2. LETTERS AND SOUNDS

2.1 THE ALPHABETS OF MODERN INDO-EUROPEAN

2.1.1. Unlike other languages reconstructed in the past, Indo-European doesn't have an old writing system to be revived with. 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.

2.1.2. 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

Phoneme	*Greek*	*Latin*	*Persian*	*Armenian*	*Cyrillic*	*Devan.*
[**a**]	Α α	A a		Ա ա	А а	अ
[**e**]	Ε ε	E e		Ե ե	Е е	ए
[**o**]	Ο ο	O o		Ո ո	О о	ओ
[**a**ː]	Ᾱ ᾱ	Ā ā	ا	Ա ա	Ā ā	आ
[**e**ː]	Η η	Ē ē		Է է	Ē ē	ऐ
[**o**ː]	Ω ω	Ō ō		Ո ո	Ō ō	औ

[**i**]	Ι ι	I i		Ի ի	И и	इ
[**i**ː]	Ῑ ῑ	Ī ī	ی	Ի ի	Ӣ ӣ	ई
[**u**]	Υ υ	U u		Ու ու	У у	उ
[**u**ː]	Ῡ ῡ	Ū ū	و	Ու ու	Ӯ ӯ	ऊ

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

B. CONSONANTS AND CONSONANTAL SOUNDS

Phoneme	*Greek*	*Latin*	*Persian*	*Armenian*	*Kyrillik*	*Devan.*
[**p**]	Π π	P p	پ	Պ պ	П п	प
[**b**]	Μπ μπ	B b	ب	Բ բ	Б б	ब
[**b^{h}**]	Β β	Bh bh	بھ	Բh բh	Бь бь	भ
[**t**]	Τ τ	T t	ت / ط	Տ տ	Т т	त
[**d**]	Ντ ντ	D d	د	Դ դ	Д д	द
[**d^{h}**]	Δ δ	Dh dh	ذ	Դh դh	Дь дь	ध
[**k**]	Κ κ	K k	ک	Կ կ	К к	क
[**g**]	Γγ γγ	G g	گ	Գ գ	Г г	ग
[**g^{h}**]	Γ γ	Gh gh	گھ	Գh գh	Гь гь	घ
[**k^{w}**]	Κ κ (Ϙ ϙ)	Q q	ق	Ք ք	К’ к’	क
[**g^{w}**]	Γκ γκ	C c	غ	Ղ ղ	Г’ г’	ग
[**g^{wh}**]	ΓΧ γχ	Ch ch	غھ	Ղh ղh	Гь’ гь’	घ

[**i̯**]	Ι ι	J j, I i	ژ/ی	Յ յ, Ի իւ	Й й (J j), И и	य
[**u̯**]	Υ υ (Ϝ ϝ)	W w, U u	و	Ւ ւ	У у	व
[**r**]	Ρ ρ	R r	ر	Ռ ռ	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 ς	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.

NOTE 1. The Latin alphabet was borrowed in very early times from a Greek alphabet and did not at first contain the letter G. The letters Y and Z were introduced still later, about 50 BC

NOTE 2. The names of the consonants in Indo-European are as follows - **B**, **be** (pronounced *bay*); **Bh**, **bhe** (*b^{h}ay*); **C**, **ce** (*g^{w}ay*); **Ch**, **che** (*g^{wh}ay*); **D**, **de** (*day*); **Dh**, **dhe** (*d^{h}ay*); **F**, **ef**; **G**, **ge** (*gay*); **Gh**, **ghe** (*g^{h}ay*); **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**, **xa** (*cha*); **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 **Г**, *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], [ce], [tch], etc. – when writing proper names in the different modern IE languages.

2.1.4. The Latin [u̯] sound developed into Romance [v]; therefore V no longer adequately represented [u̯] 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 [u̯].

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

2.1.5. The consonant cluster [ks] was in Ancient Greece written as Chi 'X' (Western Greek) or Xi 'Ξ' (Eastern Greek). In the end, Chi was standardized as [kh] ([x] in modern Greek), while Xi represented [ks]. In MIE, the X stands for [x], as in the Greek and Cyrillic alphabets, and not as in English.

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.

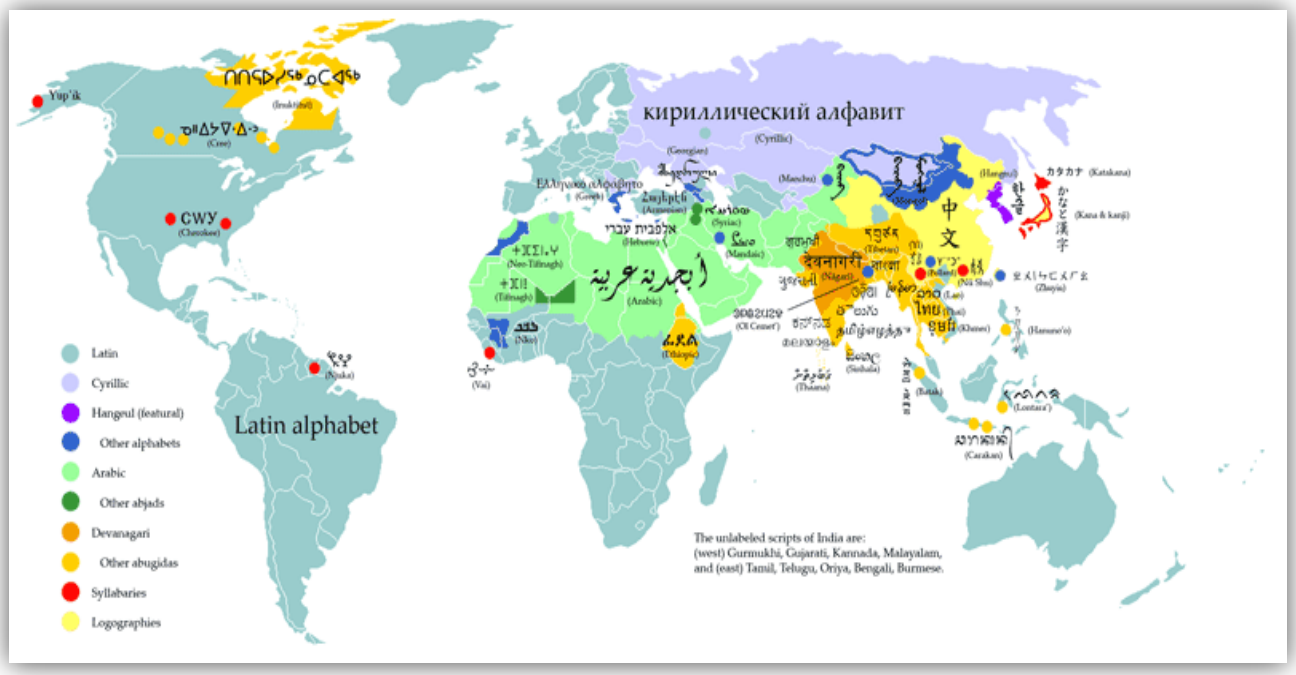

Figure 53. Writing systems of the world today.

2.2. Classification of Sounds

2.2.1. The Vowels are **a**, **e**, **i**, **o**, **u**, and **ā**, **ē**, **ī**, **ō**, **ū**. The other letters are Consonants. The proper Indo-European Diphthongs are **ei**, **oi**, **ai**, **ēi**, **ōi**, **āi**, and **eu**, **ou, au, ēu**, **ōu**, **āu**. In these diphthongs both vowel sounds are heard, one following the other in the same syllable.

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**, **bh**, **d**, **dh**, **g**, **gh**, **c**, **ch**, **l**, **r**, **m**, **n**, **z**, and **j**, **w**.

b. The voiceless consonants are **p**, **t**, **k**, **q**, **f**, **h**, **s**, **x**.

c. The digraphs **bh**, **dh**, **gh** and **ch** represent the prope Indo-European voiced aspirates, whereas **ph**, **th**, and **kh** are voiceless aspirates, mostly confined to foreign words, usually from Greek. They are equivalent to *p+h*, *t+h*, *k+h*, i.e. to the corresponding mutes with a following breath, as in English *loo**p**-**h**ole*, *ho**t**-**h**ouse*, *blo**ck**-**h**ouse*.

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. There is a clear difference between the vocalic allophones of the semivowels and 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 also classified as follows:

Labials	**p**, **b**, **bh**
Dentals	**t**, **d**, **dh**
Velars	**k**, **g**, **gh**; **q**, **c**, **ch**

2.2.4. The Liquids are **l**, **r**. These sounds are voiced. The group **rh** represents the aspirated [r], mainly in words of Greek origin. Other groups include **rr**, the alveolar trill, and its aspirated counterpart **rrh**. There is also **lj**, the palatal lateral approximant.

2.2.5. The Nasals are **m**,**n**. These are voiced. The pair **nj** represents the palatal nasal (similar to the [n] sound in English *onion* or *canyon*).

2.2.6. The Fricatives are **s**, **h**. These are voiceless, but for the *s* before voiced consonants, where it is usually voiced. It is also possible to write – mainly for loan words – voiceless and voiced pairs: labiodentals, **f** and **v**; dentals, **th** and **dh**; post-alveolar **sh** and **zh**. And also the alveolar voiced **z**, and the dorsal voiceless **x**.

2.2.7. The Semivowels are found written as **i**, **j** and **u**, **w**. These are voiced.

NOTE. The semivowels are usually written with **i** and **u** when using the Latin alphabet. Only Proto-Indo-European roots and their derivatives have **j** and **w**; as in **wĺqos**, *wolf*, **wérdhom**, *verb*, **jugóm**, *yoke*, or **tréjes**, *three*. When there is a consonantal sound before a sonant, it is always written **j** or **w**; as in **néwn** [ˈne-u̯n̥], *nine*. For more on this, see § 2.9.4.

2.2.8. There are also some other frequent compounds, such as **ks**, **ts**, **dz**, **tsh**, **dzh**, ...

Phonet. System	*Labials*	*Coronals*	**Palatovelars*	*Velars*	*Labiovelars*	**Laryngeals*
Voiceless	**p**	**t**	****kʲ***	**k**	**kʷ**	
Voiced	**b**	**d**	****gʲ***	**g**	**gʷ**	
Aspirated	**bʰ**	**dʰ**	****gʲʰ***	**gʰ**	**gʷʰ**	
Nasals	**m**	**n**				
Fricatives		**s** , (**z**)				****h₁***, ****h₂***, ****h₃***
Liquids		**r** , **l**				
Approximant	**u̯**		**i̯**			

NOTE 1. [z] was already heard in Late Proto-Indo-European, as a different pronunciation of [s] before voiced consonants, and because of that it is an alternative writing in MIE, as in PIE **nízdos** (for **ní-sd-os**), *nest*, which comes from PIE roots **ni**, *down*, and zero-grade of **sed**, *sit*.

NOTE 2. 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 the question is, however, usually deemed solved, with a majority of scholars supporting only two types of velars – generally Velars and Labiovelars, although other solutions have been proposed. The support of neogrammarians to the 'palatals', as well as its acceptance in Brugmann's Grundriss and Pokorny's Lexikon, has extended the distinction to many (mainly etymological) works, which don't deal with the phonological reconstruction problem directly. For more on this, see Appendix II.2.

NOTE 3. The symbols h_1, h_2, h_3, with cover symbol H (traditionally ə₁, ə₂, ə₃ and ə) stand for three hypothetical "laryngeal" phonemes. There is no consensus as to what these phonemes were, but it is widely accepted that h_2 was probably uvular or pharyngeal, and that h_3 was labialized. Commonly cited possibilities are ʔ, ʕ, ʕʷ and x, χ~ħ, xʷ; there is some evidence that h_1 may have been two consonants, ʔ and h, that fell together. See Appendix II.3.

2.3. SOUNDS OF THE LETTERS

2.3.1 The following pronunciation scheme is substantially that used by those who spoke the Proto-Indo-European language within Europe in the end of the so-called III Stage, at the time when the phonetic trends usually called satemization were probably spreading.

NOTE. MIE cannot permit dialectal phonetic differences – like the palatalization of velars in the Satem group –, because systematization in the pronunciation is especially needed when targeting a comprehensible language.

2.3.2. Vowels:

[**a**ː] as in *father*	[**a**] as in *idea*
[**e**ː] as in *they*	[**e**] as in *met*
[**i**ː] as in *meet*	[**i**] as in *chip*
[**o**ː] as in *note*	[**o**] as in *pot*
[**u**ː] as in *rude*	[**u**] as in *put*

NOTE 1. Following the laryngeals' theory, Proto-Indo-European knew only two vowels, e and o, while the other commonly reconstructed vowels were earlier combinations with laryngeals. Thus, short vowels ***a*** < **h₂e,* ***e*** < **(h₁)e,* ***o*** < **h₃e* and *(h₁)o*, long vowels ***ā*** < **eh₂,* ***ē*** < **eh₁,* ***ō*** < **eh₃* and **oh*. The output of **h₂o* was either ***a*** or ***o***, after the different schools. Short and long vowels ***i̯*** and ***u̯*** are just variants of the semivowels **j* and **w*.

NOTE 2. The sonants may have been lengthened too (usually because of compensatory lengthenings), especially in the conjugation of verbs, giving thus [r̥ː], [l̥ː], [m̥ː], [n̥ː], written as **r̥̄**, **l̥̄**, **m̥̄**, **n̥̄**. The semivowels can also have a prolonged pronunciation, giving allophones **ij** and **uw**. For more details on this see § 2.7.2.

NOTE 3. It is recommended to mark long vowels with a macron, ¯, and stressed vowels with a tilde, ´, and reduplicated stems without an original vowel are represented with an apostrophe, ‘ (as in Greek ***q'qlos***, see **qel**).

2.3.3. Falling Diphthongs and equivalents in English:

ei̯ as in *vein*	**eu̯** *e* (*met*) + *u* (*put*)
oi̯ as in *oil*	**ou̯** as *ow* in *know*
ai̯ as in *Cairo*	**au̯** as *ou* in *out*

NOTE. Strictly speaking, **ji̯**, **wi̯**, as well as **ru̯**, **lu̯**, **mu̯**, **nu̯** (the so-called rising diphthongs) aren't actually diphthongs, because ***j***- and ***w***- are in fact consonantal sounds. Nevertheless, we consider them diphthongs for syntax analysis; as in **Eu-rō-pa-io-**, where the adjectival ending ***-io*** /i̯o/ is considered a diphthong.

2.3.4. Triphthongs:

There are no real triphthongs, as a consequence of what was said in the preceding note. The formations usually called triphthongs are **ji̯ei̯**, **ji̯oi̯**, **ji̯ai̯**; **ji̯eu̯**, **ji̯ou̯**, **ji̯au̯**; or **wi̯ei̯**, **wi̯oi̯**, **wi̯ai̯**; **wi̯eu̯**, **wi̯ou̯** and **wi̯au̯**; and none can be named strictly triphthong, as there is a consonantal sound [i̯] or [u̯] followed by a diphthong. The rest of possible formations are made up of a diphthong and a vowel.

NOTE. Triphthong can be employed for syntax analysis, too. But a semivowel surrounded by vowels is not one. Thus, in **Eurōpáiom**, [eu-roː-‘pa-i̯om], *European* (neuter noun), there aren't any triphthongs.

2.3.4. Consonants:

1. **b**, **d**, **h**, **k**, **l**, **m**, **n**, **p**, are pronounced as in English.

There are several ways to generate breathy-voiced sounds, among them:

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. **n** can also be pronounced as guttural [ŋ] when it is followed by another guttural, as English *sing* or *bank*.

3. **t** is always a plain *t*, never with the sound of *sh*, as in English *oration* or *creation*.

4. **g** always as in *get*. It had two dialectal pronunciations, simple velar and 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*.

5. **c** is pronounced similar to [g] but with rounded lips. Compare the initial consonant in *good* with those of the preceding example to feel the different articulation. The voiceless **q** has a similar pronunciation to that of **c**, but related to [k]; as *c* in *cool*.

6. **j** as the sound of *y* in *yes*, **w** as *w* in *will*.

7. Proto-Indo-European **r** was possibly slightly trilled with the tip of the tongue (as generally in Romance or Slavic languages), but other usual pronunciations of modern Indo-European languages have to be admitted in the revived language, as French or High German *r*.

8. **s** is voiceless as in *sin*, but there are situations in which it is voiced, depending on the surrounding phonemes. Like the aforementioned [r], modern speakers will probably pronounce [s] differently, but this should not usually lead to misunderstandings, as there are no proper IE roots with original **z** or **sh**, although the former appears in some phonetic environments, v.s.

9. **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). Hindustānī is in fact derived from Sanskrit, one of the earliest attested dialects of Late PIE.

10. **x** represents [x], whether with strong, '*ach-laut*', such as *kh* in Russian *Khrushenko,* or *ch* in Greek *Christós*, or soft, with '*ich-*

laut', such as *ch* in German *Kirche* or *Lichtenstein*; but never like *ks*, *gz*, or *z*, as in English.

11. **z**, **v**, **f**, **sh**, are pronounced as in English.

12. **zh** is pronounced as in English *leisure*.

13. **tsh** corresponds to English *ch* in *chain*, and **tzh** to *j* in *jump*

14. The aspirates **ph**, **kh**, **th** are pronounced very nearly like the English stressed *p*, *c*, *t*.

15. There is also another value for **th**, which corresponds to English *th* in *thing*, and for **dh**, which sounds as *th* in *this*.

16. **rh**, **rr** and **rrh** have no similar sounds in English, although there are examples of common loan words, such as Spanish *guerrilla*, or Greek *rhotacism* or *Tyrrhenos*.

17. The pronunciation of **nj** is similar to English *onion* or *canyon*; and that of **lj** to English *million*.

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

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:

Eu-rō-pa-iós, **wér-dhom**[4], **né-wās**[6], **ju-góm**[5].

NOTE. The semivowels [u̯] and [i̯] are in general written **i** and **u**, as we already said, when they are used in the formation of new words, i.e., when they are not derived from PIE roots. That is why the adjective *European* is written **Eurōpaiós**, not ~~***Eurōpajós***~~, and so its derived nominalized inanimate form, n. **Eurōpáiom**, *the European (language)*, or **Itália**, *Italy* and not ~~***Italja***~~. In Proto-Indo-European stems and in words derived from them they are written with **j** and **w**; as, **tréjes**[155], *three*, **néwos**[6], *new*, **dńghuwes** ['dn̥-gʰu-u̯es], *languages*, etc.

2.4.2. Indo-European has also consonant-only syllables. It is possible to hear a similar sound in spoken English or German, as in *Brighton* [*'brai-tn̥*] or *Haben* [*'ha-bn̥*], where the final *n* could be considered vocalic. In this kind of syllables, it is the vocalic sonant (i.e. [r̥], [l̥], [m̥] or [n̥]) the one which functions as syllabic centre, instead of a vowel proper:

bhrgh[128] [bʰr̥gʰ], *bury*; **wĺqos**[23] ['u̯l̥-kʷos], *wolf*; **dékm**[155] ['de-km̥], *ten*; **nŏ̆mn**[19] ['no(ː)-mn̥], *name*.

NOTE 1. Words derived from these vocalic consonants differ greatly in modern Indo-European languages. For example, **dńghwā** ['dn̥-gʰu̯aː] (see **dńghū-**) evolved in Proto-Germanic as *tungō(n)*, 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 *lingua*, which is in turn the origin of Modern English words "*linguistic"* and *"language"*.

NOTE 2. We maintain the old, difficult and somehow unstable vocalic sounds in search for unity. As such a phonetic system is not easy for speakers of modern Indo-European languages, the proposed alternative pronunciation is to add, if needed, an auxiliary schwa [ᵊ] before or after the sonant. The schwa we are referring to is an unstressed and toneless neutral vowel sound. There are usually two different possible pronunciations, depending on the position of the schwa; as in **wĺqos**, which can be pronounced ['u̯ ᵊl-kʷos], the way it probably evolved into Proto-Germanic **wulfaz*, and ['u̯lᵊkʷos], similar to Proto-Greek **(w)lukos*. Other possible examples are **dékm** ['de-kᵊm] (cf. Lat. *decem*, Gmc. *tekham*), and **nŏ̈mn** ['no(ː)-mᵊn] (cf. Lat. *nōmen*, Gmc. *namon*).

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 **né-wos**[6], **mé-dhjos**[7], 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 **ók-tō**, *eight*, **pén-qe**, *five*, etc. but **á-gros**[8], *field*, **s-qá-los**[9], *squalus*.

3. In compounds, the parts are usually separated; as Gmc. loan-translation **aqā-léndhom** (***áqiā***[10]+***léndhom***[11]), *island* ("*water thing+land*"), as Gmc. *aujō landom* (cf. O.E. *igland*, *ealand*), or Celtic **ambh-ágtos** (***ámbhi***[12]+***ag***[13]), *ambassador* ("*about+lead*"), as Lat. *ambactus*, "*servant*".

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.

2.5.3. A syllable is long usually,

a. if it contains a long vowel; as, **mā-tḗr**[14], *mother*, **dṓ-ghūs**[3], *language*

b. if it contains a diphthong; as, **Eu-rṓ-pā**, *Europe*, **léuk-tom**[15]*, light*

c. if it contains any two non-syllabic consonants (except a mute with ***l*** or ***r***)

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, **cĭ̈wós**[16] [gʷi(ː)-'u̯os], *alive*, or **léusō**[17], *loosen*.

b. if it contains a vocalic sonant; as, **ŕtkos**[18] ['r̥t-kos], *bear*, **nōmn**[19] ['noː-mn̥], **dékm** ['de-km̥].

2.5.5. Sometimes a syllable varies in quantity, viz. when its vowel is short and is followed by a mute with **l** or **r**, i.e. by **pl**, **kl**, **tl**; **pr**, **kr**, **tr**, etc.; as, **ágrī**[8]. Such syllables are called *common*. In prose they are regularly short, but in verse they might be treated as long at the option of the poet.

NOTE. Such distinctions of long and short are not arbitrary and artificial, but are purely natural. Thus, a syllable containing a short vowel followed by two consonants, as *ng*, is *long*, because such a syllable requires more time for its pronunciation; while a syllable containing a short vowel followed by one consonant is *short*, because it takes less time to pronounce it.

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**[20], *and*, **-r**[21] [r̥], *for;* while another can be proclitics, like prepositions. The accent position can thus help to distinguish words.

2.6.2. In Modern Indo-European, each non-clitic word has one and only one accent. The possibility of secondary accents depends on the pronunciation.

Verbs in Main Sentences, as well as Vocatives, appear to have had also different, not fixed accents.

NOTE 1. The attested stress of Indo-European dialects shows a great diversity: Germanic and Old Irish stressed the first syllable, Slavic and Greek had a 'semifree' accent, Latin and Armenian (as Albanian) stressed usually the penultimate, etc.

NOTE 2. Baltic and Slavic dialects still show a Musical accent, while Greek and Sanskrit vocabulary seems to show remains of an old Musical accent. In Proto-Indo-European (as in Latin) there are clear traces of syncopes and timbre variations of short vowels near the accentuated ones, what suggests that Indo-European maybe changed a Musical accent for an Intensive one.

2.6.4. The Stress is free, but that does not mean anarchy. On the contrary, it means that each word has an accent, and one has to know – usually by way of practice – where it goes.

NOTE. Unlike Latin (which followed the 'penultimate rule'), or French, in which the last syllable is usually accentuated, or Polish, Finnish, etc. 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 therefore it is possible to use stress as a grammatical device.

2.6.5. Usually, adjectives are accentuated on the ending; as in **Eurōpaiós**, *European*, **Angliskós**[22], *English*, etc., while nouns aren't; as, **Eurōpáios** (maybe 'purer PIE' ***Eurṓpaios***, with root accent), *European*, **Ángliskos,** *English(man)*. There are some other 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. Syllable creation is the most common of the various phonetic changes that modern Indo-European languages have undergone all along these millennia of continuated change. Anaptyxis is a type of phonetic epenthesis, involving insertion of a vowel to ease pronunciation. Examples in English

are *ath-e-lete*, *mischiev-i-ous*, or *wint-e-ry*. It usually happens by adding first a *supporting vowel* or *transition sound* (glide or *Gleitlaut*). After this, in a second stage, the added vowel acquires a fix tone, becoming a full vowel.

2.7.2. The sonants form unstable syllables, and thus vowel epenthesis is very common. For example, ***dḱ-ghwā*** becomes *tu̯n-gō-* in Germanic and *di̯n-gua* in archaic Latin, while ***wĺ-qos***[23] was pronounced *wu̯l-qos* (later *wulfaz*) in Proto-Germanic and *wlu̯-qos* (later *lukos*) in Proto-Greek.

The semivowels [i̯], [u̯] are more stable than sonants when they are syllable centres, i.e. [i] or [u]. But they have also some alternating pronunciations. When they are pronounced *lento*, they give the allophones [ii̯] and [uu̯], always written **ij** and **uw**. Alternating forms like **médhijos** (which gives Lat. *medius*), and **médhjos** (which gives O.Ind. *mádhjas* or Gk. *μέσσος*), probably coexisted already in Late Proto-Indo-European.

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 the PIE root ***bhr***[24]- [bʰr̥], *carry*, (cognate with English *bear*), which can be reconstructed from IE languages as ***bher-***, ***bhor-*** or ***bhr-***. The same can be said of the semivowels [i̯] and [u̯] when they are syllable edges, being syllable centres [u] and [i] in zero-grades.

2.7.3. Laryngeals were probably aspirated phonemes (reconstructed as three to nine different sounds) that appear in most current reconstructions of Middle Proto-Indo-European – i.e. the one including the Anatolian subbranch. Some laryngeals are apparently directly attested in the Anatolian inscriptions. In the other Indo-European dialects known – all derived from IE III –, their old presence is to be seen mostly through the effects they had on neighboring sounds, and on patterns of alternation that they participated in.

NOTE. Because such phonemes weren't probably heard in Late Proto-Indo-European, and because their original phonetic values remain controversial, we don't deem it useful to write them in a Modern Indo-European language system, but for the explanation of some alternating Late PIE roots or stems.

2.7.4. Another vocalizations appear in PIE dialects in some phonetic environments, as two occlusives in zero-grade, impossible to pronounce without adding a vowel; as e.g. **skp**, which evolved as Lat. *scabo* or Got. *skaban*. 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 Bal.-Sla.) or **u**, also considered general, but probably influenced by the context, possibly when in contact with a labial, guttural or labiovelar, as in Greek reduplicate ***q'qlos***[25] ['kʷ-kʷlos], *circle*, *wheel*, from **qel**, *move around*, which is usually pronounced **qúqlos**.

2.7.5. Vocalic prothesis (from Gk. προ-θεσις, *pre-putting*), is the appending of a vowel in front of a word, usually to facilitate the pronunciation. Prothesis differ, not only among PIE dialectal branches, but also frequently within the same language or linguistic group. Especially before [r̥], and before [l̥], [m̥], [n̥] and [u̯], more or less systematically, a vowel is added to ease the pronunciation; as, **ŕtkos**[18] (maybe originally ***ŕtgos***), *bear*, which gives Lat. *ursus* (cognate with Eng. *ursine*), Gk. αρκτος (as in Eng. *Arctic*) or Welsh *arth* (as in Eng. *Arthur*). The timbre of the added vowel is related neither to a linguistic group or individual language, nor to a particular phonetic or morphological environment.

NOTE 1. It is therefore not a good practice in Modern Indo-European to add such vowels in front of words, but, as seen in §2.4.2., an additional auxiliary schwa [ᵊ] could be a useful way to facilitate pronunciation.

NOTE 2. The different dialectal evolution of old difficult-to-pronounce words (like **ŕtkos** or **wĺqos**) can be explained without a need for more phonemes, just accepting that phonetic changes are not always due to an exact pattern or 'sound law'.

2.7.6. Syllable losses are often observed in Indo-European languages. Syncope refers to the loss of an inner vowel, like brief vowels in Gothic; as, *gasts* from **ghóstis**[26]. Also after [u̯], long vowel, diphthong or sonant in Latin; as, *prudens* for *prowidens*, *corolla* for *coronala*, or *ullus* instead of *oinolos*.

Haplology, which consists of the loss of a whole syllable when two consecutive (identical or similar) syllables occur, as Lat. *fastidium* instead of *fastitidium*, or Mycenaean *aporeu* instead of *apiporeu*.

2.8. CONSONANT CHANGE

2.8.1. The so called s-Mobile (*mobile* pronounced as in Italian; the word is a Latin 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***-.

For example, Proto-Indo-European stem (**s**)**táuros**[27], perhaps originally meaning *bison*, gave Greek ταυρος (*tauros*) and Old English *steor* (Modern English *steer*), both meaning *bull*. Both variants existed side by side in Late PIE, but whereas Germanic (aside from North Germanic) has preserved the form with the *s* mobile, Italic, Celtic, Slavic and others all have words for *bull* which reflect the root without the sibilant.

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

IE stem	*Meaning*	*Example with -**s***	*without -**s***
(s)kap-	*tool*	Gk. *skeparnion*	Lat. *capus*
(s)kel-	*crooked*	Ger. *Schielen*	Gk. *kolon*
(s)kep-	*cut, scrape*	Eng. *scab*	Lat. *capulare*
(s)ker-	*cut*	Eng. *shear, sheer*	Lat. *curtus*
(s)ker-	*bend*	Eng. *shrink*	Lat. *curvus*
(s)kleu-	*close*	Ger. *schließen*	Lat. *claudere*
(s)qalo-	*big fish*	Lat. *squalus*	Eng. *whale*
(s)leg-	*slimy*	Eng. *slack*	Lat. *laxus*
(s)lei-	*slimy*	Eng. *slime*	Lat. *linere*
(s)mek-	*chin*	Ir. *smeach*	Lat. *maxilla*
(s)melo-	*small animal*	Eng. *small*	Gae. *mial*
(s)neu-	*tendon, sinew*	Gk. *neuron*	Skr. *snavan*
(s)peik-	*magpie*	Ger. *Specht*	Lat. *pica*
(s)pek-	*spy, stare*	O.H.G. *spehon*	Alb. *pashë*
(s)plei-	*split*	Eng. *split, splinter*	Eng. *flint*
(s)perg-	*sparrow*	O.Eng. *spearwa*	Lat. *parra*
(s)tea-	*stand*	Lat. *sto*, Eng. *stand*	Ir. *ta*
(s)ten-	*thunder*	O.H.G. *donar*	O.Sla. *stenjo*
(s)twer-	*whirl*	Eng. *storm*	Lat. *turba*

NOTE 1. For **(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. *spáśati*, Av. *spašta*, Gk. *skopós* (<***spokós***), Lat. *spektus*, O.H.G. *spehon*, without **s**- in O.Ind. *páśyati*, Alb. *pashë*. For PIE **(s)ker**, cf. O.Ind. *ava-*, *apa-skara-*, Gk. *skéraphos*, O.Ir. *scar*(*a*)*im*, O.N. *skera*, Lith. *skiriù*, Illyr. *Scardus*, Alb. *hurdhë* (<****skrd***-), without **s**- in O.Ind. *kṛnáti*, Av. *kərəntaiti*, Gk. *keíro*, Arm. *kcorem*, Alb. *kjëth*, Lat. *caro*, O.Ir. *cert*, O.N. *horund*, Lith. kkarnà, O.Sla. *korŭcŭ*, Hitt. *kartai-*, and so on.

NOTE 2. 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 (Adrados).

2.8.2. Before a voiced or aspirated voiced consonant, **s** was articulated as voiced, by way of assimilation; as, **nízdos**[28] ['niz-dos], *nest*, or **mízdhos** ['miz-dʰos], *meed, salary*. When **s** forms a group with sonants there is usually assimilation, but such a trend is sometimes reversed by adding a consonant; as Lat. *cerebrum*, from **kerésrom**[29].

2.8.3. The **s** between vowels was very unstable in PIE, evolving differently in individual dialects; as, **snúsos**[30], *daughter-in-law* (cf. Lat. *nurus*, O.H.G. *snur*). The most common examples of these phonetic changes appear in PIE ***s*** stems, when followed by a vowel in declension; as **nébhōs**[31], *cloud*, which gives O.C.S. *nebesa*, Gk. *νεφέλη*, or **génōs**[32], *race, stock, kind*, which gives Lat. *genus*, *generis*.

2.8.4. A sequence of two dentals – as ****tt***, ****dt***, ****tdh***, ****ddh***, etc. – was eliminated in all Indo-European dialects, but the process of this suppression differed among branches, some earlier dialects (as Vedic) showing no change, some others an ***st*** or ***sdh***, and others ***ss***. This trend began probably in Middle PIE, and thus Late PIE speakers knew such evolutions, which we sum up into a common intermediate stage ****st***, ****sdh***, which was followed in early IE dialects, and probably known to the rest of them.

Examples in MIE are e.g. forms derived from PIE root **wéid**[33], *know, see*, (cf. Lat. *vidēre*, Gmc. *wītan*, Eng. *wite*); as, p.p. **w(e)istós**, *known, seen*, from ****w(e)id-tó-***, (cf. O.Ind. *vitta-*, but Gmc. *wīssaz*, Lat. *vīsus*, Gk. ἄ-(ϝ)ιστος, Av. *vista-*, O.Pruss. *waist*, O.Sla. *věstъ*, O.Ir. *rofess*, etc.), which gives e.g. Latin **ad wístom**, *advice* (Lat. *ad visum*), or **wístion**, *vision* (Lat. *vīsiō*), in turn giving **qēlewístion**[34], *television*; Greek **wistór,** *wise, learned (man)*, from Gk. ἵστωρ (*ʰístōr*) or ϝίστωρ (*wístōr*), which gives **wistoríā**, *history*, from Gk. ἱστορία (*ʰistoría*); imperative **wéisdhi!**, *see!*, as O.Lith. *weizdi* (from ****wéid-dhi***, cf. O.C.S. infinitive *vižd*o), Sla. **eghwéisti**, *certainly*, as O.C.S. *izvěstъ*, etc.

2.8.5. The manner of articulation of an occlusive or sibilant usually depends on whether the next phoneme is voiced or voiceless. So e.g. voiced **ag**[35], *carry*, gives voiceless **ágtos** ['akt-os] (not reflected in MIE writings), cf. Gk. ακτος (*aktos*) or Lat. *actus*. The same happens with voiced aspirates, as in **legh**[36], *lie* (cognate to Eng. *log*), giving Gk. λεκτρον (*lektron*), Lat. *lectus*, O.H.G. *Lehter*; also, compare how voiceless **p**- becomes -***b***, when **pōds**[37], *foot*, is in zero-grade -***bd***-, as in Gk. επιβδα (*epibda*).

2.8.6. Some difficult consonantal compounds may be so pronounced in Modern Indo-European as to avoid them, imitating its modern use; as, **klus(sk)ō**[38] ['lu-s(k)oː], *listen* (cf. Gmc. *hluza*, O.Ind. *śrṓṣati*, O.Ir. *cluas*, Arm. *lur*, Toch. A *klyoṣ*, Lith. *kláusît*, O.Bul. *slušati*, etc.), from IE **klew**, *hear*; **psūghologíā**[39] [suː-gʰo-lo-'gi-aː], *psychology* (as Gk. ψυχολογία, from Gk. ψυχή, MIE ***psū-ghā́***, for some IE ****bhs-ū-gh***-), **smwīdikós**[40] [s-u̯iː-di-'kos], *sovietic* (O.Rus. *съвѣтъ*, *suvetu*, for some ****ksu***-, loan-translation of Gk. συμβούλιον, *sumboulion*), **gnā́tiōn**[41] [naː-'tu̯oːn], *nation* (as Lat. *natio*), **prkskṓ**[42] [prs-'koː/pors-'koː/pos-'koː], *ask, demand, inquire* (cf. Skr. *pṛcchati*, Av. *pərəsaiti*, Pers. *pursēdan*, Lat. *poscere*, O.H.G. *forskōn*, Lith. *peršù*, O.Ir. *arcu*, Toch. *pärk*), etc.

NOTE. Verbs like **klusinā***, a loan translation of English '*listen*' (from IE ***klu-s-***, *listen*, from **klew**, *hear*), should be avoided if possible in Modern Indo-European, for the sake of proper communication, if there is another common PIE verb with the same meaning; in this case, the verb is cognate with other IE verbs derived directly from **klus(sk)ō**, and therefore it is unnecessary to use the English tertiary formation shown. Such forms are too derived to be considered an Indo-European term proper; it would be like using Romance **māturikāmi*, *get up early*, loan-translating Spanish "*madrugar*".

2.9. PECULIARITIES OF ORTHOGRAPHY

2.9.1. Indo-European words may show a variable orthography.

2.9.2. In many words the orthography varies because of alternating forms that give different derivatives; as in **dṓmos**[43], *house*, but **demspóts**[44] [des-'po-ts], *master, lord, despot*, as Gk. *δεσπότης* (*despótēs*), Skr. *dampati*, Av. *dəṇg patōiš*, (with *fem.* **demspótnia**, [des-'po-nia]) or **démrom**, *timber*, as Gmc. *temran*, all from PIE root ***dem-/dōm-***, *house*.

NOTE. The forms shown, Greek ***dems-pót-ā***, as well as Indo-Iranian ***dems-pót-is***, are secondary formations derived from the original Proto-Indo-European form; compare, for an original PIE ending ***-t*** in compounds, Lat. *sacerdōs*<**-**ōts***, O.Ind. *devastút-*, "*who praises the gods*", etc.

2.9.3. In other situations, the meaning is different, while the stems are the same; as, **gher**[45], *enclose, grasp*, which gives **ghórdhos**/**ghórtos**, *garden, enclosure, town* (cf. Gmc. *gardon*, Lat. *hortus*, Gk. *khortos*, Phry. *-gordum*, O.Ir. *gort*, Lith. *gardas*, O.C.S. *gradu*, Alb. *garth*, etc.), and **gher**[46], *bowels*, fig. *like, want*, giving **ghŕ̥dhus**, *hunger*, etc.

2.9.4. In some cases, however, the grammatical rules of Modern Indo-European affect how a word is written. For example, the word **Spániā**[140], *Spain*, could have been written ~~***Spánjā***~~, or **Brittániā**, *Britain*, ~~***Brittanjā***~~; but we chose to maintain the letter ***-i*** when possible. We write ***-j*** or ***-w*** only in some specific cases, to differentiate clearly the Proto-Indo-European roots from its derivatives:

NOTE. Modern English *Britain* comes from O.Fr. *Bretaigne*, in turn from L.Lat. *Britannia*, earlier Lat. *Brittania*, itself from **Brítton**, *Briton*, from Lat. *Britto*, *Brittonem*, from the Celtic name given to the Celtic inhabitants of Great Britain before the Anglo-Saxon invasion, MIE **Britts**, *Briton*. A more Germanic noun in Modern Indo-European would be **Brittonléndhom**, as it was known in Old English, *Breten-lond*, similar to the MIE term for "*England*", **Angloléndhom**, v.s.

1. In PIE roots and its derivatives; as, **tréjes** (possibly from earlier **tri-**), *three*, **jugóm**[5] (from **jeug**), *yoke*, **sā́wel**[68], *sun*, **néwos**, *new*, (probably from **nu**, *now*), etc. Therefore, PIE roots with different articulations of the semivowel [u̯], [i̯] can be written differently; as, **neu-/nou-**, *shout*, but part. ***now-ént-*** "*announcing*" (not ~~***nouent-***~~), giving **nówentios** ['no-u̯en-ti̯os], *messenger*, or **nówentiom**, *message* (from Lat. *nūntius* and *nūntium*); also **cei**[47], *live*, with variant ***cjō-*** (not ~~***eiō-***~~), giving **cjṓiom** ['gʷi̯oː-i̯om], *being*, *animal*, as Gk. ζῴον (*zōon*); it also gives variant ***cio-*** (and not ~~***ejo-***~~), as in **cíos**, *life*,

from Gk. *βιος*, and hence **ciologíā** [gʷi̯o-lo-'gi-a], *biology*, (in compound with **lógos**[134], from Gk. *λόγος*), and not ~~***cjologíā***~~.

NOTE. This rule is also followed in declension; as, Nom. **ówis**[149], Gen. **owjós** or Nom. **pékŭ̆**[150], Gen. **pékwos**.

2. In traditionally reconstructed stems with a semivowel; as **serw**, *protect*, (possibly from ***ser-***[48]), which gives extended **sérwā**, *keep*, *preserve*, and **sérwos**, *slave*, *servant*, or **cei(w)**, *live*, from which zero-grade **cǐwós**, *alive*, *living*; but cf. **man**[49], *man*, which gives common **mánus**, and Gmc. **mánuos**, *man*, not ~~***manwos***~~, and adjective **manuiskós**, *human*; or Latin ***sítus***, *place* (possibly but unlikely from PIE suffixed ****tki-tus***[77]), is ***situā***, *locate*, *situate*, and not ~~***sitwā***~~, etc.

NOTE. This rule is followed because of a) scarcely attested roots, whose origin is not straightforward – as **serw-**, which could be from PIE **ser-**, but could also be just an Etruscan borrowing, and b) Indo-European tradition.

3. In metathesized forms; as PIE **neu**[50], *tendon, sinew*, which gives stems ***neuro-***, and ***nerwo-***, i.e. **néurom**, *neuron*, from Gk. νεῦρον (as in abstract collective **neurā́**), and **nérwos**, *nerve*, from Lat. *neruus*, possibly from Italic *neurus*.

NOTE. Following these first three rules, semivowels from Proto-Indo-European roots (whether inflected or not) should be clearly distinguished from the semivowels of derivatives extended in ***-uo-***, ***-io-***, ***-nu-***, and so on.

4. When there is a consonantal sound before or after a sonant, whether a PIE root or not; as, **néwn**, *nine*; **stā́jr̥**[51], *fat*, **pā́wr̥**[52], *fire*, **pr̥wós**[155], *first*, **perwn̥tós**[53], *rocky*, etc. Also, in *vowel+glide*; as in ***bháwtos*** ['bʰau̯-tos], a Greek loan translation (also as loan word ***phṓtos***), whose original IE (genitive) form is **bhauesós**->***bhau(e)tós***->***phōtós***), hence Gk. φῶς, φωτός (*phōs*, *phōtós*).

NOTE. Graeco-Latin loans like ***bháwtos***, *photo*, ***pórnos***, *porn*, from **pornogrbhós**, *pornograph*, from **pornā́**, *prostitute*; ***rewolútion***, *revolution*, from O.Fr. *revolution*, itself from L.Lat. *reuolutiō*, for which Latin had originally *res nouae*; or ***ghostā́lis***, *hotel*, from Fr. *hôtel*, from L.Lat. *hostalis*, "*guest-house*", from *hostis*, "*guest*", for which Latin used *deuersorium*; etc. Such loan words are common to most modern IE languages, especially within Europe, and may therefore be left so in MIE, instead of trying to use another common older Proto-Indo-European terms.

5. When the semivowel ***-i-*** is followed or preceded by another ***i***, or the semivowel ***-u-*** is followed or preceded by another ***u***; as, **dréuwos**[54], *confidence*, **léuwā**[55], *lag*, **bolijós**[56], *big*, etc.

NOTE. This happens usually in inflected forms of nouns and verbs ending in [i:] or [u:]; as, **dńghuwes**, *languages*, **bhruwés**, *of the brow*, etc.

6. As a general exception, none of these rules should be followed in compounds, when the semivowel is the last sound of the first word; e.g., for **triáthlōn** (from Gk. *athlon*, "*contest*"), *triathlon,* we won't write ~~***trjáthlōn***~~. Also, more obviously, **Sindhueurōpáiom**, and not ~~***Sindhweurōpáiom***~~.

NOTE. In Modern Indo-European, compounds may be written with and without hyphen, as in the different modern Indo-European languages; for **Sindhueurōpaiom**/**Sindhu-Eurōpaiom**, 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. هندواروپائی, Hin. हिन्द-यूरोपीय, etc.

2.9.5. What many old PIE books reconstruct as [ə] or *schwa* is generally written and pronounced in Modern Indo-European with a simple **a**; as, **patḗr**[57], *father*, for **ph₂ter-*, **bhátis**[58], *appearance*, for **bʰh₂tis*, or **ána**[59], *breath*, for **anh₂* – from which derivatives MIE **ána<u>a</u>mālis**, *animal*, as Lat. *animalis* (affected by Ablaut because of the 'penultimate rule' of Classic Latin), MIE **ána<u>a</u>mos**, *wind*, as Gk. ἄνεμος, MIE **ána<u>a</u>ti**, *he breathes*, as Skr. *aniti*, and so on.

NOTE. Academic works use traditionally this *Schwa Indogermanicum* to represent vowels of uncertain quality (and not neutral vowels) in Late PIE. It was observed that, while for the most part [a] in Latin and Ancient Greek corresponded to *a* in Sanskrit, there were instances where Sanskrit had [i] while Latin and Greek had [a], such as Skr. *pitar* vs. Lat. *pater* and O.Gk. *πάτερ*. These findings evolved into the theory of the so-called laryngeals. Most scholars of Proto-Indo-European would now postulate three different old phonemes rather than a single indistinct schwa. Some scholars postulate yet more, to explain further problems in the Proto-Indo-European vowel system. Most reconstructions of **-ə-* in older literature would correspond to **-h₂-* in contemporary notation, and usually to ***-a-*** in Modern Indo-European simplified (Northwestern dialectal) writing and phonological system. See Appendix II.3 for more details on the reconstructed PIE laryngeals.

2.9.6. The forms with the copulative **-qe**[20], *and*, and disjunctive **-wĕ**, *or*, are usually written by adding it to the preceding word, as in Latin *-que*, but with a hyphen.

2.9.7. The capital letters are used at the beginning of the following kind of words:

a. the names of days[60], months[61], seasons[62] and public holidays; as, **Januários**, *January*, **Sem**, *Summer*, **Newóm Jḗrom**, *New Year*, etc.

b. the names of people and places, including stars and planets; as, **Sā́wel**, *Sun*, **Djḗus**, *God*[63], **Teutiskoléndhom**, *Germany* (loan-translated O.Ger. *Diut-isk-lant*, v.i. Compound Words §4.10).

c. people's titles, as **Prōbhastṓr**[64], *Professor*, **Kolumnélis**[65], *Colonel*, **Disrēgtṓr**[66], *Director*, etc.

d. with **Nŕtos** or **Skéuros**, *North*[67]; **Súntos** or **Déksinā**, *South*[68]; **Áustos**, *East*[69] and **Wéstos**, *West*[70] and its derivatives. Also adjectives **Nrtrós**, *Northern*, **Suntrós**, **Deksiós**, *southern*, **Austrós**, *eastern*, **Westrós** or **Wesperós**, *West*.

e. in official or well-established place names; as **Kolossḗom**, *Coliseum* (from Lat. *Colossēum*, in turn from **kolossós**, Gk. κολοσσός), **Pláteiā**[71], *the Square* (from Lat. *platea*, from PIE **pel**, *flat*), etc.

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

2.10. KINDRED FORMS

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

PIE	*Proto-Gmc.*	*Gothic*	*O.Eng.*	*Latin*	*English (Lat.)*
pater	fader	fadar	fæder	pater	father (*paternal*)
septm	sebun	sibun	seofon	septem	seven (*September*)
treb	thurpa-	þaurp	þorp	trabēs	thorp (*trabecula*)
leb	lepjon	lep	lippa	labium	lip (*labial*)
bhrater	brothar	broþar	broþor	frater	brother (*fraternal*)
bher	beron	bairan	bera	ferre	bear (*infer*)
wert	werthaz	wairþan	weard	uertere	-ward (*versus*)
trejes	thrijiz	þreis	þrēo	tres	three (*trinity*)
dekm	tekhan	taihun	ten,tien	decem	ten (*decimal*),
ed	etanan	itan	etan	edere	eat (*edible*)
dhē	dōn	gadeths	dōn/do	facere	do (*factor*),
dhers	ders	gadars	dearr	festus	dare (*manifest*)
leuk	leukhtam	liuhaþ	lēoht	lux	light (*lucid*)
kerd	khertan	hairto	heorte	cor(d)	heart (*core*)
aug	aukon	aukan	eacien	augere	eke (*augment*)
gnō	kunnan	kunnan	cunnan	(g)noscere	can (*notice*)
ghostis	gastiz	gasts	gæst, giest	hostis	guest (*hostile*)
bhergh	burgs	baurgs	burg, burh	fortis	borough (*force*)
leiq	laikhwnjan	leihwan	lænan	linquere	lend (*relinquish*)
qi/qo	khwi/khwa	hwi/hwa	hwilc/hwæt	qui/quo	why/what (*quote*)
cem	kuman	qiman	cuman	uenire	to come (*venue*)
cĕ̄wos	kwi(k)waz	quis	cwicu	uīuus	quick (*vivacity*)
lech	līkhtaz	leihts	līht, lēoht	leuis	light (*levity*)
cher	brennan	brinnan	beornan	fornus	burn (*furnace*)