pelupoikos	adI			variegated	varius
pēlwis	fem			dish	peluis
pelwos	neu	es	plHwo-, polHwo-, plHwi-	dust	puluis
pēm̃	neu			damage	dētrimentum
pendō	tr			hang	pendō
penō	tr			work with a thread	cum filō laborō
penom	neu			mud	lūtum
penos	neu	es		provision	prouisiō
penqadk̃m̃ta	adII			fifty	quinquaginta
penqdek̃m̃	ind			fifteen	quindecim
penqe	ind			five	quinque
penqstis	fem	jo		fist	pugnus
penqtos	adII			fifth	quintus
pēnsús	mas			sand/gravel	saburra
pentō	tr	AIa		track	indāgō
peqō	tr	AIa		cook	coquō
peqtis	fem			cooking	coctiō
peqtór	mas			cook	coctor
peqtós	adI			cooked	coctus
per(i), per(ti)	ind			about	per
perijō	tr			experience	experiō
peristānom	neu			religion	religiō
perknā	fem		cf. pr̃qos	trout	tructa
pérkūnjom	neu			mountain	mons
per̃mos				absolūtus	
per̃mós	adII			absolute	absolūtus
perom	ind			besides	praeterea
peróm	neu			feather	plūma
peros	ind			farther	prorsum
pérper̃ks	ind			turned aside	perperām
perqos	fem			oak	quercus
persā	fem		pers(n)eH ₂	heel	calx
persnā	fem			ham	perna
persō	intr	AIa		splash	respergō
pertā	fem			pole	pertica
perti	ind			otherwise	altrinsecus
péruti	ind			last year	anno praeterito
pesdō	intr			fart	pedō

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pesnis	mas	jo		penis	pēnis
peterós	mas			wing	āla
pétļos	adI		pétH ₂ los	meager	petilus
petō	intr		ptH ₁	fly	aduolō
petsnā	fem			feather	penna
petsnós	mas			bird	uolucrēs
peumi	tr			understand	intellegō
pewō	tr	AIa	pwH	clean	purgō
pibō	tr		peH ₁ ₃	drink	bibō
pigējō	den			be annoying	molestus (esse)
pikrós	adI			sharp	picans
pilos	mas			hair	pilus
pīmós	adI			fat	crassus
pingō	tr			paint	pingō
pinjos	neu			stab	baculum
pinsō	tr			crush	pinsō
píperi	neu	ej		pepper	pipe
pipjājō	intr			squeak	pipiō
piptō	tr	(pepta)		fall down	praecipitor
piskis	mas	ej		fish	piscis
pītús	mas			food	cibus
piwōn	adI		(fem. píweryā)	fat	pinguis
plabrājai	intr			babble	garriō
plākējō	cau			advise	suadeō
plākos	adI			flat	plānus
plākos	adI			wide	latus
plānos	adI		plH ₂ -no	flat	plānus
plārom	neu			floor	contabulātiō
plātom	neu			planitiēs	campus
plātús	adI		plH ₂ -tu; plātus	broad	latus
plautos	adI			flat-footed	plautus
pļdājō	intr			paddle	plaudō
plēdhwis	fem	ej		crowd	multitūdō
plékāmi	cau			fold	plicō
plektō	tr	AIa		plait	plectō
plēmņ	neu			filling	plētūra
plēnós	adI		plH ₁ -nó	full	plēnus
plētis	fem			filling	plētūra
pletjā	fem	coll.		shoulder-blades	scapulae
plētós	adI		plH ₂ -to	full	plēnus
pleudō	tr	AIa	pleu-d	flood	inundō
pleumōn	mas	en		lung	pulmō
plewō	intr	AIa		flow	fluō
plighā	fem			appendix	appendix
pļmā	fem		plH ₂ meH ₂	palm	palma
pļnāmaí	intr		pelH ₂ ; peldō	cf. approach (to)	appropinquō

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pļnāmi	inc	BIVa	płH1; plēnāmi, pļnēmi; cf. fill pimplēmi		pleō
pļngō	tr	AVIc	płH ₂ -g	strike	plangō
plousmā	fem			feather	plūma
ploutos	mas			board	tabula
plówijā	fem			rain	pluuia
plówijom	neu		cf. plowós	ship	nāuis
plowós	mas		cf. plówijom	boat	ratis
płowós	adI		pelH-, lḥ -; polHwós	grey	albogiluus
pļtáwija	fem		płtH ₂ wiH ₂	earth	terra
pļtnos	mas		płH ₂ t-H ₂ no; cf. plātús	flatness	planitiēs
pļtom				coat	sagum
plúwaidhom	neu			lead	plumbum
pļwods	mas	(pļwedos)		swamp	palus
pņdēks	mas	(pņdkos)		paunch	pantex
pneusō	intr	A1a		breathe	anhelō
pņgō	tr		pH ₁ g	nail	pangō
pņtō	tr		ptH ₁ / pH ₁ t	spread out	pandō
podjom	neu			relief	podium
podš	mas	(pedos)		foot	pēs
poimēks	mas	poimkós		pumice	pūmex
pōimōn	mas	en	poH ₂ i-mōn	shepherd	pāstor
pojējō	cau			get drunk	inebriō
polis	fem	(pólejos)	(t)płH-i-	city	urbs
polkā				fallow	ueruactum
polnēks	mas	(polņkós)		thumb	pollēx
polnō	intr		pH ₃ l	fall	cadō
polpos	mas			scene	pulpitus
poltos	mas		pelH-	porridge	puls
pondos	neu	es		weight	pondus
pōnom	neu			drinking	pōtus
pontis	mas	ej		way	uia
poqós	mas			cook	coquus
porā	fem			air	aer
porējō	cau			provide	asportō
porkos	mas			pig	porcus
pornós	mas		cf. pratis 'filix'	feather	plūma
porsis	mas			bull	bouuculus
porsōd	ind			far	procul
portājō	tr			carry	portō
pos(ti)	ind			after	post
pósteri	ind			afterwards	postea
pósteros	adI		tab	subsequent	posterus
póstmos	sup.		tab	last	porstrēmus
postrōd	ind			backwards	retrō
potējō	tr			hold	possideō

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poti	ind			towards	uersus
potijai	inc		abl	acquire	potior
potis	mas	ej		master	dominus
pōtis	fem	jo		drink	pōtiō
pōtlom				glass	pōculum
potnjā	fem			mistress	domina
pōtōr	mas			drinker	pōtor
pougā	fem			buttocks	pūga
poughos	adI			virginal	uirginālis
pougnos	mas			fist	pugnus
pounā	fem			swelling	turgentia
poutos	mas			penis	pēnis
powējō	cau			clean	purgō
póweros	mas			boy	puer
powros	adI			pure	pūrus
pra	ind			close to	iuxta
prāi	ind		prH ₁ i	before	prae
práighesto	ind			at hand	praestō
práiloghos	adII			present	praesens
práinōmṇ	neu	en		name	praenōmen
práiteri	ind			along	praeter
prāmos	sup		prH ₂ -mo-	first	prīmus
pratis	fem	ej	cf. pornós 'plūma'	fern	filix
prāwos	adII			first	prīmus
preistos	adI			preceding	anterior
prejō	intr			fan	flabellō
prekō	tr		aliquid ab aliquō	beseech	precor
preks	fem	(prēkos)		plea	prex
premō	tr	AVIII		press	premō
prepō	intr	AIa		look like	uideor
presō	tr	AVIII		press	premō
pretjom	neu			price	pretium
pretō	tr	AIb		realise	percipiō
préwijos	adI	es		previous	anterior
prewō	dur	AIa		hover	pullulo
prgā	fem			portico	porticus
prījō	tr		prH ₃	give birth	pariō
prijós	adI			dear	cārus
prijós	adII	(prījesos)		foremost	prīmus
prīskos	adI		*preiskwú ?	ancient	priscus
prīsmos	sup.			first	prīmus
prītós	adI			satisfied	contentus
prkā	fem			furrow	sulcus
prknos	adI			motley	uarius
prkskā	fem			question	quaestiō
prkskō	tr		(bhewom kwomēd)	ask	poscō

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pṛnos	adI		prH-nó, perH-nó	past	praeteritus
prō(d)	ind			forwards	prō
próbhoudhos	mas			attention	attentiō
probhwājō	tr			prove	probō
probhвос	adI		probhú-	good	bonus
prodθtór	adII			traitor	próditor
próddōmi	tr			put forth	prodō
prōi	ind			in the morning	mane
proitis	fem			departure	profectiō
prokós	mas			suitor	procus
prokos	adI			advanced	prouectus
promos	sup			principal	prīmus
proqēd	ind			near	prope
proqos	adI			nigh	propinquus
pṛos	ind			before	prae
prósēdjom	neu			kindness	beneficium
próstōrnos	adI			extended	extensus
prostos	mas			promontory	tumulus
próteros	adII			first (of two)	prīmus (a duobus)
proti	ind			against	contrā
prōtós	neu		prH ₃ -tó	assigned	attribūtus
prouisijō	intr			irritate	irritō
pṛptus		(pṛptewós)		form	forma
pṛqos	adI		cf. perknā	coloured	uarius
pṛsnā	fem		prH ₃ sneH ₂	piece	fragmentum
pṛsom	neu			leek	porrum
pṛstis	mas			prominence	prominentia
pṛtis	fem			part	pars
pṛtus	mas	(pṛtwos)		ford	portus
prunsō	tr			freeze	gelō
prúsneumi	tr	BIVb		water	rigō
pruswā	fem			frost	pruīna
pteljā	fem			lime-tree	tilia
pujō	inc		puH	molder	putescō
pūjós	adI		cf. pūtós	righteous	pius
pukos	mas			tail	cauda
pulgā	fem			lock of hair	crīnis
pūlós	adI		cf. pūterós	putrid	puter
pungō	tr			punch	pungō
pūpos	mas			child	pūpus
pūrós	mas		puHro-	core	nucleus
pusbhis	mas		H ₃ pu-s-bhi	groom	pubēs
pusjō	tr			inflate	infō
puslēks	mas	puslḱós		flea	pūlēx
pustlā	fem			pustule	pustula
pūtejō	cau			be rotten	pūteō
pūterós	adI		cf. pūlós	rotten	puter

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putlom	neu			child	infans
pūtós	adI		cf. pūjós	clean	putus
puwējō	tr			reckon	computō
puwos	neu	es	puH	pus	pūs
qðddrom	neu			square	quadrum
qðtjō	tr			shake	quatiō
qðtrus	ind			four times	quater
qðtrusnos	adII			four each	quaternī
qðtwṛádkm̥ta	adII		k ^w twH ₃ r-	forty	quadrāgintā
qðtwṛádkm̥tṃ os	adII			fortieth	quadragēsimus
qðtwṛatnjom	neu			four years	quadriennium
qðtwṛdekṃ	ind			fourteen	quattuordecim
qðtwṛdjówijom	neu			four days	quadriduum
qðtwṛes	adII		kt ^w H ₃ r-; tab	four	quattuor
qðtwṛkm̥témt mos	adII			four hundreth	quadrigentesim us
qðtwṛkm̥tos	adII			four hundred	quadrigenti
qðtwṛpods	adII	jo		quadruped	quadrupēs
qðtwṛtos	adII			fourth	quartus
qād	ind			which	quā
qālis	adII			how	quālis
qām	ind		k ^w eH ₂ m	as	quam
qāqos	pron			whoever	quisque
qasjos	mas			basket	cista
qáw̥ntos	pron			how great	quantus
qdnos	adI			magic	magicus
qe	ind		(encl.)	and	que
qedos	mas			angle	angulus
qedos	neu			magic force	magia
qeisō	tr		k ^w ei-s/k ^w ei-t	feel	sentiō
qeistis	fem	AIa	quoque kwistis	consideration	considerātiō
qejēs-kō	intr		qiH ₁	rest	quiēscō
qejō	tr			compose	compōnō
qejtis	fem		quoque qjtis	collection	collectiō
qeklom	neu			wheel	rota
qekō	tr	AIa		gaze	prospectō
qeli	ind			far (from)	procul
qelō	dur	AIa	k ^w elH ₂	circulate	uersor
qelos	neu			group	caterua
qelpō	tr	AIa		ciurve	incuruō
gemō	tr			swallow	uorō
gentos	adII			holy	sacer
qerpō	inc	AIa		turn	reuertor
qésai	intr			complain	queror
gestis	fem			part	pars
qidpe	ind			indeed	quippe
qijētis	fem			rest	quiēs

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qijētós	adI			peaceful	quiētus
qínúmoi	tr			claim	uindicō
qíqeimi	tr	BIId		estimate	aestimō
qis qid	int		tab	what	quī quae quod
qisqis qidqid	pron			anyone	quisquis quidquid
qṃdō	int			when	quandō
qṇtjō	tr			suffer	pator
qodhei	int			where	ubī
qoi	ind			where	quō
qoiná	fem			retaliation	ulciscātiō
qoinom	mas			dirt	excrēmentum
qoitrós, koitrós	adI			fair weather	serēnus
qolkā	fem			cushion	culcita
qolus	fem	(ew)		distaff	colus
qom	ind			when	cum
qomde	ind			where	unde
qondhros	fem			angelica	angelica
qori	ind			why ?	cūr
qorjom	neu			cauldron	catinus
qos qā(i) qod	rel		tab	who, which	quī quae quod
qostā	fem			cough	tussis
qot(j)os	int			how many	quot
qota	int			how	ut
qote	int			whither	quō
qóteros	dh ^o r			which	uter
qotrēd	ind			whither	quō
qotrōd	ind			wherefrom	unde
qṛeumi	dur	IIIIb	k ^w rH; qerjō	handle	gerō
qrínāmi	tr		k ^w rei-H ₂	buy	emō
qritóm	adII			bought	emptus
qṛmis	mas	(qṛmejós)		worm	uermis
qṛsnos	mas			bush	arbustus
qṛtus	mas	(qṛtewós)	cf. kṛwtis	time	uix
rḏbhjō	intr			rage	rabō
rḏdjom	neu		rtH	ray	radium
rḏgājō	tr			wet	rigō
rḏpjō	tr			snatch	rapiō
rḏtis	fem	(rḏtjos)		reason	ratio
rādō	rac		H(w)rH ₂ d	shave	rādō
rāpom	neu			turnip	rāpum
rārós	adI			dispersed	rārus
rastós	adI			smooth	glaber
raudos	neu	es	roudho- ?	metal	metallum
raukos	adI			tough	rudis
rāwos	adI			grey	rāuus
ṛdhjō	intr			grow	crēscō
ṛdhwos	adI		Hrdh-wo-	steep	arduus

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rebhā	fem			leap	saltus
rebhājō	intr			jump	saltō
rebhō	tr	AIa		shield	tegō
rebhrus	mas			tube	conductus
recos	mas		H ₁ eregwo- ; pl.	darkness	tenebrae
rēd/re	ind			dis-	re(d)
regeinā	fem		rēgnī	queen	regīna
regjos	adII			kingly	regius
regnom	neu		regjom	kingdom	regnum
regō	tr		H ₃ reg	direct	regō
regs	mas	(rēgos)		king	rex
regtós	mas			right	rectus
reidhō	tr	AIa		ride	equitō
reidhos	adI			easy	facilis
reigō	tr	AIa		bind	alligō
reimā	fem		reiwā	crack	rīma
rēimṇ	neu	en	rīmo-, rīmā-	list	seriēs
rēis	fem	(rijós)	*HreH ₁ -i-	propriety	rēs
reiwos	mas		reiH ₂ -	brook	rīuus
rējō	intr	AVIII	H ₁ rH	row	rēmō
rekā				tick	ricinus
rékneumi	tr	BIVb		range	ordinō
remō	intr	AIb		relax	requiescō
rēmoi	neu		H ₂ rH ₁	reckon	reor
rentus	mas			property	possessiō
rēpō	intr			crawl	rēpō
resgō	tr	AIa		plait	plectō
resgtis	fem			rope	restis
rēsmos	mas		H ₁ reH ₁ -smo / (-t-smo ?)	oar	rēmus
rēti	neu			strainer	colum
retō	intr	AIb		run	currō
retrōd	ind			back	retrō
reubō	intr	AIa		scrape out	abrādō
reudhos	adI			red (-haired)	rūfus
reudō	intr	AIa	reudō / reudmi	cry	rūdō
reudos	adI			wild	rudis
reughmṇ	neu			dough	pasta
reugō	intr	AIa	H ₁ reu-g	belch	ructō
reumi				rumor (to produce)	rūmorem faciō
reusmṇ	neu			rūmen	rūmen
reusmnājō	intr			ruminate	rūminō
rew	ind			outdoors	forās
réwesnā	fem			ruin	ruina
rewis	mas		Hrew	planet	planēta
rewmṇ	neu			hair	capillum
rewō	inc / tr	AIa	H ₃ rw / rwH ₃	break off	dēfringō

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rewos	neu	(réwesos)	rews, rows; cf. jewos, weis	open land	rūs
ṛghējō	tr			incite	sollicitō
ṛigjō	tr			torture	tormētō
ṛijai	inc			set out	orior
ṛikjō	tr			ruin	ruinō
rínāmi	tr	BIVa	H ₃ ry	flush away	egerō
ṛkējō	den tr	AIIf	H ₂ rk	contain	arceō
ṛkēslom	neu			door-bar	repagula
ṛklā	fem			chest	arcula
ṛneumi	intr	BIVb	H ₃ r	move	cieō
ṛnutis	fem	jo		movement	mōmentum
robhos	mas		H ₃ robho-	roof	tectus
rōdhí	ind	(abl./instr.)		on account of	causā
rōdhjō	tr			endeavour	conitor
rōdō	tr		H(w)rH ₂ d	tear	rōdō
rōdos	adI			joyful	alacer
roinos	mas			dam	agger
ros	mas	(rēsos)		spray	ros
rōstrom	neu			beak	rōstrum
rotā	fem		rotH-eH ₂	wheel	rota
ṛots	mas	et		charioteer	auriga
rouhstos	mas			rust	rōbigō
roudos	mas			crying	plōrātus
rounā	fem		ruH-nā; rūnā	secret	secrētum
roupis	fem			rock	rūpēs
routos	mas			intestiones	intestīnum
rowā	fem			pause	cessātiō
ṛsjā	fem			envy	inuidia
ṛskai	intr		H ₁ r	go	eō
ṛtís	fem	jo		farewell	abitiō
ṛtkos	mas		H ₂ rt-ko-	bear	ursus
rudhrós	adI			red	ruber
rudlós	adI			rude	rudis
rugijō	intr			roar	rugīō
ruktus	mas			tunic	tunica
rumpō	tr			break	rumpō
runkō	tr	AVIa	H ₃ ruk	weed	runcō
rupús	adI		rupus	shoddy	insincērus
ruspājai	tr			rummage	rūspor
rwtós	adI		H ₃ rw-to	collapsed	rutus
s(w)ei	neu			whenever	sī
s(w)eike	ind			thus	sīc
sðkesnā	fem			pickaxe	sacēna
sðksom	neu			stone	saxum
sðpijō	tr			have taste	sapiō
sāgijō	tr		sH ₂ g	seek	sāgiō
sagom	neu			mantle	sagum
saipis	mas			fence	saepēs

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saitā	fem			hair (strong)	saeta
saitlom	neu			lifetime	saeculum
saiwos	adI			fierce	saeuus
sājō	den			be furious	saeuiō
sákrodhokjom	neu			sacrifice	sacrificium
sákrodhots	mas	et		priest	sacerdos
sakros	adI			holy	sacer
sal	neu	(salós, sálejos)	sali	salt	sal
saldō	cau			salt	sallō
salēiks	fem	(salikós, salijós)	saliks	willow	salix
saleiwā	fem			saliva	salīua
salom	neu			swell	salum
salús	adI		salus	dirty	immundus
sāmðn	neu			quietness	quiēs
samdhos	mas			sand	sabulum
sāmis	adI			quiet	quiētus
samos	mas		smos, smā	summer	aestas
sánāmi	tr	BIVb	sH ₂ ; sH ₂ neumi; sātijō (cf. westijō)	satisfy	satisfaciō
sáneumi	tr	BIVb	snH	perform	efficiō
sankijō	tr			enact	sanciō
sapos	fem			juice	succus
sasjom	neu			crop	messis
sātis	fem			satisfaction	satiās
sauros	adI			sour	acerbus
sáwel(jos)			seH ₂ w-l/n; sw-r/n	sun	sōl
se	pron	(sewe)	tab	himself	se
se/sos sā/sī tod	pron		tab	this	iste ista istud
sēd	ind			apart	sē
sēdājō	cau			appease	sēdō
sedējō	den			be sitting	sedeō
sedējō ambhí	den			besiege	circumsedeō
sedlā	fem			chair	sella
sedmðn	neu			settlement	conditus
sedos	neu	es		residence	sēdēs
segēts	fem	(segtós)		sowing	satiō
seghdhlā	fem		sghedhlā, seghedhlā	plough handle	buris
seghō	tr	AIa		hold	retineō
seghos	mas			victory	uictoria
ségneumi	tr	BIVb		trap	capiō
segnom	neu			trap	pedica
segō	tr	AIb		sow	serō
seikā	fem			club	fustis
seikō	tr			spill	effundō

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seilō	intr	AIa		drip	exstillō
seimā	fem		seiH-meH ₂	band	uitta
seimṇ	neu		H ₂ sei-mn	secretion	secrētiō
seinus	mas		seiH-nu-	chain	catēna
sējdhlom	neu			sieve	cōlum
sējō	tr	AVIII	sH ₁ y	sieve	cōlō
sékāmi	tr			cut	secō
sēknis	adI			calm	calmōsus
seks / sweks	ind			six	sex
sekstos	adII			sixth	sextus
sekūris	fem			axe	secūris
selgō	tr	AIa		shoot	disparō
seljos	adI			pleasant	amoenus
selkō	intr	AIa	s-(w)elk- ?	drag	trahō
selō	tr	Alb		buy	emō
selom	neu		solos, solā,	residence	domicilium
sēlom	neu		solis	sowing	sementis
selwā	fem			property	possessiō
sēmi-	adII			half	medius
semjō	tr		aquam a naue	bilge out	excupāre
semli	ind			once	semel
sēmṇ	neu	sēmenos		seed	sēmen
semos	mas		semo- / smō-	one	ūnus
senchō	intr			sing	canō
senēks	mas	(senós)	senos; senH ₁ , senH ₂	old	senex
senqō	inc	AIa		sink	mergō
sentos	neu	es		path	sēmita
sepēlijō	tr			bury	sepeliō
sépeltrom	neu			tomb	sepulcrum
sepō	tr			provide	parō
septm	ind			seven	septem
séptmos	adII			seventh	septimus
seqai	dur			follow	sequor
seqi	ind			vis-à-vis	aduersum
seqō	tr			say	dīcō
serō	tr	AIa		connect	serō
serom	neu			liquid	serum
sēros	adI			long-lasting	sērus
sérpenos	mas			snake	serpens
serpō	intr	AIa		crawl	serpō
sesmi				sleep	dormiō
sesqos	fem			sedge	spartum
setis	epic.			visitor	uisitātor
sétjosi				less	sētius
seugō	tr	AIa		suck	sūgō
seutō	den	AIa		boil	ferueō
sewājō	prog			lessen	minuō

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sewe	igenes.			self	sui
séwijos	adII			his	suus
sewō	tr		seuH	stir up (to)	permoueō
silējō	intr			silent (to be)	sileō
síneumi	tr	BIVb	syH(w)	bind	ligō
sinísteros	adI			propice	idōneus
sinō	tr			place	sinō
sisdō	intr			sit down	sīdō
sísghrāmi	tr			smell	olfaciō
síslāwos	adI			beneficial	benignus
sisō	tr		sH ₁	sow	serō
sisqos	adI			dry	siccus
sītús	adI		sHi-tu, cf. sisō; sītus	far-reaching	sparsus
sjewmðn	neu		sjuHmðn	seam	sūtūra
sjewō	tr	AIa	syHw	sew	suō
sjūdhlā	fem		syHw (dh)leH ₂	sewer'sawl	sūbula
sjūtós	adI			sewn	sūtus
skabhjēs	fem			scabies	scabiēs
skabhnom	neu			stool	scamnus
skabhō	tr			scratch	scabō
skaiwós	adI			left-handed	scaeuus
skalpō	tr			carve	scalpō
skandō	dur			mount	scandō
skandslā	fem			ladder	scāla
skāpos	mas			handle	manubrium
skatējō	dur			gush	scateō
skatō	inc			spring	scatō
skedō	intr	AIa		scatter	dispergor
skegō	intr			hasten	festinō
skejō	den	AIa		shine	luceō
skekō	intr	AIa		burst in	irrupō
skelō	tr	AIa		shall	debeō
skelos	neu	es		evil	scelus
skemō	tr			cover	uelō
skerbhō	tr	AIa		hollow out	excauō
skerdā	fem		(s)keHr(- deH ₂) \Hr/Hn	shit	merda
skerdō		AIa		castrate	castrō
skerjō	tr			split	scindō
skerō	intr			spring	exsultō
skeubhō	inc	AIa		escape	effugiō
skeudō	tr	AIa		shoot	ēmittō
skeumō	tr	AIa		cover	obruō
skeuros	adI			dark	obscurus
skeutō	tr	AIa	s-kuH-t	cover	operiō
skewō	tr	AIa	H ₂ kw-	inspect (to)	inspiciō
skidjō	tr			decide	dēcernō

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skijō	tr			know	sciō
skindō	tr			split	scindō
skīwṛ	neu	(skīwṛnós)	(s)kiHu-	shin-bone	tibia
skliqā	fem			pod	siliqua
skljō	tr		(s)kel	split	scindō
sklneumi		BIVb		deflect	deflectō
skṇgjō	intr			limp	claudicō
sknidā	fem			nit	ouum
skodhos	mas			harm	damnum
skoidos	mas			woodpiece	lignum
skoirsās	adII			clown	scurrā
skoitom	neu		skoito-s, skeito-m	shield	scūtum
skojā	fem			shade	umbra
skolmā	fem			small pillar	columella
skōlos	mas			element	ēlementum
skolpos	mas			shelf	pluteus
skortom	neu			whore	scortum
skostrom	neu			canopy	umbraculum
skotos	mas			shadow	umbra
skouros	mas			nord	septentriō
skousā	fem			trousers	pantalōnus
skreibhō	tr	AIa		write	scribō
skreidō	tr	AIa		carve	caelō
skrobhis	fem			pit	scrobis
skroupos	mas			sherd	scrūpus
skroutos	mas			skeleton	larua
skubtis	fem			omoplate	scapulae
skutājō	tr			maim	truncō
skūtos	mas		skuH-to	covering	operimentum
slabai	intr			slip	labor
slagós	adI		slH ₂ gó-	slack	laxus
slakō	tr			hit	offendō
slatā	fem			rod	ferula
sleibō		AIa		slip	prolabor
sleidhō	intr	AIa		glide	surrēpō
sleigō		AIa		smooth	explanō
sleimā	fem		sleH ₁ i-meH ₂	file	lima
sleimājō	tr			polish	līmō
sleimāks	mas	jō		snail	cochlea
sleimos	mas			mud	līmus
sleiwos	adI			violet	liueus
slējús	adI		sleH ₁ i-u-, slējús	smooth	lēuis
sleubō	inc	AIa		slip	prolabor
sleugō	tr	AIa		devour	uorō
sligōn	mas	en		mattock	ligō
slījai	inc			spring	saliō
sloidhos	mas			mass	massa

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sloiwom	neu			plum	prunum
slougos	mas			crowd	multitūdō
slrgjō	tr			gulp	lurcō
sm̥	ind			together	cunctim
smā	ind			certainly	certō
smalos	mas		smH ₁ -lo, smeH ₁ -lo	animal	animal
smegō	tr	AIa		desire	cupiō
smeidhō	tr	AIa		carve	caelō
smeighsli	neu			thousand	mille
smeikā	neu			crumb	mīca
smeirai	tr			wonder	admīror
smeirātlom	neu			miracle	mirāculum
smeiros	adI			wonderful	mīrus
smeitō	tr	AIa		send	mittō
smejō	intr	AIa		smile	arrideō
smekslā	fem			chin	mentum
smelgā	fem			turfgrass	agrostis
smelō	dur	AIa		burn	urō
smemorjā	fem			memory	memoria
sméneumi	inc	BIVb	s-mH(i)-(d)	stain	maculō
smerdā	fem			shit	merda
smerdō	intr	AIa		stink	foeteō
smeros	neu	es		defect	mendum
smerwā	fem			marrow	medulla
smeughō	intr	AIa		smoke	fūmō
smitlā	fem			stain	macula
sm̥lis	adI			similar	similis
sm̥loghós	fem			wife	uxor
sm̥oitis	fem			accordance	concurus
sm̥ópə̌tōr	epi	sm̥ópə̌tros		sibling	fraterculans
smoughos	mas			alleyway	angustiae
smoughos	mas			smoke	fūmus
smudhnō	intr	AVId	acc. uel cōgit.	contrive	machinor
smúghneumi	tr	BIVb		slip in	irrēpō
sn̥ə̌ghjō	intr			creep	rēpō
snadhō	tr			cut off	amputō
snāmi	intr	Bib	snH ₂	swim	nō
sneighs	fem	(snighwós)		snow	nix
sneitō	tr	AIa		curtail	dēminuō
sneitos	adI			scanty	exiguus
snēmi	tr		(s)-nH ₁ , sneH ₁ -ye/o-	spin	neō
snēm̥	neu			yarn	nēmen
snerō	intr	AIa		whirl	contorqueō
snētjā	fem			embroidery	intextus
sneubhō	tr	AIa		marry	nūbō
sneudhs	fem	(snudhós)	(aerea)	smog	turbulentia
sneurom	neu			cable	mitra

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sni	ind			apart	separātim
sníncheti	den			snow	ninguit
snoghā				snake	serpens
sñstus				intelligence	sensus
sñtējō				think	cōgitō
sñterí	ind			missing	absente
snusós	fem			daughter-in-law	norus
sodējō	tr			settle	instituō
sōdjā	mas			soot	fūligō
sodjom	neu			seat	solium
sodóm	intr	(aor.ab eimi)		went	iī
sognos	mas			rope	retinaculum
soitos	mas		soiH(w)-to	magic	uenēficiūm
sōlājai	tr			give joy	sōlor
solkos	mas			furrow	sulcus
solpos	mas			oil	oleum
solwos	pron	solH2-wo, słH2-wo		whole	tōtus
solwotāts	fem	(solwotātjos)		totality	integritās
somējō	tr			make equal (to)	aequō
somós	adII		somHó-; smos	equal	aequus
sontējō	cau			send	mittō
sontis	adI			guilty	sons
soqjos	mas			allied	socius
sorā	fem			flow	fluxus
sorbhējō	tr			sip	sorbeō
sorbhos	fem			rowan tree	sorbus
sorwā	fem			entrails	uiscus
soujós	adII			left	sinister
soukos	mas		swoqós	juice	sūcus
sówijā	fem			kiss	sauia
spakos	mas			drop	gutta
spáneumi		BIVb		extend	extendō
sparos	mas			post	sparus
sparwos	mas			sparrow	parra
speikā	fem			head of cereal	spīca
speiksnā	fem			prickle	spīna
speimis	adI			thin	tenuis
spekjēs	fem			aspect	speciēs
spekjō	tr			look	speciō
spelghā	fem			spleen	lien
spelgis	mas			pole	asser
spelō	intr			recitate	recitō
speltā				table	tabula
spēmi	prog			extend	extendī
spēnos	mas		psteHn ??	nipple	tetta
speqos	mas			cave	specus
sperdhō	tr	AIa		compete	certō
sperghō	intr	AIa		hurry	festinō

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sperjō	tr			scatter (to)	spargō
spes	fem	(spēsos)		hope	spes
speudō	tr			hurry	accelerō
spingjā	fem			finch	passer
spjewō	intr	AIa		spit	spuō
spjonos	fem			foxglove	digitālis purpurea
spjwto	adI			spit	sputus
spleidō	tr	AIa		split	secō
spleighō	intr	AIa		retire	sēcēdō
splighstós	mas			side	latus
splndējō	den			be bright	splendeō
spl̥tājō	tr	AIa		cut off	separō
sp̥ndō	intr		s-pH ₁ d	flutter	coruscō
spoimā	fem			foam	spūma
spoisājō	intr			perspire	spirō
spoisnā	fem			breath	halitus
spoljom	neu			dispossession	spolium
spondējō	tr			promise	spondeō
spondhā	fem			bed	lectus
spōnos	mas			stick	uirga
sponstós	mas			betrothed	sponsus
sportā	fem			basket	sporta
spoudā	tr			haste	coactus
sprāmi				tread	calcō
spreigō	den	AIa		abound	abundō
spreudō	intr	AIa		accelerate	accelerō
sprewō	tr	AIa		excite	excitō
sprgō	tr	AIHh	spH ₂ r-g	burst	displōdō
spr̥nō	cau			move away	sp̥rnō
spros	mas			ankle	talus
squalos	mas			large fish	squalus
sqeros	neu	es		portent	prodigium
sqijā	fem			thorn	spīna
sredhō	intr		sredh / sret	billow	aestuō
sremsō	intr	AIa		fray	diffilor
srenkō	intr	AIa		snore	sternuō
srewō	intr	AIa		flow	fluō
srewtis	fem		quoque srtwis	strom	fluxus
srīgējō	den			be cold	frigeō
srīgos	neu	es		cold	frīgus
srijō				weed	sarriō
sṛkijō	tr			repair	sarciō
srodhos	mas			sea heaviness	aestūs maritimī
sroknā	fem			beak	rostrum
srowmos	mas		srowos, srewm̥n̥	stream	cursus
sṛpā	fem			sickle	falcicula
sṛpijō				cleanse	putō

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sṛwājō	tr			observe	seruō
sṛwos	mas		<i>ṛ sicut twṛkos et non er sicut kerwos</i>	guardian	custōs
stōtis	fem		steH ₂ ti- stH ₂ ti-; stātis	standing post	statiō
stōtus	mas			position	status
stādhlom	neu			stall	stābulum
stagnom	neu			pond	lacus
stagō	den			remain (water)	remaneō
staknom	neu			pool	stagnum
stālos	mas			couch	solium
stāmṇ	neu			arrangement	institūtiō
stānējō	tr			place	condō
stānom	neu			place	locus
stārós	adI			stable	stābilis
stātlom	neu			platform	catasta
staurējō	tr			set	instaurō
stauros	mas		stoH ₂ u-ro	stake	adminiculum
staurós	adI		stūrós	staked	adminiculātus
stāwō	tr	AIa		stop	dētineō
steighō	intr	AIa		walk	ambulō
steipēts	fem	(steiptós)		stick	stīpēs
steiwā	fem			plough handle	stīua
stejō	inc	AIa		condense	spissō
stejsjā	fem			icicle	stīria
stelghō	intr	AIa		flow down	dēfluō
stelō	tr			put	pōnō
stelōn		(stélenos)	cf. tálejā	offshoot	stolō
stelpō	intr	AIa		stare	intueor
stembhō	tr	AIa		stamp on	conculcō
stemō	intr			stumble	titubō
sterbhnjom	neu			dry skin	pellis sicca
sterbhō	intr	AIa		decline	decadō
stergō	tr	AIa		love	amō
sterkos	neu	es		shit	stercus
sterkos	neu	es		shit	stercus
sterlā	fem		H ₂ s-ter-leH ₂	star	stella
sternom	neu			entrails	intestina
sternós	adI		sterH ₁ -nó/ sterH ₁ -yó	rigid	rigidus
sterō	tr	AIa		rob	fūror
stérolis	adI			sterile	sterilis
steros	mas		H ₂ ster-	star	stella
stērps	mas	(strpos)		trunk	stirps
stertō	intr	AIa		snore	stertō
stertos	mas			pinnacle	pinaculus
steugō	inc	AIa		get injured	ferior
steumi	tr			inform	ēnuntiō

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steupō	tr	AIa		hit	quatiō
steutō	tr	AIa		support	sustineō
stigājō	tr			stick	instigō
stiprós	adI			safe	secūrus
stlām̃	neu			plate	lamina
stlātos	mas		s-tlH ₂ -to	side	latus
stlītis	fem	ej		legal suit	lis
stlokos	mas			place	locus
stṃnos	mas			trunk	truncus
stṃtējō	den			be delayed	moror
stobhos	mas			pillar	sublicā
stoghos	mas			trestle	uara
stoighos	mas			street	uia
stoipējō	cau			densify	stīpō
stolbos	mas			ruler (in topography)	uirga
stolgos	mas			force	uis
stōm̃	neu	es		palate	palātum
storejō	cau			straighten (to)	corrigō
stoudjom	neu			study	studium
stoupā	fem			oakum	stūpā
strām̃				lay	strām̃ðn
strātos				army	exercitus
strātós	adI		strH ₂ -tó	spread	strātus
streibā	fem			line	linea
streidō	dur	AIa	streid / streig	hiss	stridō
streigō	tr	AIa		draw	stringō
streigs	fem	(strigós)		night bird	strīx
strengō		AIa		restrict	obstringō
strengom				string	corda
strēnwos	adI			active	strēnuus
strepō	intr	AIa		make noise	strepō
streubhō	tr	AIa		make bitter	acerbō
streudō	dur	AIa		fight	certō
strewō	tr	AIa	str-w	strew	sternō
strigājō	intr			stop	strigō
strigjā	fem			line	stria
stringō	tr	AVIa		draw tight	stringō
str̃neumi	intr	BIVb	pster	sneeze	sternuō
str̃nō	tr		s-trH ₂	spread	sternō
str̃nos	mas			extension	strātus
strudsmā	fem			pipe	canna
strutjos	mas			ancestor	abauus
struwis	fem	ej		heap	struēs
studējō	den			thrash	studeō
stupējō	den			rigid (to be)	stupeō
stupos	mas			stick	pālus
stupróm	neu			dishonour	dedecus
sū	lois		H ₁ su-(H)	well	benē

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sudhjom	mas			beer	zythum
suĵō	tr			spill	effundō
sūkós	mas			piglet	porcellus
sulĵā	fem			dregs	colluviēs
súnoros	mas			vigorous	uiridis
sūnúš	mas	ew		son	filius
sup	ind			under	sub
supā	fem			soup	ius
supājō	tr			throw	iaciō
sūs	mas	(suwós)	suH-; sews	pig	sūs
susājō	intr			buzz	susurrō
susdos	mas		H ₂ sus- H ₂ suso H ₂ susk ^(w) O-/ H ₂ susdo- /H ₂ souso-	/ / dry	siccus
suwids	adI			expert	doctus
swādēĵō	cau			recommend	suādeō
swādús	adI		sweH ₂ d-u-; swādus	pleasant	suauis
swāi	ind			so	sīc
swēdhskō	inc			become accustomed	suēscō
swēdhus	fem	ew		custom	mos
sweidō				blaze	flagrō
sweidos	neu	es		star	sīdus
sweighlājō	intr			whistle	sībilō
sweigō	prog	AIa		seesaw	oscillō
sweisdō		AIa		whistle	siffilō
swekō	intr	AIa		smell good	fragrō
swekos	adI			fragrant	fragrant
swekros	mas			father-in-law	socer
swekrús	fem	ew	swekrúH ₂	mother-in-law	socrus
swelā	fem			sunlight	apricum
swelājō	tr			swell	tumefaciō
swelāks	mas	(swélakos)		seal	phoca
swelĵos	mas			relative	familiāris
swelō	intr	AIa		glare	splendeō
swelom	neu			sleeper	traversa
swelplos	neu	es		sulphur	sulpur
swemōr	dur			be followed	secūtus ueniō
swénāmi	intr	BIIIa		sound	sonō
swendhō	prog	AIa	s-wndh	swindle	dēcrēscō
swepō	dur	AIa		sleep	dormiō
swepr	neu	(swépenos)		dream	somnium
swerbhō	inc	AIa	swr-bh	turn	gyrescō
swerghō	tr	AIa		take care	cūrō
swerō	intr	AIa		whisper	susurrō
swērús	adI		swērus	important	sērius

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swerwos	adI			snappy	transpuntorius
swesōr	fem	er		sister	soror
swesreinos	mas			sister's son	sobrīnus
swīnós	adII			porcine	porcīnus
swoidājō	intr			sweat	sūdō
swólejā	fem			ground	solea
swombhós	mas			fungus	fungus
swonos	mas		swonós ?	noise	sonus
swōpijō	cau			fall asleep	sōpiō
swoplom	neu			broom	everriculum
swopnjājō	intr		cog.	dream	somniō
swopnjom	neu			dream	somnium
swopnos	mas			sleep	somnus
sworā	fem			wade	sūra
swordis	fem	ej		rubbish	sordēs
sworēx		(sworkós)		shrew	sorēx
sworos	mas			stick	pālus
swr̥neumi	tr	BIVb		wound	uulnerō
swr̥swrājō	intr			whisper	susurrō
tðkējō	inc			silent (to be)	taceō
tādējō	tr			qualify	qualificō
tādhēskō	intr			melt	tābēscō
tādhis	fem	ej	tH ₂ -dh/k/w	corruption	tābēs
tagjō	tr			put in order	ordinō
taismos	mas			dough	massa
tājō	tr			steal	fūrōr
tājots	mas	(tājetos)	tāyus = tātis	burglar	fur
tálejā	fem		cf. stelōn	stab	talea
tālis	adII			such	tālis
tām	ind			at that point	tam
tarsós	mas			belly	uenter
tárudos	adI			slow	tardus
tātā	neu			dad	pappa
tauros	mas			bull	taurus
tausnim	ind			silently	silenter
tausos	adI			silent	silens
tāw̥ptos	pron			so much	tantus
teglā	fem			tile	tegula
tegnom	neu			beam	tignum
tegō	tr			cover	tegō
tegos	neu	es		shrine	aedicula
tegtom	neu			ceiling	tectum
tegús	adI		tegos	dense	crēber
teibh̥jā	fem			shin-bone	tibia
teknom	neu			creature	crātūra
tekō	tr	AIb		receive	accipiō
tekslā	fem			axe	secūris
teksnā	fem			technique	ars
teksō	tr	AIa	tek(s)	fashion	fabricor

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tekstā	fem			bowl	testa
tekstlom	neu			web	tēla
tekwō	intr	AIa	tHkw	run away	ēcurrō
telmōn	neu		tel-H ₂ m / tel-sm ? wolsnos cf.	strap	infula
telpō	intr	AIa		get in a space	locus mihi est
telsus	fem	ew	telH ₂ O-, telH ₂ mōn (télH ₂ menos)	ground	tellus
tembhō	tr	AIa		spurn	contemnō
temesras	fem		pl.	darkness	tenebrae
temlom	neu		temH-lo /temH-no	temple	templum
temos	neu	es		obscurity	obscuritās
tēmos	mas			drunken	ēbrius
tempos	neu	es		time	tempus
tenā	fem			ribbon	taenia
tendō	tr			extend	tendō
tenghō	tr	AIa		drag away	abstrahō
tengō	tr			impregnate	tingō
teni	ind			until	tenus
tenjō	tr	AIa		extend	prolongō
tenjom	neu			temple	tempus
tenkō	prog			result	ēueniō
tenos	neu	es		ligament	ligāmen
tensō				extend	prōtēlō
tentrom	neu			string	fūnis
tepējō	den			be warm	tepeō
tepnos	neu	es		fever	febris
teqom	neu			passage	trāiectiō
tercō	tr	AIa		threaten	minor
téredhrom	neu			auger	terebra
tergō	tr	AIa	*trigwō ? gr. tribw cf.	wipe	tergō
tergslom	neu			towel	mantellum
terjō	tr			rub	teirō
termēn	mas	(termṇós)		end	terminus
terō	tr	BIVb	trHu1; tṛneumi	cross	transeō
terpō	intr	AIa		enjoy oneself	oblector
terptis	fem	jo	quoque tṛptis	enjoyment	delectātiō
tersā	fem			earth	terra
tersai	intr			get dry	serescō
tersējō	intr			make afraid	terreō
tersós	mas	es		terror	terror
térunos	adI		teren	feeble	tener
tetkōn	mas	(tétkenos)		woodworker	lignārius
tettā	fem			teat	tetta

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téturos	mas			turkey	pavō
teukmṇ	neu			progeny	progeniēs
teukō		AIa		dig out	effodiō
teupō	inc	AIa		knee	genuflector
teurō	tr	AIa		stop up	obtuurō
teusmṇ	neu			lot	cumulus
teusqa	neu	(tesqōm)		desert	desertum
teutā	fem		teuteH ₂	people	populus
tewai	tr			observe	tueor
tewos	neu	es		force	impetus
tibhjá	neu			stalk	tibia
timējō	tr			be afraid	metuō
titijō	intr			chirp	titio
tlāmi	den		telH ₂ ; cf. tlnō, tlnāmi	endure	resistō
tlātjos	adI			patient	patiens
tlījō	den			rest	requiescō
tlnō	tr		telH ₂ ; tlnāmi; cf, tlāmi	raise	tollō
tloqai	intr			speak	loquor
tmāmi	tr			cut	secō
tṇpus	adI			elastic	diffusilis
tṇējō	den tr			comprehend	teneō
tṇghus	adI			fat	obēsus
tṇgō	tr			touch	tangō
tṇkros	adI			dense	crēber
tṇktos	adI			legitimate	legitimus
tṇtos	adI			stretched	tentus
tṇus	adI		tnH ₂ -u-	thin	tenuis
togā	fem			garment	toga
toi	ind			certainly	profectō
tōkslos	mas			hatchet	bipennis
toksos	fem			juniper	iuniperus
tokwós	adI			fugacious	fugax
tolājō	tr			call for	aduocō
tolkos	mas			bran	furfur
tom	ind			then	tum
tom-ke	ind			then	tunc
tónāmi	intr	BIIIa	(s)tenH ₂ (s)tonH ₂	/ resonate	tonō
tondějō	tr			shave	tondeō
tonējō	tr			extend (to)	extendō
tongējō	tr			give one's opinion	opīnor
tonslis	fem			fierceness	tūlēs
tonstór	adII	jo		hairdresser	tonsōr
tóntenos	mas			noise	strepitus
tontrom	neu			thunder	tonitrus
topnos	mas			warmth	tepor
toqe	ind			also	quoque

Appendix I: Indo-European in Use

torcós	adI			threatening	minax
tori	ind			therefore	propterea
tórkmm̐tom	neu			tension (engine)	tormentum
torós	adI			loud	penetrans
torpējō	cau			want	delectō
torqējō	cau			turn	torqueō
torqis	fem	ej		necklace	torquēs
torsējō	cau			dry	torreō
torsm̐	neu			thunder	tonitrum
tot(j)os	adII			so many	tot
totrēd	ind			towards there	eō
totrōd	ind			from there	inde
toughā	fem			luck	fortūna
touknā	fem			thigh	perna
trabhis	fem	ej		beam	trabs
traghō	tr			drag	trahō
traghsmā	fem			weft	trāma
trāntis	ind			through	trāns
trebhō	den	AIa	trb(h)	dwelt	habitō
treghnos	mas			brave	audāx
treistis	adI			sad	tristis
trejes	trija				
trísosres			tab	three	trēs
tremō	dur	AIa		tremble	tremō
trenkō	tr	AIa		incite	incitō
trepō	tr	AIa		pass	perambulō
tresō		AVIII		shiver	tremō
treudō	cau	AIa		force in	intrūdō
treughos	adI			miserable	miser
treukō	tr	AIa		cut out	abscindō
trījōtos	mas			sea	mare
triplós	adII			threefold	triple
trípl̐tis	fem			triplication	triplicatiō
trīs	ind			three times	ter
trisinōs				three in a go	trīnī
tristis	adII	ej		witness	testis
tritjos	adII			third	tertius
trītós	adI		triH-tó	rubbed	trītus
tr̐mēts	fem	(tr̐mtos)		wedge	cuneus
tr̐mos	mas			termite	tarmes
tr̐nā	fem			thorn	spīna
troghos	mas			posterity	subolēs
trogjā	fem			sow	porca
trogos	mas			pig	porcus
tropos	mas			way	uia
troughi	ind			alas	uae
trowā	fem			ladle	trua
trowō	tr	AIId		gnaw away	corrōdō
tr̐pējō	den			torpid (to be)	torpeō

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tŗrpis	adI			ugly	turpis
tŗsdos	mas			thrush	turdus
tŗsējō	den		tŗsyō	be thirsty	sitiō
tŗstis	fem			thirst	sitis
tŗstos	adI			dry	siccus
tŗsus	adI			dry	siccus
trudskā	fem			leprosy	leprae
trudsmós	adI			annoying	molestus
truks	epi	(trukós)		slaughterer	interfector
tū	pron	(tewe)		you	tū
tumējō	den			be swollen	tumeō
tumlós	mas			mound	tumulus
túmolos	mas			turmoil	tumultus
tundō	tr			strike	tundō
turgējō	den			swell	urgeō
tūrós	mas			cheese	caseus
tursis	fem	ej		tower	turris
tusjai	intr			rejoice oneself	delector
tusnā	fem			wave	unda
tustijō	intr			cough	tussiō
tustis	fem	ej		coughing	tussis
twakos	neu	es		armour	armatūra
twenkō	tr	AIa		force	compellō
twerō	tr	AIa		enclose	amplexor
twoisós	adI			violent	uiolentus
twŗbhōn	mas	(twŗbhnos)		whirl	turbō
twŗkos	mas			boar	aper
twŗmā	fem			troop	turma
twŗtos	adI			quick	uelox
uchējō	den			wet (to be)	umeō
úderis	fem			excess	excessus
úderos	mas			uter	úterus
ūdhŗ	neu	(ūdhenos)	H1uHdh-ŗ/n	udder	ūber
ūdhros	adI			udder	ūber
ūdhús	adI		ūdhus	immediate	immediātus
uksōn	and	en		ox	bos
uksōr	fem	(úkseros)		wife	uxor
ululājō	intr			howl	ululō
unksrā	fem		unksnā	shadow	umbra
upelos	adI		H2wp-elo	bad	malus
úperesū	ind			very well	optimē
uperi	ind		H2u-per	over	super
úperos	adI			high	superus
upo	ind			under	sub
upóqrijom	neu			commission	interpretium
upósēdjom	neu			fundament	fundamentum
upóstānom	neu			service	seruitium
úpselos	adI		upsēlós	high	altus
upsi	ind			above	supra

Appendix I: Indo-European in Use

uqnós	mas		cf. aukslā	owen	fornus
urús	adI		H ₁ ur-u; urus	wide	amplus
ustós	adI			burnt	ustus
uta	ind			rather	potius
uti, ud	neu			out	ex
wðdrā	fem			otter	lutra
wðgājai	intr			roam	uagor
wðrbhis	fem	ei		perimeter	circumductus
wadhis	mas	ej		caution	uas
wadhō	intr			walk	uādō
wadhom	neu			river ford	uadum
wageinā	fem			sheath	uagīna
wāghijō	intr			cry	uāgiō
wai	ind			alas	uae
wailos	mas			humble	humilis
wailós	mas			wolf	lupus
wakkā	fem			cow	uacca
walgos	adI			bandy-legged	ualgus
walnom	neu			wall	uallum
walóm	intr	(aor. a chenmi)		died	mortus est
wapējō	den			foggy, to be	nebulosus sum
waplājō	den			scream	clamō
warnā	fem			little owl	noctua
wāros	mas			asunder-legged	uārus
wāstos	adI			empty	uānus
wātis	mas	ej		poet	uatēs
watjos	adI			legbent	uatius
we	encl			or	ue
webhō	tr		Hwebh	weave	texō
wédhneumi	tr	BIVb		link	ligō
wedhō	tr		wHedh Hwedh	/ lead	addūcō
wedhṛ	neu	wédhenos		weapon	arma
wedhrom	neu			weather	tempus
wedhskō	tr			strike	caedō
wedmṇ	neu			utterance	locūtiō
wedō	tr	Alb		tell	narrō
weghjā	fem			way	uia
weghō	tr			carry	uehō
weghtis	fem	jo		leuer	uectis
weghtlom	neu			vehicle	uehiculum
weghtór	mas			transporter	uector
wegō	dur	Alb		be strong	uegeō
wegō	tr	Alb		weave	texō
weidhō	tr	Ala		divide	dīuidō
weidos	neu	es		presence	praesentia
weiks	mas/ fem	(wikós)	cf. woikos	house	domus

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wéiktomā	fem			victim	uictima
weimṇ	neu	en		loom	textrīnum
weipō	tr	AIa		wrap	inuoluō
weiros	mas			wire	fūnis
weis	neu	(wīsós)	weiH-s/os/es	strength	uis
weisnā	fem			vein	uēna
weisō	den	AIa		flow	fluō
weitēks	fem	(weitkós)		agnus castus	uitēx
weitis	fem	ej		vine	uītis
weitō	cau	AIa		arch	incuruō
wéiwersā	fem			ferret	uiuerra
wejes / weje	pron		wei-; tab	we	nōs
wekmi	tr			desire	desiderō
wekō	intr	AIb		arch	flectō
weksós	adI			convex	conuexus
weldō	tr		Hwl; cf. wļeumi	tear off	uellō
welīks	fem	(welikós)	wļēiks	bracelet	armilla
welmi	tr			will	uolō
welnā	fem		wļnā	wave	unda
welnos	neu	es		hair	uellus
welō	tr	AIb		see	uideō
welpō	tr	AIa		expect	expectō
weltis	fem		wļtis	will	uoluntās
wélwmen	neu			wrapping	tegmen
welwō	tr		H ₁ wl-w	turn	uoluō
wélwtrom	neu			envelope	inuolūcrum
wémāmi	tr			vomit	uomō
wēmos	adI			beautiful	pulcher
wénāmoi	tr			aspire	appetō
wendhō	intr	AIa		attack	oppugnō
wenēsnom	neu			love potion	uenēnum
wenjā	fem			family	familia
wenō	dur			desire	concupiscō
wenos	neu	es		love	amor
wenseikā	fem			blister	uensīca
went	suff	wentjos		equipped with	praeditus
wentos	mas		H ₂ weH ₁ -nto- / H ₂ wH ₁ ento-	wind	uentus
weqtis	fem			thing	rēs
weqtlom	neu			expression	dictus
wēr	neu	(wřos)		door	forēs
werbos	neu	es	H ₁ wr-b	whip	flagellum
wereinā	fem			sect	secta
wergō	den	AIa		head towards	uergō
wergom	neu			work	labos
weri	neu		Hwr; wēr, wēri	water	aqua
wernā	fem			alder	betullla
wēros	adI			true	uērus

Appendix I: Indo-European in Use

werpō	tr	AIa		wrap out	ēuoluō
wersis	mas			male	mās
wersm̥	neu	en		wart	uerrūca
wersō		AIa		drag	uerrō
werstidhlom	neu			hall	uestibulum
wertm̥n	neu			direction	directiō
wertos	mas			value	ualor
wertrom	neu			defence	dēfensiō
wérunos	mas			belt (for safety)	cinctus
weskai	neu			eat	uescor
wēskō	tr			squeeze	exprimō
wésnāmi	tr	AIVa		prick	instigō
wesnējō	tr			bargain	negotior
wesnom	neu			sell	uēnum
wesō	den	Alb	H ₂ wes	stay	maneō
wésolis	adI			cheap	uīlis
wespros	mas		* <i>we-</i> 'exclūsium' we-skw(e)ro- / wesp(e)ro- / wekero-	evening	uesper
wēsṛ	neu	(wesenós / wesentós/)		spring	uēr
wēsros	mas			morning	matina
westā	fem			food	pulmentum
westijō	tr		cf. wosējō	dress	uestiō
westis	fem	jo		cloth	uestis
westos	mas			feast	daps
westus	mas			dwelling	domicilium
wēsus	adI		H ₁ wesu-; wesu-/wēsu- /wosu-; we-H ₁ su?	excellent	excellens
wétāmi	tr		* <i>we-</i> exclūsium	forbid	uetō
wetlos	mas			calf	uitulus
wetos	neu	es		time	tempus
wetsós	wes			one-year creature	annucula creātūra
wetwos	adI	es		old	uetus
wī	ind			separate	sē
wibrājō	cau			vibrate	uibrō
widā	fem			appearance	appārentia
widējō	tr			see	uideō
wídhewā	fem		H ₁ wídheweH ₂	widow	uidua
widhus	fem			willow	salix
widjom	fem		widjā	wisdom	scientia
wigējō	den			be strong	uigēō
wijējō	den			be curved	uieō

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wijēskō	inc			wither	uiēscō
wikis	fem	ej		chance	uicis
wikjō	dur			contend	certō
wikkā	fem			witch	uenēfica
wiklutom	adII			widely known	satis constans
windō	tr	AVIb		find out	comperiō
windō peri	fac			investigate	inuestigō
windos	adI			apparent	appararens
winis	fem			cable	cable
winkijō	tr			shackle	uinciō
winkō	tr			win	uincō
winsō	cau	AVIa		cause	causō
wīrós	mas		wiHró-, weiHro-, woiHro-	man	uir
wisējō	den			sprout	uireō
wiskom	neu			mistletoe	uiscum
wisogā	fem			club	uirga
witājō	intr			turn around	circumeō
wíteros	adI			supplementary	complementārius
wītjā	fem		wHi-	framework	textus
witjom	neu			curve	curua
witus	mas		cf. kantos	wheelrim	cantus
wíweqmi	tr	AIa		speak	loquor
włbhontis	mas		H ₁ wlb(h)o-nt-	camel	camēlus
włďá	fem			feast	conuiuium
włdhējō	tr		wlH ₂ dh; cf. wļēyō	rule	imperō
wļeiqos	neu	es		liquid	liquor
wļeisō	tr	AIa		beat	uerberō
wļējō	den		wlH ₂ ; cf. wōldhēyō	be fit	ualeō
wļepējō	den			whip	lepeō
wļeumi	tr	BIIIb	Hwel; weldō	cf. pillage	diripiō
wlewā	fem			lion	leō
wļghis	fem			basin	uallis
wļiqējō	den			liquid (to be)	liqueō
wļnā	fem		H ₁ wl-neH ₂	wool	lāna
wļōrom				strap	lōrum
wļqos	mas			wolf	lupus
wļtis	fem			tuff of hair	caesariēs
wļtus	mas			impression	adspectus
wņďá	fem			wave	unda
wņghējō	den			complexed (to be)	tortus sum
wochējō	tr		H ₁ wgh	vow	uoueō
wodā	fem			water	aqua
wodŗ	neu	(wédenos)	wedŗ	water	aqua

Appendix I: Indo-European in Use

woghējō	cau			induce (to)	addūcō
woghnos	mas			car	uehiculum
woghos	mas			transport	uectiō
wogsmis	mas			ploughshare	uomer
woida	tr			know	sciō
woidējō	tr			orient	dirigō
woidlos	mas			basket	uidulus
woidwós	adII	(woidwesos)	fem: widwðsyā	knowing	consciūs
woighos	fem			elm	ulmus
woikā	fem			vigour	uigor
woikos	mas		cf. weiks	village	uīcus
woikós	adI		wikrós	steadfast	peruicax
woikslā	fem			farm	uilla
woinā	fem			punishment	poena
woinos	mas		weinom	wine	uīnum
woisos	mas			poison	uenēnum
woitā	fem			hunt	uēnātus
wolējō	tr			choose	ēligō
wolgos	neu	es		people	uulgus
wolmos	mas			roll	spīra
wolos	mas		wōlos	choice	ēlectiō
wolós	mas			willing	uolens
wolpis	fem	ej		fox	uulpēs
wolsnos	neu	es	wolHno, wolsno; telmón	cf. wound	uulnus
wolsom	neu			damage	perniciēs
wolwós	adI			round	rotundus
wondhējō	cau			wind	torqueō
wondhos			wondhsos	hair	caesariēs
wōnós	adI			empty	uānus
wopjā	fem			water	aqua
wopsā	fem		wop-seH ₂	wasp	uespa
woqs	fem	(weqs)		voice	uox
worgjom	neu			cannabis	cannabis
wormis	mas			worm	uermis
wornos	mas			colour	color
worós	mas			policeman	tresuir
wortējō	cau			invert (to)	inuertō
wosējō	tr		cf. westijō	dress	uestiō
wosis	mas		H ₁ ws	turban	tiara
wosmós	adI			wet	madidus
wṛaghmn̄	neu			backbone	spīna
wṛdhom	neu			word	uerbum
wṛdjā	fem		wṛH2d-iH2; cf wṛādēiks	root	rādx
wṛegis	mas			enclosure	clausūra
wṛeikā	fem			veil	rīca
wṛéikonjom	neu			webbing	ricinium

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wṛeīnā			Hwr	harn	urīna
wṛējai	tr			respect	uereor
wṛēn	mas	(wernos)		lamb	ueruēx
wṛeumi	tr	BIIIb	werjō, wṛneumi	close	claudō
wṛeumi apo	tr	BIIIb	werjō apo, wṛneumi apo	open	aperiō
wṛgā	fem			vigor	uigor
wṛgējō	den			attack (to be in)	urgeō
wṛgījō	tr/intr			work	laborō
wṛgos			wṛH-go-	attack	impetus
wṛijō	tr			close	claudō
wṛisdējō	intr			laugh	rīdeō
wṛnāmi	tr	AIVa		persecute	persequor
wṛṇgai	intr			grumble	ringor
wṛonkā	fem			hand	manus
wṛonkis	fem			dip	fouea
wṛrādīks	fem	(wṛrādīkós, wṛrādījós)	wṛH2d-eiH-; cf. wṛdyā	root	rādix
wṛstā	fem		H₂wrs; worsos, worsā	rain	pluuia
wṛstis	fem			turn	uersiō
wṛstos	mas			row	uersus
wṛtō	tr	AIIh		turn	uertō
wṛtom	neu			enclosure	saepimen
wṛughis	mas	ej		rye	sēcale cereāle

APPENDIX II: PROTO-INDO-EUROPEAN PHONOLOGY

II.1. DORSALS: THE PALATOVELAR QUESTION

1. Direct comparison in early IE studies, informed by the *Centum-Satem* isogloss, yielded the reconstruction of three rows of dorsal consonants in Late Proto-Indo-European by Bezzenger (1890), a theory which became classic after Brugmann (*Grundriss*, 1879) included it in its 2nd Edition. The palatovelars **kʲ*, **gʲ*, and **gʲʰ* were supposedly [k]- or [g]-like sounds which underwent a characteristic phonetic change in the satemized languages – three original “velar rows” had then become two in all Indo-European dialects attested.

NOTE. It is disputed whether Albanian shows remains of two or three series (cf. Ölberg 1976, Kortlandt 1980, Pänzer 1982), although the fact that only the worst known (and neither isolated nor remote) IE dialect could be the only one to show some remains of the oldest phonetic system is indeed very unlikely.

After that original belief, then, The centum group of languages merged the palatovelars **kʲ*, **gʲ*, and **gʲʰ* with the plain velars **k*, **g*, and **gʰ*, while the satem group of languages merged the labiovelars **kʷ*, **gʷ*, and **gʷʰ* with the plain velars **k*, **g*, and **gʰ*.

NOTE. Such hypothesis would then support an evolution [*kʲ*] → [*k*] of *Centum* dialects before *e* and *i*, what is clearly against the general tendency of velars to move forward its articulation and palatalize in these environments.

2. The existence of the palatovelars as phonemes separate from the plain velars and labiovelars has been disputed. In most circumstances they appear to be allophones resulting from the neutralization of the other two series in particular phonetic circumstances. Their dialectal articulation was probably constrained, either to an especial phonetic environment (as Romance evolution of Latin [k] before [e] and [i]), either to the analogy of alternating phonetic forms. However, it is difficult to pinpoint exactly what the circumstances of the allophony are, although it is generally accepted that neutralization occurred after *s* and *u*, and often before *r* or *a*; also apparently before *m* and *n* in some Baltic dialects

NOTE. The original allophonic distinction was disturbed when the labiovelars were merged with the plain velars. This produced a new phonemic distinction between palatal and plain velars, with an unpredictable alternation between palatal and plain in related forms of some roots (those from

original plain velars) but not others (those from original labiovelars). Subsequent analogical processes generalized either the plain or palatal consonant in all forms of a particular root. Those roots where the plain consonant was generalized are those traditionally reconstructed as having “plain velars” in the parent language, in contrast to “palatovelars”.

Many PIE linguists still believe that all three series were distinct in Late Proto-Indo-European, although newest research show that the palatovelar series were a later phonetic development of certain Satem dialects, later extended to others; this belief was originally articulated by Antoine Meillet in 1893, and was followed by linguists like Hirt (1899, 1927), Lehmann (1952), Georgiev (1966), Bernabé (1971), Steensland (1973), Miller (1976), Allen (1978), Kortlandt (1980), Shields (1981), Adrados (1995), etc.

NOTE. There is, however, a minority who consider the labiovelars a secondary development from the pure velars, and reconstruct only velars and palatovelars (Kuryłowicz), already criticized by Bernabé, Steensland, Miller and Allen. Still less acceptance had the proposal to reconstruct only a labiovelar and a palatal series (Magnusson).

There is residual evidence of various sorts in the Satem languages of a former distinction between velar and labiovelar consonants:

- In Sanskrit and Balto-Slavic, in some environments, resonant consonants (denoted by *R*) become *iR* after plain velars but *uR* after labiovelars.
- In Armenian, some linguists assert that *k^w* is distinguishable from *k* before front vowels.
- In Albanian, some linguists assert that *k^w* and *g^w* are distinguishable from *k* and *g* before front vowels.

NOTE. This evidence shows that the labiovelar series was distinct from the plain velar series in Late PIE, and cannot have been a secondary development in the Centum languages. However, it says nothing about the palatovelar vs. plain velar series. When this debate initially arose, the concept of a phoneme and its historical emergence was not clearly understood, however, and as a result it was often claimed (and sometimes still is claimed) that evidence of three-way velar distinction in the history of a particular IE language indicates that this distinction must be reconstructed for the parent language. This is theoretically unsound, as it overlooks the possibility of a secondary origin for a distinction.

3. The original (logical) trend to distinguish between series of “satemizable” dorsals, called ‘palatovelars’, and “non-satemizable” dorsals, the ‘pure velars’, was the easiest

explanation found by neogrammarians, who apparently opened a different case for each irregularity they found. Such an initial answer should be considered erroneous today, at least as a starting-point to obtain a better explanation for this “phonological puzzle” (Bernabé).

NOTE. “Palatals” and Velars appear mostly in complementary distributions, what supports their explanation as allophones of the same phonemes. Meillet (1937) establishes the contexts in which there are only velars: before *a*, *r*, and after *s*, *u*, while Georgiev (1966) states that the palatalization of velars should have been produced before *e*, *i*, *j*, and before liquid or nasal or *w* + *e*, *i*, offering statistical data supporting his conclusions. The presence of palatalized velar before *o* is then produced because of analogy with roots in which (due to the apophonic alternance) the velar phoneme is found before *e* and *o*, so the alternance **kʲe/*ko* would be leveled as **kʲe/*kʲo*.

Arguments in favor of only two series of velars include:

A) The plain velar series is statistically rarer than the other two, is entirely absent from affixes, and appears most often in certain phonological environments (described above).

B) Alternations between plain velars and palatals are common in a number of roots across different “*Satem*” languages, where the same root appears with a palatal in some languages but a plain velar in others. This is consistent with the analogical generalization of one or another consonant in an originally alternating paradigm, but difficult to explain otherwise:

- **ak/ok-*, *sharp*, cf. Lith. *akúotas*, O.C.S. *ostru*, O.Ind. *asrís*, Arm. *aseln*, but Lith. *asrùs*.
- **akmon-*, *stone*, cf. Lith. *akmuõ*, O.C.S. *kamy*, O.Ind. *ásma*, but Lith. *ásmens*.
- **keu-*, *shine*, cf. Lith. *kiáune*, Russ. *kuna*, O.Ind. *Svas*, Arm. *sukh*.
- **bʰleg-*, *shine*, cf. O.Ind. *bhárgas*, Lith. *balgans*, O.C.S. *blagu*, but Ltv. *blâzt*.
- **gʰerdʰ-*, *enclose*, O.Ind. *grhá*, Av. *gərəda*, Lith. *gardas*, O.C.S. *gradu*, Lith. *zardas*, Ltv. *zârdas*.
- **swekros*, *father-in-law*, cf. O.Sla. *svekry*, O.Ind. *śvaśru*.

B) The existence of different pairs (“*satemized*” and “*not-satemized*”) in the same language, as e.g.:

- *selg-, *throw*, cf. O.Ind. *srjáti, sargas*
- *kau/keu-, *shout*, cf. Lith. *kaukti*, O.C.S. *kujati*, Russ. *sova* (as Gk. *kauax*); O.Ind. *kauti, suka-*.
- *kleu-, *hear*, Lith. *klausyti, slove*, O.C.S. *slovo*; O.Ind. *karnas, sruti, srósati, śrnóti, sravas*.
- *leuk-, O.Ind. *rokás, ruśant-*.

NOTE. The old argument proposed by Brugmann (and later copied by many dictionaries) about “Centum loans” is not tenable today. For more on this, see Szemerényi (1978), Mayrhofer (1952), Bernabé (1971).

C) Non-coincidence in periods and number of satemization stages;

- Old Indian shows two stages,
 1. PIE *k → O.Ind. *s*, and
 2. PIE *k^{we}, *k^{wi} → O.Ind. *ke, ki*, & PIE *ske, *ski > O.Ind. *c* (cf. *cim, candra*, etc.).
- In Slavic, however, three stages are found,
 1. PIE *k → *s*,
 2. PIE *k^{we}, *k^{wi} → č (*čto, čelobek*), and
 3. PIE *k^{woi} → *koi* → *ke* gives *ts* (as Sla. *tsenā*).

D) In most attested languages which present aspirated as result of the so-called “palatals”, the palatalization of other phonemes is also attested (e.g. palatalization of labiovelars before *e, i*, etc.), what may indicate that there is an old trend to palatalize all possible sounds, of which the palatalization of velars is the oldest attested result.

E) The existence of ‘Centum dialects’ in so-called Southern dialects, as Greek and some Paleo-Balkan dialects, and the presence of Tocharian, a ‘Centum dialect’, in Central Asia, being probably a northern IE dialect.

NOTE. The traditional explanation of a three-way dorsal split requires that all Centum languages share a common innovation that eliminated the palatovelar series. Unlike for the Satem languages, however, there is no evidence of any areal connection among the Centum languages, and in fact there is evidence against such a connection -- the Centum languages are geographically

noncontiguous. Furthermore, if such an areal innovation happened, we would expect to see some dialect differences in its implementation (cf. the above differences between Balto-Slavic and Indo-Iranian), and residual evidence of a distinct palatalized series (such evidence for a distinct labiovelar series does exist in the Satem languages; see below). In fact, however, neither type of evidence exists, suggesting that there was never a palatovelar series in the Centum languages.

4. It is generally believed that Satemization could have started as a late dialectal ‘wave’ (although not necessarily), which eventually affected almost all PIE dialectal groups. The origin is probably to be found in velars followed by *e*, *i*, even though alternating forms like **gen/gon* caused natural analogical corrections within each dialect, which obscures still more the original situation. Thus, non-satemized forms in so-called Satem languages are actually non-satemized remains of the original situation, just as Spanish has *feliz* and not **heliz*, or *fácil* and not *hácil*, or French uses *facile* and *nature*, and not **fêl* or **nûre* as one should expect from its phonetic evolution. Some irregularities are indeed explained as borrowings from non-satemized dialects.

5. Those who support the model of the threefold distinction in PIE cite evidence from Albanian (Pedersen) and Armenian (Pisani) that they treated plain velars differently from the labiovelars in at least some circumstances, as well as the fact that Luwian apparently had distinct reflexes of all three series: **kʲ > z* (probably [ts]); **k > k*; **kʷ > ku* (possibly still [kʷ]) (Craig Melchert).

NOTE 1. Also, one of the most difficult problems which subsist in the interpretation of the satemization as a phonetic wave is that, even though in most cases the variation **kʲ/k* may be attributed either to a phonetic environment or to the analogy of alternating apophonic forms, there are some cases in which neither one nor the other may be applied. Compare for example **okʲtō(u)*, eight, which presents *k* before an occlusive in a form which shows no change (to suppose a syncope of an older **okʲitō*, as does Szemerényi, is an explanation *ad hoc*). Other examples in which the palatalization cannot be explained by the next phoneme nor by analogy are **swekru-*, husband’s mother, **akmōn*, stone, **peku*, cattle. Such (still) unexplained exceptions, however, are not sufficient to consider the existence of a third row of ‘later palatalized’ velars (Bernabé, Cheng & Wang), although there are still scholars who come back to the support of the three velar rows’ hypothesis (viz. Tischler 1990).

NOTE 2. Supporters of the palatovelars cite evidence from the Anatolian language Luwian, which supposedly attests a three-way velar distinction **kʲ > z* (probably [ts]); **k > k*; **kʷ > ku* (probably [kʷ]), defended by Melchert (1987). So, the strongest argument in favor of the

traditional three-way system is that the distinction supposedly derived from Luwian findings must be reconstructed for the parent language. However, the underlying evidence “hinges upon especially difficult or vague or otherwise dubious etymologies” (see Sihler 1995); and, even if those findings are supported by other evidence in the future, it is obvious that Luwian might also have been in contact with *satemization* trends of other (Late) PIE dialects, that it might have developed its own satemization trend, and that maybe the whole system was remade within the Anatolian branch.

6. A system of two gutturals, Velars and Labiovelars, is a linguistic anomaly, isolated in the PIE occlusive subsystem – there are no parallel oppositions b^w - b , p^w - p , t^w - t , d^w - d , etc. Only one feature, their pronunciation with an accompanying rounding of the lips, helps distinguish them from each other. Labiovelars turn velars before $-u$, and there are some neutralization positions which help identify labiovelars and velars; also, in some contexts (e.g. before $-i$, $-e$) velars tend to move forward its articulation and eventually palatalize. Both trends led eventually to Centum and Satem dialectalization.

II.2. PHONETIC RECONSTRUCTION

II.2.1. PROTO-INDO-EUROPEAN SOUND LAWS

A few sound-laws can be reconstructed, that may have been effective already in Late PIE dialects, by internal reconstruction.

- Sievers' Law (Edgerton's Law, Lindeman's option)
- Hirt's Law
- Grassman's Law
- Bartholomae's Law

A. SIEVERS' LAW

Sievers' Law in Indo-European linguistics accounts for the pronunciation of a consonant cluster with a glide before a vowel as it was affected by the phonetics of the preceding syllable. Specifically it refers to the alternation between $*ij$ and $*j$, and possibly $*uw$ and $*u$, in Indo-European languages. For instance, Proto-Indo-European $*kor$ - jo - s became Gothic *harjis* “army”, but PIE $*kerd^h$ - jo - s became Proto-Germanic $*herdijas$, Gothic *hairdeis* [hɛrdīs] “shepherd”. It differs from an ablaut in that the alternation is context-sensitive: PIE $*ij$ followed a heavy syllable (a syllable with a diphthong, a long

vowel, or ending in more than one consonant), but **j* would follow a light syllable (i.e. a short vowel followed by a single consonant). This was first noticed by Germanic philologist Eduard Sievers, and his aim was to account for certain phenomena in the Germanic languages. He originally only discussed **j* in medial position. He also noted, almost as an aside, that something similar seemed to be going on in the earliest Sanskrit texts (thus in the Rigveda *dāivya*- “heavenly” actually had three syllables in scansion (*dāivⁱya*-) but say *satya*- “true” was scanned as written). After him, scholars would find similar alternations in Greek and Latin, and alternation between **uw* and **u*, though the evidence is poor for all of these. Through time, evidence was announced regarding similar alternations of syllabicity in the nasal and liquid semivowels, though the evidence is extremely poor for these, despite the fact that such alternations in the non-glide semivowels would have left permanent, indeed irreversible, traces.

The most ambitious extension of Sievers’ Law was proposed by Franklin Edgerton in a pair of articles in the journal *Language* in 1934 and 1943. He argued that not only was the syllabicity of prevocalic semivowels by context applicable to all six Indo-European semivowels, it was applicable in all positions in the word. Thus a form like **djēus*, “sky” would have been pronounced thus only when it happened to follow a word ending with a short vowel. Everywhere else it would have had two syllables, **dijēus*.

The evidence for alternation presented by Edgerton was of two sorts. He cited several hundred passages from the oldest Indic text, the Rigveda, which he claimed should be rescanned to reveal hitherto unnoticed expressions of the syllable structure called for by his theory. But most forms show no such direct expressions; for them, Edgerton noted sharply skewed distributions that he interpreted as evidence for a lost alternation between syllabic and nonsyllabic semivowels. Thus say *śiras* “head” (from **śṛros*) has no monosyllabic partner **śras* (from **śros*), but Edgerton noted that it occurred 100% of the time in the environments where his theory called for the syllabification of the **r*. Appealing to the “formulaic” nature of oral poetry, especially in tricky and demanding literary forms like sacred Vedic versification, he reasoned that this was direct evidence for the previous existence of an alternant **śras*, on the assumption that when (for whatever reason) this **śras* and other forms like it came to be shunned, the typical collocations in which they would have (correctly) occurred inevitably became obsolete

pari passu with the loss of the form itself. And he was able to present a sizeable body of evidence in the form of these skewed distributions in both the 1934 and 1943 articles.

In 1965 Fredrik Otto Lindeman published an article proposing a significant modification of Edgerton's theory. Disregarding Edgerton's evidence (on the grounds that he was not prepared to judge the niceties of Rigvedic scansion) he took instead as the data to be analyzed the scansions in Grassmann's *Wörterbuch zum Rig-Veda*. From these he concluded that Edgerton had been right, but only up to a point: the alternations he postulated did indeed apply to all semivowels; but in word-initial position, the alternation was limited to forms like **djēus/dijēus* “sky”, as cited above—that is, words where the “short” form was monosyllabic.

B. HIRT'S LAW

Hirt's law, named after Hermann Hirt who postulated it originally in 1895, is a Balto-Slavic sound law which states in its modern form that the inherited Proto-Indo-European stress would retract to non-ablauting pretonic vowel or a syllabic sonorant if it was followed by a consonantal (non-syllabic) laryngeal that closed the preceding syllable.

Compare:

- PIE: **d̥h₁mós* “smoke” (compare Sanskrit *dhūmá* and Ancient Greek *thumós*) → Lithuanian *dū' mai*, Latvian *dūmi*, Croatian/Serbian *dīm*.
- PIE **gʷr̥iṵā* “neck; mane” (compare Sanskrit *grīvā*) → Latvian *ģva*, Croatian/Serbian *grīva*.
- PIE **p̥l̥nós* “full” (compare Sanskrit *pūrṇá*) → Lithuanian *pilnas*, Latvian *pīlns*, Serbian *pŭn*.

Hirt's law did not operate if the laryngeal preceded a vowel, or if the laryngeal followed the second component of a diphthong. Therefore, Hirt's law must be older than then the loss of laryngeals in prevocalic position (in glottalic theory formulation: to the merger of glottalic feature of PIE voiced stops who dissolved into laryngeal and buccal part with the reflexes of the original PIE laryngeals), because the stress was not retracted in e.g. PIH **tenh₂wós* (Ancient Greek *tanaós*, Sanskrit *tanū*) “thin” → Latvian *tiēvs*, and also older than the loss of syllabic sonorants in Balto-Slavic, as can be seen from the abovementioned reflexes of PIH **p̥l̥h₁nós*, and also in e.g. PIH **d̥l̥h₁gʰós* “long” (compare

Sanskrit *dīrghá*, Ancient Greek *dolikhós*) → Lithuanian *ilgas*, Latvian *ilgs*, Croatian/Serbian *dùg*.

It follows from the above that Hirt's law must have preceded Winter's law, but was necessarily posterior to Balto-Slavic oxytonesis (shift of stress from inner syllable to the end of the word in accent paradigms with end-stressed forms), because oxytonesis-originating accent was preserved in non-laryngeal declension paradigms; e.g. the retraction occurs in mobile PIH **eh₂*-stems so thus have dative plural of Slovene *goràm* and Chakavian *goràmi* (< PBSl. **-āmús*), locative plural of Slovene and Chakavian *goràh* (< PBSl. **-āsú*), but in thematic (o-stem) paradigm dative plural of Slovene *možêm* (< PBSl. **-mús*), locative plural of Slovene *možéh* and Chakavian *vlāsíh* (< PBSl. **-oysú*). The retraction of accent from the ending to the vowel immediately preceding the stem-ending laryngeal (as in PBSl. reflex of PIH **g^wrH-*) is obvious. There is also a strong evidence that the same was valid for Old Prussian (in East Baltic dative and locative plural accents were generalized in non-laryngeal inflections).

From the Proto-Indo-European perspective, the importance of Hirt's law lies in the strong correspondence it provides between the Balto-Slavic and Vedic/Ancient Greek accentuation (which more or less intactly reflects the original Late PIE state), and somewhat less importantly, provides a reliable criterion to distinguish the original sequence of PIH **eH* from lengthened grade **ē*, as it unambiguously points to the presence of a laryngeal in the stem.

C. GRASSMANN'S LAW

Grassmann's law, named after its discoverer Hermann Grassmann, is a dissimilatory phonological process in Ancient Greek and Sanskrit which states that if an aspirated consonant is followed by another aspirated consonant in the next syllable, the first one loses the aspiration. The descriptive (synchronic) version was described for Sanskrit by Panini.

Here are some examples in Greek of the effects of Grassmann's Law:

- [^hu-o:] θύω *'I kill an animal'*
- [e-tu-^he:] ἔτυθη *'it was killed'*
- [^hrik-s] θρίξ *'hair'*

- [trik^h-es] τριχῆς ‘*hairs*’
- [t^hap-sai] θάψαι ‘*to bury (aorist)*’
- [t^hapt-ein] θάπτειν ‘*to bury (present)*’
- [tap^h-os] τάφος ‘*a grave*’
- [tap^h-e] ταφή ‘*burial*’

In the reduplication which forms the perfect tense in both Greek and Sanskrit, if the initial consonant is aspirated, the prepended consonant is unaspirated by Grassmann’s Law. For instance [p^hu-o:] φύω ‘*I grow*’: [pe-p^hu:-ka] πεφυκα ‘*I have grown*’.

DIASPIRATE ROOTS

Cases like [t^hrik-s] ~ [trik^h-es] and [t^hap-sai] ~ [tap^h-ein] illustrates the phenomenon of *diaspirate roots*, for which two different analyses have been given.

In one account, the “underlying diaspirate” theory, the underlying roots are taken to be /t^hrik^h/ and /t^hap^h/. When an /s/ (or word edge, or various other sounds) immediately follows, then the second aspiration is lost, and the first aspirate therefore survives ([t^hrik-s], [t^hap-sai]). If a vowel follows the second aspirate, it survives unaltered, and therefore the first aspiration is lost by Grassmann’s Law ([trik^h-es], [tap^h-ein]).

A different analytical approach was taken by the ancient Indian grammarians. In their view, the roots are taken to be underlying /trik^h/ and /tap^h/. These roots persist unaltered in [trik^h-es] and [tap^h-ein]. But if an /s/ follows, it triggers an “*aspiration throwback*” (ATB), in which the aspiration migrates leftward, docking onto the initial consonant ([t^hrik-s], [t^hap-sai]).

Interestingly, in his initial formulation of the law Grassmann briefly referred to ATB to explain these seemingly aberrant forms. However, the consensus among contemporary historical linguists is that the former explanation (underlying representation) is the correct one.

In the later course of Sanskrit, (and under the influence of the grammarians) ATB was applied to original monoaspirates through an analogical process. Thus, from the verb root *gah* ‘*to plunge*’, the desiderative stem *jighak^ha-* is formed. This is by analogy with the forms *bubhutsati* (a desiderative form) and *bhut* (a nominal form, both from the root *budh* ‘*to be awake*’, originally PIE **b^hud^h-*).

D. BARTHOLOMAE'S LAW

Bartholomae's law is an early Indo-European sound law affecting the Indo-Iranian family, though thanks to the falling together of plain voiced and voiced aspirated stops in Iranian, its impact on the phonological history of that subgroup is unclear.

It states that in a cluster of two or more obstruents (*s* or a stop (plosive)), any one of which is a voiced aspirate anywhere in the sequence, the whole cluster becomes voiced and aspirated. Thus to the PIE root **b^heud^h* “*learn, become aware of*” the participle **b^hud^h-to-* “*enlightened*” loses the aspiration of the first stop (Grassmann's Law) and with the application of Bartholomae's Law and regular vowel changes gives Sanskrit *buddha-* “*enlightened*”.

A written form such as *-ddh-* (a literal rendition of the devanāgarī representation) presents problems of interpretation. The choice is between a long voiced stop with a specific release feature symbolized in transliteration by *-h-*, or else a long stop (or stop cluster) with a different phonational state, “*murmur*”, whereby the breathy release is an artifact of the phonational state. The latter interpretation is rather favored by such phenomena as the Rigvedic form *gdha* “*he swallowed*” which is morphologically a middle aorist (more exactly ‘*injunctive*’) to the root *ghas-* “*swallow*”, as follows: *ghs-t-a* > **gzdha* whence *gdha* by the regular loss of a sibilant between stops in Indic. While the idea of voicing affecting the whole cluster with the release feature conventionally called aspiration penetrating all the way to the end of the sequence is not entirely unthinkable, the alternative—the spread of a phonational state (but *murmur* rather than voice) through the whole sequence—involves one less step and therefore via Occam's Razor counts as the better interpretation.

Bartholomae's Law intersects with another Indic development, namely what looks like the deaspiration of aspirated stops in clusters with *s*: descriptively, Proto-Indo-European **leig^h-si* “*you lick*” becomes **leiksi*, whence Sanskrit *lekṣi*. However, Grassmann's Law, whereby an aspirated stop becomes non-aspirated before another aspirated stop (as in the example of *buddha-*, above), suggests something else. In late Vedic and later forms of Sanskrit, all forms behave as though aspiration was simply lost in clusters with *s*, so such forms to the root *dugh-* “*give milk*” (etymologically **dhugh-*) show the expected devoicing and deaspiration in, say, the desiderative formation *du-dhuḥṣ-ati* (with the

root-initial *dh-* intact, that is, undissimilated). But the earliest passages of the Rigveda show something different: desiderative *dudukṣati*, aor. *dukṣata* (for later *dhukṣata*) and so on. Thus it is apparent that what went into Grassmann's Law were forms like **dhugzhata*, *dhudhugzha-* and so on, with aspiration in the sibilant clusters intact. The deaspiration and devoicing of the sibilant clusters were later and entirely separate phenomena – and connected with yet another suite of specifically Indic sound laws, namely a 'rule conspiracy' to eliminate all voiced (and murmured) sibilants. Indeed, even the example 'swallowed' given above contradicts the usual interpretation of devoicing and deaspiration: by such a sequence, **ghs-to* would have given, first, **ksto* (if the process was already Indo-European) or **ksta* (if Indo-Iranian in date), whence Sanskrit **kta*, not *gdha*.

E. BRUGMANN'S LAW

Brugmann's law, named for Karl Brugmann, states that Proto-Indo-European **o* (the ablaut alternant of **e*) in non-final syllables became **ā* in open syllables (syllables ending in a single consonant followed by a vowel) in Indo-Iranian. Everywhere else the outcome was **a*, the same as the reflexes of PIE **e* and **a*. The rule seems not to apply to "non-apophonic **o*", that is, **o* that has no alternant, as in **poti-*, "master, lord" (thus Sanskrit *pati-*, not **pāti*, there being no such root as **pet-* "rule, dominate"). Similarly the form traditionally reconstructed as **owis*, "sheep" (Sanskrit *avi-*), which is a good candidate for re-reconstructing as PIH **h₃ewi-* with an o-coloring laryngeal rather than an ablauting o-grade.

The theory accounts for a number of otherwise very puzzling facts. Sanskrit has *pitāras*, *mātāras*, *bhrātāras* for "fathers, mothers, brothers" but *svasāras* for "sisters", a fact neatly explained by the traditional reconstruction of the stems as **-ter-* for "father, mother, brother" but **swesor-* for "sister" (cf. Latin *pater*, *māter*, *frāter* but *soror*; note, though, that in all four cases the Latin vowel in the final syllable was originally long). Similarly, the great majority of n-stem nouns in Indic have a long stem-vowel, such as *brāhmaṇas* "Brahmins", *śvānas* "dogs" from **kwones*, correlating with information from other Indo-European languages that these were actually on-stems. But there is one noun, *ukṣan-* "ox", which in the Rigveda shows forms like *ukṣāṇas*, "oxen". These were

later replaced by “regular” formations (*ukṣāṇas* and so on, some as early as the *Rigveda* itself), but the notion that this might be an **en*-stem is supported by the unique morphology of the Germanic forms, e.g. Old English *oxa* nom.singular “ox”, *exen* plural—the Old English plural stem (e.g., the nominative) continuing Proto-Germanic **uχsiniz* < **uχseniz*, with two layers of umlaut. As in Indic, this is the only certain Old English *n*-stem that points to **en*-vocalism rather than **on*-vocalism.

Perhaps the most startling confirmation comes from the inflection of the perfect tense, wherein a Sanskrit root like *sad-* “sit” has *sasada* for “I sat” and *sasāda* for “he, she, it sat”. It was tempting to see this as some kind of ‘therapeutic’ reaction to the falling-together of the endings **-a* “I” and **-e* “he/she/it” as *-a*, but it was troubling that the distinction was found exclusively in roots that ended with a single consonant. That is, *dadarśa* “saw” is both first and third person singular, even though a form like **dadārśa* is perfectly acceptable in terms of Sanskrit syllable structure. This mystery was solved when the ending of the perfect in the first person singular was reanalyzed as PIH **-h₂e*, that is, beginning with an *a*-coloring laryngeal: that is, at the time Brugmann’s Law was operative, a form of the type **se-sod-h₂e* in the first person did not have an open root syllable. A problem (minor) for this interpretation is that roots that pretty plainly must have ended in a consonant cluster including a laryngeal, such as *jan-* < **genh₁-* “beget”, and which therefore should have had a short vowel throughout (like *darś-* “see” < **dork-*), nevertheless show the same patterning as *sad-*: *jajana* 1sg., *jajāna* 3sg. Whether this is a catastrophic failure of the theory is a matter of taste, but after all, those who think the pattern seen in roots like *sad-* have a morphological, not a phonological, origin, have their own headaches, such as the total failure of this “morphological” development to include roots ending in two consonants. And such an argument would in any case cut the ground out from under the neat distributions seen in the kinship terms, the special behavior of “ox”, and so on.

Perhaps the most worrisome data are adverbs like Sanskrit *prati*, Greek *pros* (< **proti*) (meaning “motion from or to a place or location at a place”, depending on the case of the noun it governs) and some other forms, all of which appear to have ablauting vowels. They also all have a voiceless stop after the vowel, which may or may not be significant.

And for all its charms, Brugmann's Law has few supporters nowadays – even Brugmann himself eventually gave up on it, and Jerzy Kuryłowicz, the author of the brilliant insight into the *sasada/sasāda* matter, eventually abandoned his analysis in favor of an untenable appeal to the agency of marked vs unmarked morphological categories. Untenable because, for example, it's a commonplace of structural analysis that 3rd person singular forms are about as “unmarked” as a verb form can be, but in Indic it is the one that “gets” the long vowel, which by the rules of the game is the marked member of the long/short opposition.

F. WINTER'S LAW

Winter's law, named after Werner Winter who postulated it in 1978, is a sound law operating on Balto-Slavic short vowels **e*, **o*, **a*, **i* and **u*, according to which they lengthen in front of unaspirated voiced stops in closed syllable, and that syllable gains rising, acute accent. Compare:

- PIE **sed-* “to sit” (that also gave Latin *sedeō*, Sanskrit *sīdati*, Ancient Greek *hézomai* and English *sit*) → Proto-Balto-Slavic **sēd-tey* → Lith. *sėsti*, O.C.S. *sesti* (with regular Balto-Slavic **dt→st* change; O.C.S. and Common Slavic yat (ě) is a regular reflex of PIE/PBSl. long **ē*).
- PIE **ābl-* “apple” (that also gave English *apple*) → Proto-Balto-Slavic **ābl-* → standard Lithuanian *obuolys* (accusative *óbuolį*) and also dialectal forms of *óbuolas* and Samogitian *óbulas*, O.C.S. *ablŭko*, modern Croatian *jābuka*, Slovene *jábolko* etc.

Winter's law is important for several reasons. Most importantly, it indirectly shows the difference between the reflexes of PIE **b*, **d*, **g*, **g^w* in Balto-Slavic (in front of which Winter's law operates in closed syllable), and PIE **b^h*, **d^h*, **g^h*, **g^{wh}* (before which there is no effect of Winter's law). This shows that in relative chronology Winter's law operated before PIE aspirated stops **b^h*, **d^h*, **g^h*, merged with PIE plain voiced stops **b*, **d*, **g* in Balto-Slavic.

Secondary, Winter's law also indirectly shows the difference between the reflexes of PIE **a* and PIE **o* which otherwise merged to **a* in Balto-Slavic. When these vowels lengthen

in accordance with Winter's law, one can see that old **a* has lengthened into Balto-Slavic **ā* (which later gave Lithuanian *o*, Latvian *ā*, O.C.S. *a*), and old **o* has lengthened into Balto-Slavic **ō* (which later gave Lithuanian and Latvian *uo*, but still O.C.S. *a*). In later development that represented Common Slavic innovation, the reflexes of Balto-Slavic **ā* and **ō* were merged, as one can see that they both result in O.C.S. *a*. This also shows that Winter's law operated prior to the common Balto-Slavic change **o*→**a*.

The original formulation of Winter's law stated that the vowels regularly lengthened in front of PIE voiced stops in all environments. As much as there were numerous examples that supported this formulation, there were also many counterexamples, such as OCS *stogъ* "stack" < PIE **stógos*, O.C.S. *voda* "water" < PIE **wodór* (collective noun formed from PIE **wódr*). Adjustment of Winter's law, with the conclusion that it operates only on closed syllables, was proposed by Matasović in 1994 and which, unlike most of the other prior proposals, successfully explains away most counterexamples, although it's still not generally accepted. Matasović's revision of Winter's law has been used in the *Lexikon der indogermanischen Verben*. Other variations of blocking mechanism for Winter's law have been proposed by Kortlandt, Shintani, Rasmussen, Dybo and Holst but have not gained wide acceptance. Today Winter's law is taken for granted by all specialists in Balto-Slavic historical linguistics, though the exact details of the restrictions of law remain in dispute.

II.2.2. CONSONANTS

NOTES: ¹ After vowels. ² Before a plosive (p, t, k). ³ Before an unstressed vowel (Verner's Law). ⁴ After a (Proto-Germanic) fricative (s, f). ⁵ Before a (PIE) front vowel (i, e). ⁶ Before or after a (PIE) u. ⁷ Before or after a (PIE) o, u. ⁸ Between vowels. ⁹ Before a resonant. ¹⁰ Before secondary (post-PIE) front-vowels. ¹¹ After r, u, k, i (RUKI). ¹² Before a stressed vowel. ¹³ At the end of a word. ¹⁴ After u, r or before r, l. ¹⁵ After n.

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PIE	Skr.	Av.	OCS	Lith.	Arm.	Toch.	Hitt.	Gk.	Lat.	O.Ir	Gmc.
*p	p [p]	p [p]	p [p]	p [p]	h [h]; w [w] ¹	p [p]	p [p]	p [p]	p [p]	Ø; ch [x] ²	*f; *β ³ ; *p ⁴
*t	t [t]	t [t]	t [t]	t [t]	t' [tʰ]	t [t]; c [c] ⁵	t; z ⁵	t [t]	t [t]	t [t]; th [θ] ₈	*θ; *ð ³ ; *t ⁴
*R	ś [ɕ]	s [s]	s [s]	š [ʃ]	s [s]	k; ś [ɕ] ⁹	k [k]	k [k]	k [k]	c [k]; ch [x] ₈	*x; *γ ³ ; k ⁴
*k	k [k]; c [c]	k [k]; c [tʃ] ⁵	k [k]; č [tʃ] ⁵ ; c [ts] ¹⁰	k [k]	k' [kʰ]						
*k^w	₅						ku [k ^w]	p; t ⁵ ; k ₆	qu [k ^w]; c [k] ⁷	c [k]; ch [x] ₈	*x ^w ; *γ ^w ; *w ³ ; k ^w ₄
*b	b [b]	b [b]	b [b]	b [b]	p [p]	p [p]	p [p]	b [b]	b [b]	b [b]	*p
*d	d [d]	d [d]	d [d]	d [d]	t [t]	ts [ts]; ś [ɕ] ⁵	t [t]	d [d]	d [d]	d [d]; dh [ð] ₈	*t
*ǵ	j [j]	z [z]	z [z]	ž [ʒ]	c [ts]	k [k]; ś [ɕ] ⁹	k [k]	g [g]	g [g]	g [g]; gh [ɣ] ₈	*k
*g	g [g]; j [j] ⁵	g [g]; j [dʒ] ⁵	g [g]; ž [ʒ] ⁵ ; dz [dz] ¹⁰	g [g]	k [k]						
*g^w							ku [k ^w]	b [b]; d [d] ⁵ ; g [g] ⁶	u [w]; gu [g ^w] ₁₅	b [b]; m, bh [w] ⁸	*k ^w
*bʰ	bh [bʰ]	b [b]	b [b]	b [b]	b [b]; w [w] ⁸	p [p]	p [p]	ph [pʰ]	f [f]; b ⁸	b [b]; m, bh [m, w] ⁸	*β
*dʰ	dh [dʰ]	d [d]	d [d]	d [d]	d [d]	t [t]; c [c] ⁵	t [t]	th [tʰ]	f [f]; d ⁸ ; b [b] ¹⁴	d [d]; dh [ð] ₈	*ð

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*ǵʰ	h [h]	z [z]	z [z]	ž [ʒ]	j [dʒ]; z [z] 8	k [k]; ś [ɕ] ⁵	k [k]	ch [kʰ]	h [h]; h [h]/ g [g] ⁹	g [g]; gh [ɣ] 5	*ɣ
*ǵʰ	gh [gʰ]; h [h] 5	g [g]; ǵ [dʒ] 5	g [g]; ž [ʒ] ⁵ ; dz [dʒ] ¹⁰	g [g]	g [g]; ǵ [dʒ] 5						
*ǵʷʰ							ku [kʷ]	ph [pʰ]; th [tʰ] ⁵ ; ch [kʰ] ⁶	f [f]; g [g] / u [w] ⁸ ; gu [gʷ] 15	g [g]	*ɣʷ
*s	s [s]; ś [ʃ] 11	h [h, x]; s [s] ² ; š [ʃ] 11	s [s]; x [x] ¹¹	s [s]; š [ʃ] 11	h [h]; s [s] 2; [-] 8	s [s]; ś [ʃ]	š [s]	h [h]; s [s] ² ; [-] 8	s [s]; r [r] ⁸	s [s]	*s; *z ³
*m	m [m]	m [m]	m [m]; 𐍎 [ʃ] ¹³	m [m]; n [n] 13	m [m]; n [n] 13	m [m]; n [n] 13	m [m]; n [n] 13	m [m]; n [n] ¹³	m [m]	b [b]; m, bh [m, w] 8; n [n] ¹³	*m; Ø ¹³
*n	n [n]	n [n]	n [n]	n [n]	n [n]	n [n]; ñ [ɲ]	n [n]	n [n]	n [n]	n [n]	*n
*l	r [r] (dial. l [l])	r [r]	l [l]	l [l]	l [l], t [t] > ɣ]	l [l]	l [l]	l [l]	l [l]	l [l]	*l
*r	r [r]	r [r]	r [r]	r [r]	r [ɹ]	r [r]	r [r]	r [r]	r [r]	r [r]	*r
*ǵ	y [j]	y [j]	j [j]	j [j]	Ø	y [j]	y [j]	z [ʔzd/dz > z] / h [h]; Ø ⁸	i [j]; Ø ⁸	Ø	*j
*u	v [v]	v [w]	v [v]	v [v]	g [g] / w [w]	w [w]	w [w]	w > h / Ø [w > h / -]	u [w > v]	f [f]; Ø / w [w] ⁸	*w

II.1.3. VOWELS AND SYLLABIC CONSONANTS

PIE	PIH	Skr.	Av.	OCS	Lith.	Arm.	Toch.	Hitt.	Gk.	Lat.	O.Ir	Gmc
*e	*e	a	a	e	e	e	ä	e, i	e	e	e	i; ai [ɛ] ²
	*h ₁ e											
*a	(*a ³)			o	a	a	ā	ha, a	a	a	a	a
	*h ₂ e											
*o	*h ₃ e					o, a	a, e	a	o	o	o	
	*o	a, ā ₄	a, ā ₄									
*ə	*h ₁	i	i, Ø	Ø	Ø	a, Ø	ā	a	e	a	a	a, Ø
	*h ₂							h	a			
	*h ₃								o			
*-	*h ₁	Ø	Ø			e (a?)	Ø	a	e (o)	Ø	Ø	Ø
	*h ₂					a		ha	a			
	*h ₃					a		a, ha	o			
*ē	*ē	ā	ā	ě	é	i	a/e?; ā? ⁸	e, i	ē	ē	ī	ē
	*eh ₁											
*ā	(*ā ³)			a	o	a	a (A); o (B)	a, ah	ā > ē	ā	ā	ā
	*eh ₂											
*ō	*ō				uo	u	a/ā?; ū? ⁸	a	ō	ō	ā; ū ⁸	
	*eh ₃											
*i	*i	i	i	ь	i	i	ä	i	i	i	i	i
*ī	*ih ₁	ī	ī	i	y [i:]		i		ī	ī	ī	ei [i:]

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	*ih ₂					i or (i)a? ⁷	yā		ī or ʔā? ⁷			
	*ih ₃								ī or ʔō? ⁷			
*ei	*ei	ē	ōi, aē ⁴		ei, ie ⁵	i	e	ei	ī	īa, ē ⁶		
	*h ₁ e i											
*oi	*oi			ě	ai, ie ⁵	e		oi	ū	oe	ai	
	*h ₃ e i											
*ai	(*ai ³)							ay	ai	ae		ae
	*h ₂ e i											
*ēi	*ēi	āi; ā ⁸	āi; ā(i) ⁸	i					āi > ēi	ī?		ai
*ōi	*ōi (*oe i)			y; u ⁸	ai; ui ⁸			ai	āi > ēi	ō	u ⁸	
*āi	*eh ₂ ei			ě					āi > ēi	ae		ai
*u	*u	u	u	ъ	u	u	ä	u	u	u	u; o ¹	u; au [ɔ] ²
*ū	*uh ₁	ū	ū	y	ū		u		ū	ū	ū	ū
	*uh ₂					u or (w)a? ⁷	wā		ū or (w)ā? ⁷			
	*uh ₃								ū or (w)ō? ⁷			
*eu	*eu	ō	ēu, ao ⁴	ju	iau	oy	u	u	eu	ū	ūa; ō ⁹	iu
	*h ₁ e u											

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*ou	*ou			u	au		ou; o, au		ou			au
	*h₃e u											
	*au (*au ³)					aw			au	au		
	*h₂e u											
*ēu	*ēu	āu	āu	u	iau					ū?		au
*ōu	*ōu								ō			
*ṛ	*ṛ	a	a	ṛ	iṛ; uṛ ¹⁴	am	ām	am	a	em	em am	um
*ṝ	*mH	ā	ā		iṛ; uṛ ¹⁴	ama	mā		mē, mā, mō	mā	mā	
*ṛ m		am	am	ьm/ъ m	iṛ; uṛ ¹⁴	am			am	em	am	
*ṛ	*ṛ	a	a	ṛ	iṛ; uṛ ¹⁴	an	ān	an	a	en	en an	un
*ṝ	*nH	ā	ā		iṛ; uṛ ¹⁴	ana	nā		nē, nā, nō	nā	nā	
*ṛ n		an	an	ьn/ъ n	iṛ; uṛ ¹⁴	an			an	en	an	
*ṛ	*ṛ	ṛ	erē	ь/ъ	iṛ; uṛ ¹⁴	al	āl	al	la	ol	li	ul
*ṝ	*IH	iṛ; ur ¹³	arē		iṛ; uṛ ¹⁴	ala	lā		lē, lā, lō	lā	lā	
*ṛI		ir; ur ¹³	ar	ьI/ъI	iṛ; uṛ ¹⁴	al, la			al	el	al	
*ṛ	*ṛ	ṛ	erē	ь/ъ	iṛ; uṛ ¹⁴	ar	ār	ar	ra	or	ri	aur

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*f	*rH	īr; ūr ¹³	arə		īr; ūr ¹⁴	ara	rā		rē, rā, rō	rā	rā	
*r		īr; ur ¹³	ar	ьr/ъr	īr; ur ¹⁴	ar			ar	ar	ar	

NOTES: ¹ Before *wa*. ² Before *r*, *h*. ³ The existence of PIE non-allophonic *a* is disputed. ⁴ In open syllables (Brugmann's law). ⁵ Under stress. ⁶ Before palatal consonants. ⁷ The so-called breaking is disputed (typical examples are *proti-h₃k^wo- > Ved. *prātīkam* ~ Gk. πρόσωπον; *g^wih₃uō- > Ved. *jīvā-* ~ Arm. *keank'*, Gk. ζώος; *duh₂ro- > Ved. *dūrā-* ~ Arm. *erkar*, Gk. δηρός) ⁸ In a final syllable. ⁹ Before velars and unstressed ¹⁰ Before *ā* in the following syllable. ¹¹ Before *i* in the following syllable. ¹² In a closed syllable. ¹³ In the neighbourhood of labials. ¹⁴ In the neighbourhood of labiovelars.

II.3. THE LARYNGEAL THEORY

1. The laryngeal theory is a generally accepted theory of historical linguistics which proposes the existence of a set of three (or up to nine) consonant sounds that appear in most current reconstructions of the Proto-Indo-European language, which usually target Middle PIE or Indo-Hittite (PIH), i.e. the common IE language that includes Anatolian. These sounds have since disappeared in all existing IE languages, but some laryngeals are believed to have existed in the Anatolian languages.

NOTE. In this Modern Indo-European grammar, such uncertain sounds are replaced by the vowels they yielded in Late PIE dialects (an *-a* frequently substitutes the traditional *schwa indogermanicum*), cf. MIE **patér** for PIH *ph₂tér, MIE **ōktō(u)**, *eight*, for PIH *h₃ekteh₃, etc. Again, for a MIE based on the northwestern dialects, such stricter reconstruction would give probably a simpler language in terms of phonetic irregularities (*ablaut* or *apophony*), but also a language phonologically too different from Latin, Greek, Germanic and Balto-Slavic dialects. Nevertheless, reconstructions with laryngeals are often shown in this grammar as 'etymological sources', so to speak, as Old English forms are shown when explaining a Modern English word in modern dictionaries. The rest of this chapter offers a detailed description of the effects of laryngeals in IE phonology and morphology.

2. The evidence for them is mostly indirect, but serves as an explanation for differences between vowel sounds across Indo-European languages. For example, Sanskrit and Ancient Greek, two descendents of PIE, exhibit many similar words that have differing vowel sounds. Assume that the Greek word contains the vowel *e* and the corresponding

Sanskrit word contains *i* instead. The laryngeal theory postulates these words originally had the same vowels, but a neighboring consonant which had since disappeared had altered the vowels. If one would label the hypothesized consonant as **h_l*, then the original PIH word may have contained something like **eh_l* or **ih_l*, or perhaps a completely different sound such as **ah_l*. The original phonetic values of the laryngeal sounds remain controversial (v.i.)

3. The beginnings of the theory were proposed by Ferdinand de Saussure in 1879, in an article chiefly devoted to something else altogether (demonstrating that **a* and **o* were separate phonemes in PIE). Saussure's observations, however, did not achieve any general currency until after Hittite was discovered and deciphered in the early 20th century. Hittite had a sound or sounds written with symbols from the Akkadian syllabary conventionally transcribed as *ḫ*, as in *te-iḫ-ḫi*, "*I put, am putting*". Various more or less obviously unsatisfactory proposals were made to connect these (or this) to the PIE consonant system as then reconstructed. It remained for Jerzy Kuryłowicz (*Études indoeuropéennes I*, 1935) to propose that these sounds lined up with Saussure's conjectures. Since then, the laryngeal theory (in one or another form) has been accepted by most Indo-Europeanists.

4. The late discovery of these sounds by Indo-Europeanists is largely due to the fact that Hittite and the other Anatolian languages are the only Indo-European languages where at least some of them are attested directly and consistently as consonantal sounds. Otherwise, their presence is to be seen mostly through the effects they have on neighboring sounds, and on patterns of alternation that they participate in; when a laryngeal is attested directly, it is usually as a vowel (as in the Greek examples below). Most Indo-Europeanists accept at least some version of laryngeal theory because their existence simplifies some otherwise hard-to-explain sound changes and patterns of alternation that appear in the Indo-European languages, and solves some minor mysteries, such as why verb roots containing only a consonant and a vowel have only long vowels e.g. PIE **dō-* "give"; re-reconstructing PIH **deh₃* instead not only accounts for the patterns of alternation more economically than before, but brings the root into line with the basic consonant - vowel - consonant Indo-European type.

5. There are many variations of the Laryngeal theory. Some scholars, such as Oswald Szemerényi, reconstruct just one. Some follow Jaan Puhvel's reconstruction of eight or more (in his contribution to *Evidence for Laryngeals*, ed. Werner Winter). Most scholars work with a basic three:

- **h₁*, the “*neutral*” laryngeal
- **h₂*, the “*a-colouring*” laryngeal
- **h₃*, the “*o-colouring*” laryngeal

Many scholars, however, either insist on or allow for a fourth consonant, **h₄*, which differs from **h₂* only in not being reflected as Anatolian *ḫ*. Accordingly, except when discussing Hittite evidence, the theoretical existence of an **h₄* contributes little. Another such theory, but much less generally accepted, is Winfred P. Lehmann's view that **h₁* was actually two separate sounds, due to inconsistent reflexes in Hittite. (He assumed that one was a glottal stop and the other a glottal fricative.)

Some direct evidence for laryngeal consonants from Anatolian:

PIE **a* is a rarish sound, and in an uncommonly large number of good etymologies it is word-initial. Thus PIE (traditional) **antí*, *in front of and facing* > Greek *antí* “*against*”; Latin *ante* “*in front of, before*”; (Sanskrit *ánti* “*near; in the presence of*”). But in Hittite there is a noun *ḫants* “*front, face*”, with various derivatives (*ḫantezzi* “*first*”, and so on, pointing to a PIH root-noun **h₂ent-* “*face*” (of which **h₂enti* would be the locative singular).

NOTE. It does not necessarily follow that all reconstructed PIE forms with initial **a* should automatically be rewritten as PIH **h₂e*.

Similarly, the traditional PIE reconstruction for ‘*sheep*’ is **owí-*, whence Skt *ávi-*, Latin *ovis*, Greek *óis*. But now Luvian has *ḫawí-*, indicating instead a reconstruction **h₃ewí-*.

But if laryngeals as consonants were first spotted in Hittite only in 1935, what was the basis for Saussure's conjectures some 55 years earlier? They sprang from a reanalysis of how the patterns of vowel alternation in Proto-Indo-European roots of different structure aligned with one another.

6. A feature of Proto-Indo-European morpheme structure was a system of vowel alternations christened ablaut (‘*alternate sound*’) by early German scholars and still

generally known by that term, except in Romance languages, where the term *apophony* is preferred. Several different such patterns have been discerned, but the commonest one, by a wide margin, is e/o/zero alternation found in a majority of roots, in many verb and noun stems, and even in some affixes (the genitive singular ending, for example, is attested as *-es*, *-os*, and *-s*). The different states are called ablaut grades; *e-grade* or “*full grades*”, *o-grade* and “*zero-grade*”.

Thus the root **sed-*, “*to sit (down)*” (roots are traditionally cited in the *e-grade*, if they have one), has three different shapes: **sed-*, **sod-*, and **sd-*. This kind of patterning is found throughout the PIE root inventory and is transparent:

- **sed-*: in Latin *sedeō* “am sitting”, Old English *sittan* “to sit” < **set-ja-* (with umlaut) < **sed-*; Greek *hédra* “seat, chair” < **sed-*.

- **sod-*: in Latin *solium* “*throne*” (Latin *l* sporadically replaces *d* between vowels, said by Roman grammarians to be a Sabine trait) = Old Irish *suide*ⁿ /suð’e/ “a sitting” (all details regular from PIE **sod-jo-m*); Gothic *satjan* = Old English *settan* “to set” (causative) < **sat-ja-* (umlaut again) < PIE **sod-eje-*. PIE **se-sod-e* “*sat*” (perfect) > Sanskrit *sa-sād-a* per Brugmann’s law.

- **sd-*: in compounds, as **ni-* “down” + **sd-* = **nisdos* “*nest*”: English *nest* < Proto-Germanic **nistaz*, Latin *nīdus* < **nizdos* (all regular developments). The 3 pl. (third person plural) of the perfect would have been **se-sd-r̥* whence Indo-Iranian **sazdr̥*, which gives (by regular developments) Sanskrit *sedur* /*sēdur*/.

Now, in addition to the commonplace roots of consonant + vowel + consonant structure there are also well-attested roots like **dʰē-* “*put, place*”: these end in a vowel, which is always long in the categories where roots like **sed-* have full grades; and in those forms where zero grade would be expected, before an affix beginning with a consonant, we find a short vowel, reconstructed as **ə*, or *schwa* (more formally, *schwa primum indogermanicum*). The cross-language correspondences of this vowel are different from the other five short vowels.

NOTE. Before an affix beginning with a vowel, there is no trace of a vowel in the root, as shown below.

Whatever caused a short vowel to disappear entirely in roots like **sed-*/**sod-*/**sd-*, it was a reasonable inference that a long vowel under the same conditions would not quite

disappear, but would leave a sort of residue. This residue is reflected as *i* in Indic while dropping in Iranian; it gives variously *e*, *a*, *o* in Greek; it mostly falls together with the reflexes of PIE **a* in the other languages (always bearing in mind that short vowels in non-initial syllables undergo various adventures in Italic, Celtic, and Germanic):

- **dō-* “give”: in Latin *dōnum* “gift” = Old Irish *dán* /dān/ and Sanskrit *dāna-* (*â* = *ā* with tonic accent); Greek *dí-dō-mi* (reduplicated present) “I give” = Sanskrit *dádāmi*. But in the participles, Greek *dotós* “given” = Sanskrit *ditá-*, Latin *datus* all < **dā-tó-*.

- **stā-* “stand”: in Greek *hístēmi* (reduplicated present, regular from **si-stā-*), Sanskrit *a-sthā-t* aorist “stood”, Latin *testāmentum* “testimony” < **ter-stā-* < **tri-stā-* (“third party” or the like). But Sanskrit *sthítá-* “stood”, Greek *stasís* “a standing”, Latin supine infinitive *statum* “to stand”.

Conventional wisdom lined up roots of the **sed-* and **dō-* types as follows:

Full Grades	Weak Grades	
<i>sed-, sod-</i>	<i>sd-</i>	“sit”
<i>dō-</i>	<i>də-, d-</i>	“give”

But there are other patterns of “normal” roots, such as those ending with one of the six resonants (**j w r l m n*), a class of sounds whose peculiarity in Proto-Indo-European is that they are both syllabic (vowels, in effect) and consonants, depending on what sounds are adjacent:

Root **b^her-/b^hor-/b^hr̥- ~ b^hr-* “carry”

- **b^her-*: in Latin *ferō* = Greek *phérō*, Avestan *barā*, Old Irish *biur*, Old English *bera* all “I carry”; Latin *ferculum* “bier, litter” < **b^her-tlo-* “implement for carrying”.

- **b^hor-*: in Gothic *barn* “child” (= English dial. *bairn*), Greek *phoréō* “I wear [clothes]” (frequentative formation, “carry around”); Sanskrit *bhâra-* “burden” (**b^hor-o-* via Brugmann’s law).

- **b^hr̥-* before consonants: Sanskrit *bhr̥-tí-* “a carrying”; Gothic *gabaurþs* /gaborθs/, Old English *gebyrd* /yebürd/, Old High German *geburt* all “birth” < **gaburdi-* < **b^hr̥-tí-*
- **b^hr-* before vowels: Ved *bibhrati* 3pl. “they carry” < **b^hi-b^hr-ṇti*; Greek *diphros* “chariot footboard big enough for two men” < **dwi-b^hr-o-*.

Saussure’s insight was to align the long-vowel roots like **dō-*, **stā-* with roots like **b^her-*, rather than with roots of the **sed-* sort. That is, treating “schwa” not as a residue of a long vowel but, like the **r* of **b^her-/b^hor-/b^hr̥-*, an element that was present in the root in all grades, but which in full grade forms coalesced with an ordinary *e/o* root vowel to make a long vowel, with ‘coloring’ (changed phonetics) of the *e*-grade into the bargain; the mystery element was seen by itself only in zero grade forms:

Full Grades	Zero Grade	
<i>b^her-, b^hor-</i>	<i>b^hr̥- / b^hr-</i>	“carry”
<i>deX, doX-</i>	<i>dX̣- / dX-</i>	“give”

* *X̣* = syllabic form of the mystery element

Saussure treated only two of these elements, corresponding to our **h₂* and **h₃*. Later it was noticed that the explanatory power of the theory, as well as its elegance, were enhanced if a third element were added, our **h_l*, which has the same lengthening and syllabifying properties as the other two but has no effect on the color of adjacent vowels. Saussure offered no suggestion as to the phonetics of these elements; his term for them, “*coefficientants sonantiques*”, was not however a fudge, but merely the term in general use for glides, nasals, and liquids (i.e., the PIE resonants) as in roots like **b^her-*.

As mentioned above, in forms like **dwi-b^hr-o-* (etymon of Greek *diphros*, above), the new “*coefficientants sonantiques*” (unlike the six resonants) have no reflexes at all in any daughter language. Thus the compound PIH **m̥ns-d^heh-* “to ‘fix thought’, be devout, become rapt” forms a noun **m̥ns-d^hh-o-* seen in Proto-Indo-Iranian **mazdha-* whence Sanskrit *medhá-* /*mēdha*/ “sacrificial rite, holiness” (regular development as in *sedur* < **sazdur*, above), Avestan *mazda-* “name (originally an epithet) of the greatest deity”.

There is another kind of unproblematic root, in which obstruents flank a resonant. In the zero grade, unlike the case with roots of the **b^her-* type, the resonant is therefore always syllabic (being always between two consonants). An example would be **b^hend^h-* “*tie, bind*”:

- **b^hend^h-*: in Germanic forms like Old English *bindan* “to tie, bind”, Gothic *bindan*; Lithuanian *beñdras* “chum”, Greek *peĩsma* “rope, cable” /pēsma/ < **phenth-sma* < **b^hend^h-sm̥*.
- **b^hond^h-*: in Sanskrit *bandhá-* “bond, fastening” (**b^hond^h-o-*; Grassmann’s law) = Old Icelandic *bant*, OE *bænd*; Old English *bænd*, Gothic *band* “he tied” < **(b^he)b^hond^h-e*.
- **b^hṇd^h-*: in Sanskrit *baddhá-* < **b^hṇd^h-tó-* (Bartholomae’s law), Old English *gebunden*, Gothic *bundan*; German *Bund* “league”. (English *bind* and *bound* show the effects of secondary (Middle English) vowel lengthening; the original length is preserved in *bundle*.)

This is all straightforward and such roots fit directly into the overall patterns. Less so are certain roots that seem sometimes to go like the **b^her-* type, and sometimes to be unlike anything else, with (for example) *long* syllabics in the *zero* grades while at times pointing to a two-vowel root structure. These roots are variously called “*heavy bases*”, “*dis(s)yllabic roots*”, and “*seṭ roots*” (the last being a term from *Pāṇini’s grammar*. It will be explained below).

For example, the root “be born, arise” is given in the usual etymological dictionaries as follows:

A. PIE **gen-*, **gon-*, **gṇn-*

B. PIE **genə-*, **gonə-*, **gṇ̥-* (where *ṇ̥* = a long syllabic *ṇ*)

The (A) forms occur when the root is followed by an affix beginning with a vowel; the (B) forms when the affix begins with a consonant. As mentioned, the full-grade (A) forms look just like the **b^her-* type, but the zero grades always and only have reflexes of syllabic resonants, just like the **b^hend^h-* type; and unlike any other type, there is a second root vowel (always and only **ə*) following the second consonant:

**gen(ə)*-

•PIE **genos*- neut *s*-stem “*race, clan*” > Greek (Homeric) *génos*, -*eos*, Sanskrit *jānas*-, Avestan *zanō*, Latin *genus*, -*eris*.

•Greek *gené-tēs* “*begetter, father*”; *géné-sis* < **genə-ti*- “*origin*”; Sanskrit *jāni-man*- “*birth, lineage*”, *jāni-tar*- “*progenitor, father*”, Latin *genitus* “*begotten*” < *genatos*.

**gon(e)*-

•Sanskrit *janayati* “*beget*” = Old English *cennan* /*kennan*/ < **gon-eje*- (causative); Sanskrit *jāna*- “*race*” (*o*-grade *o*-stem) = Greek *gónos*, -*ou* “*offspring*”.

•Sanskrit *jajāna* 3sg. “*was born*” < **ge-gon-e*.

gñn*-/gñ̄*-

•Gothic *kuni* “*clan, family*” = OE *cynn* /*künn*/, English *kin*; Rigvedic *jajanúr* 3pl.perfect < **ge-gñn*- (a relic; the regular Sanskrit form in paradigms like this is *jajñur*, a remodeling).

•Sanskrit *jātā*- “*born*” = Latin *nātus* (Old Latin *gnātus*, and cf. forms like *cognātus* “*related by birth*”, Greek *kasí-gnētos* “*brother*”); Greek *gnésios* “*belonging to the race*”. (The *ē* in these Greek forms can be shown to be original, not Attic-Ionic developments from Proto-Greek **ā*.)

NOTE. The Pāṇinian term “*seṭ*” (that is, *sa-i-ṭ*) is literally “*with an /i/*”. This refers to the fact that roots so designated, like *jan*- “*be born*”, have an /i/ between the root and the suffix, as we’ve seen in Sanskrit *jānitar*-, *jāniman*-, *janitva* (a gerund). Cf. such formations built to “*aniṭ*” (“without an /i/”) roots, such as *han*- “*slay*”: *hāntar*- “*slayer*”, *hanman*- “*a slaying*”, *hantva* (gerund). In Pāṇini’s analysis, this /i/ is a linking vowel, not properly a part of either the root or the suffix. It is simply that some roots are in effect in the list consisting of the roots that (as we would put it) ‘*take an -i-*’.

The startling reflexes of these roots in zero grade before a consonant (in this case, Sanskrit *ā*, Greek *nē*, Latin *nā*, Lithuanian *in*) is explained by the lengthening of the (originally perfectly ordinary) syllabic resonant before the lost laryngeal, while the same laryngeal protects the syllabic status of the preceding resonant even before an affix

beginning with a vowel: the archaic Vedic form *jajanur* cited above is structurally quite the same (**ge-gnh₁-i*) as a form like **da-dṛś-ur* “they saw” < **de-dṛk-ṛ*.

Incidentally, redesigning the root as **genh-* has another consequence. Several of the Sanskrit forms cited above come from what look like *o*-grade root vowels in open syllables, but fail to lengthen to *-ā-* per Brugmann’s law. All becomes clear when it is understood that in such forms as **gonh-* before a vowel, the **o* is not in fact in an open syllable. And in turn that means that a form like O.Ind. *jajāna* “was born”, which apparently *does* show the action of Brugmann’s law, is actually a false witness: in the Sanskrit perfect tense, the whole class of *seṭ* roots, en masse, acquired the shape of the *aniṭ* 3 sing. forms.

There are also roots ending in a stop followed by a laryngeal, as **pleth₂-*/**plth₂-* “spread, flatten”, from which Sanskrit *prthú-* “broad” masc. (= Avestan *pərəθu-*), *prthivī-* fem., Greek *platús* (zero grade); Skt. *prathimán-* “wideness” (full grade), Greek *platamón* “flat stone”. The laryngeal explains (a) the change of **t* to **th* in Proto-Indo-Iranian, (b) the correspondence between Greek *-a-*, Sanskrit *-i-* and no vowel in Avestan (Avestan *pərəθwī* “broad” fem. in two syllables vs Sanskrit *prthivī-* in three).

Caution has to be used in interpreting data from Indic in particular. Sanskrit remained in use as a poetic, scientific, and classical language for many centuries, and the multitude of inherited patterns of alternation of obscure motivation (such as the division into *seṭ* and *aniṭ* roots) provided models for coining new forms on the “wrong” patterns. There are many forms like *tṛṣita-* “thirsty” and *tániman-* “slenderness”, that is, *seṭ* formations to to unequivocally *aniṭ* roots; and conversely *aniṭ* forms like *píparti* “fills”, *prta-* “filled”, to securely *seṭ* roots (cf. the ‘real’ past participle, *pūrṇá-*). Sanskrit preserves the effects of laryngeal phonology with wonderful clarity, but looks upon the historical linguist with a threatening eye: for even in Vedic Sanskrit, the evidence has to be weighed carefully with due concern for the antiquity of the forms and the overall texture of the data.

Stray laryngeals can be found in isolated or seemingly isolated forms; here the three-way Greek reflexes of syllabic **h₁*, **h₂*, **h₃* are particularly helpful, as seen below.

- **h₁* in Greek *ánemos* “wind” (cf. Latin *animus* “breath, spirit; anger”, Vedic *aniti* “breathes”) < **anə-* “breathe; blow” (now **h₂enh₁-*). Perhaps also Greek

híeros “mighty, super-human; divine; holy”, cf. Sanskrit *īśirá-* “vigorous, energetic”.

- **h*₂ in Greek *patér* “father” = Sanskrit *pitár-*, Old English *fæder*, Gothic *fadar*, Latin *pater*. Also **megh*₂ “big” neut. > Greek *méga*, Sanskrit *máhi*.

- **h*₃ in Greek *áotron* “plow” = Welsh *aradr*, Old Norse *arðr*, Lithuanian *árklas*.

The Greek forms *ánemos* and *áotron* are particularly valuable because the verb roots in question are extinct in Greek as verbs. This means that there is no possibility of some sort of analogical interference, as for example happened in the case of Latin *arātrum* “plow”, whose shape has been distorted by the verb *arāre* “to plow” (the exact cognate to the Greek form would have been **aretrum*). It used to be standard to explain the root vowels of Greek *thetós*, *statós*, *dotós* “put, stood, given” as analogical. Most scholars nowadays probably take them as original, but in the case of “wind” and “plow”, the argument can’t even come up.

Regarding Greek *híeros*, the pseudo-participle affix *-*ro-* is added directly to the verb root, so **ish*₁-*ro-* > **isero-* > **ihero-* > *híeros* (with regular throwback of the aspiration to the beginning of the word), and Sanskrit *īśirá-*. There seems to be no question of the existence of a root **ejsh-* “vigorous move/cause to move”. If the thing began with a laryngeal, and most scholars would agree that it did, it would have to be **h*₁-, specifically; and that’s a problem. A root of the shape **h*₁*ejsh*₁- is not possible. Indo-European had no roots of the type **mem-*, **tet-*, **d^hred^h-*, i.e., with two copies of the same consonant. But Greek attests an earlier (and rather more widely-attested) form of the same meaning, *híaros*. If we reconstruct **h*₁*ejsh*₂-, all of our problems are solved in one stroke. The explanation for the *híeros/híaros* business has long been discussed, without much result; laryngeal theory now provides the opportunity for an explanation which did not exist before, namely metathesis of the two laryngeals. It’s still only a guess, but it’s a much simpler and more elegant guess than the guesses available before.

The syllabic **h*₂ in PIH **ph*₂*ter-* “father” is not really isolated. The evidence is clear that the kinship affix seen in “mother, father” etc. was actually *-*h*₂*ter-*. The laryngeal syllabified after a consonant (thus Greek *patér*, Latin *pater*, Sanskrit *pitár-*; Greek *thugátēr*, Sanskrit *duhitár-* “daughter”) but lengthened a preceding vowel (thus say

Latin *māter* “mother”, *frāter* “brother”) — even when the “vowel” in question was a syllabic resonant, as in Sanskrit *yātaras* “husbands’ wives” < **jṛ̥t-* < **jṛ̥-h₂ter-*).

LARYNGEALS IN MORPHOLOGY

Like any other consonant, Laryngeals feature in the endings of verbs and nouns and in derivational morphology, the only difference being the greater difficulty of telling what’s going on. Indo-Iranian, for example, can retain forms that pretty clearly reflect a laryngeal, but there is no way of knowing which one.

The following is a rundown of laryngeals in Proto-Indo-European morphology.

**h_l* is seen in the instrumental ending (probably originally indifferent to number, like English expressions of the type *by hand* and *on foot*). In Sanskrit, feminine *i-* and *u-* stems have instrumentals in *-ī*, *-ū*, respectively. In the Rigveda, there are a few old *a-* stems (PIE *o-* stems) with an instrumental in *-ā*; but even in that oldest text the usual ending is *-enā*, from the *n-* stems.

Greek has some adverbs in *-ē*, but more important are the Mycenaean forms like *e-re-pa-te* “with ivory” (i.e. *elephantē*? *-ě*?)

The marker of the neuter dual was **-ih_l*, as in Sanskrit *bharatī* “two carrying ones (neut.)”, *nāmanī* “two names”, *yuge* “two yokes” (< *yuga-ī*? **yuga-ī̯*?). Greek to the rescue: the Homeric form *ósse* “the (two) eyes” is manifestly from **h₃ek^w-ih_l* (formerly **ok^w-ī̯*) via fully-regular sound laws (intermediately **ok^wje*).

**-eh_l-* derives stative verb senses from eventive roots: PIE **sed-* “sit (down)”: **sed-eh_l-* “be in a sitting position” (> Proto-Italic **sed-ē-je-mos* “we are sitting” > Latin *sedēmus*). It is clearly attested in Celtic, Italic, Germanic (the Class IV weak verbs), and Balto-Slavic, with some traces in Indo-Iranian (In Avestan the affix seems to form past-habitual stems).

It seems likely, though it is less certain, that this same **-h_l* underlies the nominative-accusative dual in *o-* stems: Sanskrit *vṛkā*, Greek *lúkō* “two wolves”. (The alternative ending *-āu* in Sanskrit cuts a small figure in the Rigveda, but eventually becomes the standard form of the *o-* stem dual.)

**-h_ls-* derives desiderative stems as in Sanskrit *jighāṃsati* “desires to slay” < **g^{wh}i-g^{wh}ṇ-h₂s-e-ti-* (root **g^{wh}en-*, Sanskrit *han-* “slay”). This is the source of Greek future

tense formations and (with the addition of a thematic suffix **-je/o-*) the Indo-Iranian one as well: *bhariṣyati* “will carry” < **bher-ḥ₁s-je-ti*.

**-jeh₁-/*-ih₁-* is the optative suffix for root verb inflections, e.g. Latin (old) *siet* “may he be”, *sīmus* “may we be”, Sanskrit *syāt* “may he be”, and so on.

**h₂* is seen as the marker of the neuter plural: **-ḥ₂* in the consonant stems, **-eh₂* in the vowel stems. Much leveling and remodeling is seen in the daughter languages that preserve any ending at all, thus Latin has generalized **-ā* throughout the noun system (later regularly shortened to *-a*), Greek generalized *-ǎ* < **-ḥ₂*.

The categories “masculine/feminine” plainly did not exist in the most original form of Proto-Indo-European, and there are very few noun types which are formally different in the two genders. The formal differences are mostly to be seen in adjectives (and not all of them) and pronouns. Interestingly, both types of derived feminine stems feature **h₂*: a type that is patently derived from the *o*-stem nominals; and an ablauting type showing alternations between **-jeh₂-* and **-ih₂-*. Both are peculiar in having no actual marker for the nominative singular, and at least as far as the **-eh₂-* type, two things seem clear: it is based on the *o*-stems, and the nom.sg. is probably in origin a neuter plural. (An archaic trait of Indo-European morpho-syntax is that plural neuter nouns construe with *singular* verbs, and quite possibly **jugeh₂* was not so much “yokes” in our sense, but “yokage; a harnessing-up”.) Once that much is thought of, however, it is not easy to pin down the details of the “*ā*-stems” in the Indo-European languages outside of Anatolia, and such an analysis sheds no light at all on the **-jeh₂-/*-ih₂-* stems, which (like the **eh₂-*stems) form feminine adjective stems and derived nouns (e.g. Sanskrit *devī-* “goddess” from *deva-* “god”) but unlike the “*ā*-stems” have no foundation in any neuter category.

**-eh₂-* seems to have formed factitive verbs, as in **new-eh₂-* “to renew, make new again”, as seen in Latin *novāre*, Greek *neáo* and Hittite *ne-wa-aḥ-ḥa-an-t-* (participle) all “renew” but all three with the pregnant sense of “plow anew; return fallow land to cultivation”.

**-h₂-* marked the 1st person singular, with a somewhat confusing distribution: in the thematic active (the familiar *-ō* ending of Greek and Latin, and Indo-Iranian *-ā(mi)*), and also in the perfect tense (not really a tense in PIE): **-h₂e* as in Greek *oīda* “I know” < **wojd-h₂e*. It is the basis of the Hittite ending *-ḥḥi*, as in *da-aḥ-ḥi* “I take” < **-ḥa-i*

(original **-h₁a* embellished with the primary tense marker with subsequent smoothing of the diphthong).

**-eh₃* may be tentatively identified in a “*directive case*”. No such case is found in Indo-European noun paradigms, but such a construct accounts for a curious collection of Hittite forms like *ne-pi-ša* “(in)to the sky”, *ták-na-a* “to, into the ground”, *a-ru-na* “to the sea”. These are sometimes explained as *o*-stem datives in *-a* < **-ōj*, an ending clearly attested in Greek and Indo-Iranian, among others, but there are serious problems with such a view, and the forms are highly coherent, functionally. And there are also appropriate adverbs in Greek and Latin (elements lost in productive paradigms sometimes survive in stray forms, like the old instrumental case of the definite article in English expressions like *the more the merrier*): Greek *ánō* “upwards”, *kátō* “downwards”, Latin *quō* “whither?”, *eō* “to that place”; and perhaps even the Indic preposition/preverb *â* “to(ward)” which has no satisfactory competing etymology. (These forms must be distinguished from the similar-looking ones formed to the ablative in **-ōd* and with a distinctive “fromness” sense: Greek *ópō* “whence, from where”.)

PRONUNCIATION

Considerable debate still surrounds the pronunciation of the laryngeals and various arguments have been given to pinpoint their exact place of articulation. Firstly the effect these sounds have had on adjacent phonemes is well documented. The evidence from Hittite and Uralic is sufficient to conclude that these sounds were “guttural” or pronounced rather back in the buccal cavity. The same evidence is also consistent with the assumption that they were fricative sounds (as opposed to approximants or stops), an assumption which is strongly supported by the behaviour of laryngeals in consonant clusters.

The assumption that **h₁* is a glottal stop [ʔ] is still very widespread. A glottal stop would however be unlikely to be reflected as a fricative in Uralic borrowings, as appears to be the case, for example in the word *lehti* < **lešte* <= PIE **bhlh₁-to*. If, as some evidence suggests, there were two **h₁* sounds, then one may have been the glottal stop [ʔ] and the other may have been the h sound [h] of English “hat”.

Rasmussen suggests a consonantal realization for $*h_1$ as [h] with a vocalic allophone [ə]. This is supported by the closeness of [ə] to [e] (with which it coalesces in Greek), its failure (unlike $*h_2$ and $*h_3$) to create an auxiliary vowel in Greek and Tocharian when it occurs between a semivowel and a consonant, and the typological likelihood of a [h] given the presence of aspirated consonants in PIE.

From what is known of such phonetic conditioning in contemporary languages, notably Semitic languages, $*h_2$ (the “a-colouring” laryngeal) could have been a pharyngeal or epiglottal fricative such as [ħ], [ʕ], [ħ], or [ʕ]. Pharyngeal/epiglottal consonants (like the Arabic letter ح (h) as in Muhammad) often cause a-coloring in the Semitic languages.

Rasmussen suggests a consonantal realization for $*h_2$ as [x], with a vocalic allophone [ə].

Likewise it is generally assumed that $*h_3$ was rounded (labialized) due to its o-coloring effects. It is often taken to be voiced based on the perfect form $*pi-bh_3-$ from the root $*peh_3$ “drink”. Based on the analogy of Arabic, some linguists have assumed that $*h_3$ was also pharyngeal/epiglottal [ʕ^w ~ ʕ^w] like Arabic ع (ayin, as in Arabic muʕallim = “teacher”) plus labialization, although the assumption that it was velar [ɣ^w] is probably more common. (The reflexes in Uralic languages could be the same whether the original phonemes were velar or pharyngeal.)