

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*.

7. Verbs

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	-∅-	-e- + -∅- = -e- in alternance with -o- + -∅- = -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 -∅- 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”.

7. Verbs

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 \emptyset 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

		ACTIVE		MIDDLE (or Mediopassive)		
		Primary	Secondary	Primary	Secondary	Passive-only
Sg.	1.	-mī, -ō	-m	-mai, -ai	-ma, -a	-mar, -ar
	2.	-sī	-s	-soī	-so	-sor
	3.	-tī	-t	-toi	-to	-tor
Pl.	1.	-mes/-mos	-me/-mo	-mesdha	-medha	-medhar
	2.	-t(h)e	-te	-(s)dhwe	-dhwe	-dhwēr
	3.	-ntī	-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, **-soī**, **-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. *-āmtä-*), **-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 **-ī** (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 **-ī** of the active. Both Mediopassive endings (**-r** and **-ī**) coexisted already in the earliest reconstructible PIE, and **-ī** 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 **-ī** 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
		-ṅtoi	-ṅto	-ṅtor	-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:

7. Verbs

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*, **duká́-**, *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*, **bhouthējō**, *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, **cmṣkō**, *walk about* (cf. **cemjō**, *come*), **pṛkskō**, *ask repeatedly*, **gnōskō**, *know*. Also with reduplication; as, **cícṣkō**, **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 *subsidiūm*, *praesidiūm*, 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.

A GRAMMAR OF MODERN INDO-EUROPEAN

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-ŋti</i>
1g	Present, Athematic, with -e- Reduplication.	* <i>d^hé-d^hoh₁-ti</i> /* <i>d^hé-d^hh₁-ŋti</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-gŋh_r-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^hr₃h₃-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>gŋh₁-jé-toi</i>
2a	Aorist, Athematic, root	* <i>g^wem-t</i>
2b	Aorist, Athematic, suffix -s-	* <i>prek-s-ŋt</i>
2c	Aorist, Thematic, Reduplicated	* <i>we-uk^w-e-t</i>
3a	Perfect, Reduplicated	* <i>g^we-g^wom-</i> / <i>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 **-á-je/o-**, **-é-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, καρχαλαω, μαρμαιρω, δενδύλλω, λαλεω, and, in other IE dialects, Slavic *glagoljo*, Latin ('broken' reduplication with different variants) *bombico, bombio, cachinno, cacillo, cracerro, crocito, cucullio, cucurrio, curculio, didintrio, 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: **prkskō**, *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*, **ēsmai**, *find oneself, be*.
- b. In **ā** (i.e. PIH **h*₂): **snāmi**, *swim*, **bhamai**, *speak*.
- c. In **ē** (i.e. PIH **h*₁): **bhlēmi**, *cry*, **(s)remai**, *calculate*.
- d. With Nasal infix: **leiq-** (**lineqti/linqṭi**), *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 AIIIId in **-u-jo-** of the Thematic Group.

IV. Suffixed:

- a. In **-nā-** (<PIH **neh*₂): **pérnāmi**, *grant, sell* (cf. Gk. *περνημι*, O.Ir. *ren(a)id*, etc.), **qrínāmi**, *buy* (cf. O.Ind. *krīnāti*, O.Ind. *cren(a)im*, gr. *πρίαμαι*, 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, **pr̥k-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 **ǝ/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 \emptyset), 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 \emptyset 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	chṃés	imés	smes
	2.	dte	chṃté	ité	ste
	3.	denti	chṃenti	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)steh₂més</i>
	2.	dhídhate	(dí)date	(sí)state	* <i>(sí)steh₂té</i>
	3.	dhídhanti	(dí)danti	(sí)stanti	* <i>(sí)steh₂ṇti</i>

7. Verbs

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. *trásate*, ‘*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-skó** (from **prek-**), **cm-skó** (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 **prk-skó**, *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 **str-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 \emptyset ; 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. $\omega\theta\epsilon\omega$, 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. *vāsáiyati*, 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*, **nōmnjō**, *name* (cf. Gk. *onomainō*, Got. *namnjan*), or **melit**, *honey*, **młitjō**, *take honey from the honeycomb* (as Gk. *blittō*), 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. *siroy*, “love”, *sirem*, “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 **lubhėjeti** (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 \emptyset/\emptyset , 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 ***(h_i)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*, **leiq-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 **leiq-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 **k̄lneumi** is difficult to reconstruct with certainty; often interpreted as with infix **-n-**, i.e. **k̄l-n-eu-**, it has been proposed that it is a zero-grade suffixed **klū-neu-**, cf. Buddh. Skr. *śrun*; Av. *surunaōiti*; Shughni *çin*; O.Ir. *cluīnethar*; 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, **çṃskó/cām**, *come*;

c. Thematic Present; as, **ghewō/ghewṃ**, *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. **liq-** and **liq-**, always opposed to the Present:

a. The **liqé/ó-** form (i.e. zero-grade) is usually reserved for the Aorist stem; as, **ṃṃdh-skō/ṃṃdh-ó-m**, *suffer*.

b. The **liqē/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, spondit*, etc., or O.Ind. *atitaram, ajjanam*, 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. *vedo/věsŭ, nesŭ/něsŭ, pějo/pěxŭ, moljo/molixŭ, nesŭ/mněxŭ*, etc. Cf. also Skr. *ávrkšam, ádhukšas, árukšas*, etc. For the Future stem coming from sigmatic aorist stem, Adrados (1996) states: “Homeric Greek aorists *dúseto, béseto*, 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 \emptyset 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-**; **mñjō/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. *amauis* (*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 **-ī-**. 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 **-ī-** vs. Aorist Athematic in **-ē-**, **-ā-**; as, **mńjō/mńēm**, *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 **-ī/-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), **gígnō-mi/gé-gon-a/ge-gŋ-mé**, *know*; **bhindh-ō/bhondh-a/bhŋdh-mé**, *bind*; **bheudhō/bhoudh-a/bhudh-mé**, *bid*;

NOTE. 1) for different formations, cf. **kan-ō/(ké)kan-a/kŋ-mé**, *sing*, cf. O.Ir. *cechan*, *cechan*, *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. *τεθηλα*, 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*, *detinūī*), although this may not be the case (cf. Lat. *concinūī*). 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, **slēb-ō**, **séslēb-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 **woida**, from **weid-**, cf. for **woisda** (<**woid-thze*), O.Ind. *véttha*, Gk. (*w*)*oīstha*, Goth. *waist*. Cf. also Gk. *εγνοκα*, 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. *бѣиѹ*, Russ. *бѣтъ*, Cz. *býti*, Pol. *być*, Sr.-Cr. *bíti*, etc.), and also in Lith. *būti*, O.Ind. *bhūtis*, 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. *gn̄tūrā*, 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.

7. Verbs

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).

7. Verbs

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*), **bhērete!** *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 **eimi**; 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) **-dhi**, which seems to be very old too; as, **i-dhi!** *go!*, **s-dhi!** *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.	-ṅtōd	-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. **bhérési**, *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, **k₁neumi**, Subj. **kléwomi**.

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. *velętb*. 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-ŋ*, *-*oj-ŋt*, Athem. *-*ij-ŋt*.

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 **bhṛeti**, *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, **wīrí 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 *sthíti* '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 -*σθαι*, 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-ṅt-**, *who exist, being*, **weq-ont-/uq-ṅt-**, *who speaks*, **dhe-dha-nt-**, *placing*, **jung-ṅt-**, *joining*.

NOTE. For **s-ṅt-** instead of **sent-**, cf. **ap-sṅt-** (for **apo-we-sent-is**) in Lat. *(ab)sent-*, Myc. pl. *(a-p)e-a-sa*, i.e. *ap-ehassai* (with *-assa-<*-ṅt-ihz-*). A. Morpurgo Davies (1978) considered that “[a]s far as we know, there is no reason to attribute **his-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. **-ntṃ**, **-wosṃ**, 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-**), **dhēmṇá**, “*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*; **ch₁n-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, **plēnāmi**, *fill*, cf. O.Ind. *pr₁ṇāti* Goth. *fullnan*, Ger. *füllen*, O.Ir. *lín(a)im*, Arm. *Inum*, 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 **pr(w)-ismós**, 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 **-lí-** are found in Latin, Balto-Slavic, Tocharian and Armenian; as, **ṛbherelós**, *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*; **gnōtinós**, *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* < **m̥n̥-m̥*, “reminder”, PIE **mnām̥*, into Gk. *mnēmon* > **mnāmon**, “who remembers”; compare also Skr. *bráhman*, “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.	déikomom	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.	widějomom	widējōmos	widējoime	-	widějomo
	widějete	widējēte	widējoite	wéidete	widějete
	widějonti	widējōnti	widējoint	wéidontōd	widějónt

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
widéjetoi	widējētoi	widéjoito	widéjeto	widéjetor
widējomesdha	widējōmesdha	widéjoimedha	widējomedha	widējomedhar
widédjedhwe	widējēdhwe	widéjoidhwe	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.	lousm̄	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	dikóm̄	dikóim
	dikés	dikés̄	dikóis
	dikét	dikét̄	dikóit
Pl.	dikomo	dikōmo	dikoime
	dikete	dikēte	dikoite
	dikónt	dikónt̄	dikóint

NOTE. For original **dikóm**, cf. *disáti*, Gk. *ἄδικος*, etc.

weistum, to see (Aorist Stem **wid-ó-**, zero-grade)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	widóm	widóm̄	widóim
	widés	widés̄	widóis
	widét	widét̄	widóit
Pl.	widomo	widōmo	widoime
	widete	widēte	widoite
	widónt	widónt̄	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**>).

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.	<i>lousjō</i>	<i>lousjom</i>
	<i>lousjesi</i>	<i>lousjes</i>
	<i>lousjeti</i>	<i>lousjet</i>
Pl.	<i>lousjomos</i>	<i>lousjomo</i>
	<i>lousjete</i>	<i>lousjete</i>
	<i>lousjonti</i>	<i>lousjont</i>

deiktum, to show (Future Stem *deik-s-jo-*)

	<i>Future</i>	<i>Conditional*</i>
Sg.	<i>deiksjo</i>	<i>deiksjom</i>
	<i>déikjesi</i>	<i>deiksjes</i>
	<i>déikjeti</i>	<i>deiksjet</i>
Pl.	<i>déikjomos</i>	<i>déikjomo</i>
	<i>déikjete</i>	<i>déikjete</i>
	<i>déikjonti</i>	<i>deiksont</i>

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.	<i>weidsjo</i>	<i>weidsjom</i>
	<i>wéidsjesi</i>	<i>weidsjes</i>
	<i>wéidsjeti</i>	<i>weidsjet</i>
Pl.	<i>wéidsjomos</i>	<i>wéidsjomo</i>
	<i>wéidsjete</i>	<i>wéidsjete</i>
	<i>wéidsjonti</i>	<i>weidsjont</i>

NOTE. With the old PIE volutative-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	-	esm̄
	esi	esesi	sjēs	es/sdhí	es
	esti	eseti	sjēt	estōd	est
Pl.	smés	ésomes	sīme	-	esme
	sté	ésete	sīte	(e)ste	este
	senti	esonti	sīnt	sentōd	esent
<i>Participle: sents, sentja, sent</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* (<**son̄ti**>), Gk. *εἰμι, εἶ, εἶσσι, εἶσι* (Dor. *ἐντῆ*), 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* (<**son̄ti**>), Russ. *есмь, еси, есть, суть* (<**son̄ti**>), 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. *ισταην, διδοιην, τιθειην*, O.Ind. *syaam (asmī), dvisyām (dvesmī), iyām (emī), juhuyām (juhkomī), sunuykām (sunomī), rundhyām (runadhmi), 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	syát	syáma	syáta	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 **kļneumi**, **(sī)stāmi**, with similar meaning and use, and in most EIE dialects completely replaced them.*

kleutum, *to hear* (Present Stem **kļneu-**/**kļnu-**, with Nasal Infix)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>	<i>Imperative</i>	<i>IMPERFECT</i>
Sg.	kļneumi	klewomi	kļnujém	-	kļnewm̄
	kļneusi	klewesi	kļnujés	kleu/kludhi	kļneus
	kļneuti	kleweti	kļnujét	kleutōd	kļneut
Pl.	kļnumes	kléwomos	kļnwīme	-	kļneume
	kļnute	kléwete	kļnwīte	kleute	kļneute
	kļnunti	klewonti	kļnwīnt	kléwntōd	kļnewnt

NOTE. Late PIE indicative forms were read **kļnumés**, **kļnuté**, Opt. **kļnwīmé**, **kļnwīté**, 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. **kļnéwīnt**; 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-** from a diphthong **-aī-**. For **sta-jo-** as a thematic subjunctive (Vedic uses its *injunctive sthe-*), cf. O. Gk. subj. 1pl. στείομεν (< PGk *stějome-* < PIE **stājome-* > MIE **stājome-**), from Gk. ἵστημι; also, θείομεν (< PGk *dhejome-* < PIE **dhājome-* > MIE **dhājome-**) from τίθημι, IE **dhē-**; δείομεν (< PGk *dejome-* < PIE **dājome-* > MIE **dājome-**) 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	kļewai	kļnwīma	kļneuma	kļuneumar
kļneusoi	kļéwesoi	kļnwīso	kļneuso	kļneusor
kļneutoi	kļéweto	kļnwīto	kļneuto	kļneutor
kļnéumesdha	kļéwomesdha	kļnwīmedha	kļnéumedha	kļneumedhar
kļneudhwe	kļéwedhwe	kļnwīdhwe	kļneudhwe	kļneudhwer
kļnéwŋtoi	kļéwontoi	kļnwīnto	kļnéwŋto	kļnéwŋtor

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. *āsma*, *āsta*, *āsan*, 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. ἔ-κλυον, O.Ind. *sruvam*.**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.	kl<u>u</u>wa	kl<u>u</u>wā	kl<u>w</u>īma
	kl<u>u</u>weso	kl<u>u</u>wēso	kl<u>w</u>īso
	kl<u>u</u>weto	kl<u>u</u>wēto	kl<u>w</u>īto
Pl.	kl<u>u</u>womesdha	kl<u>u</u>wōmedha	kl<u>w</u>īmedha
	kl<u>u</u>wedhwe	kl<u>u</u>wēdhwe	kl<u>w</u>īdhwe
	kl<u>u</u>wonto	kl<u>u</u>wōnto	kl<u>w</u>īnto

stātum, to stand (Aorist Stem *stā-*)

	<i>Indicative</i>	<i>Subjunctive</i>	<i>Optative</i>
Sg.	stāma	staja	stāīma
	stāso	stājeso	stāīso
	stāto	stājeto	stāīto
Pl.	stāmedha	stājomedha	stāīmedha
	stādhwe	stājedhwe	stāīdhwe
	stānto	stājonto	stāīnto

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.	kékl<u>o</u>wa	kékl<u>o</u>wō	keklujém	kek<u>l</u>oum	kékl<u>o</u>uma
	kékl<u>o</u>utha	kékl<u>o</u>wes	keklujés	kek<u>l</u>ous	kékl<u>o</u>uso
	kékl<u>o</u>we	kékl<u>o</u>wet	keklujét	kek<u>l</u>out	kékl<u>o</u>uto
Pl.	keklu<u>m</u>é	kékl<u>o</u>womo	keklu<u>w</u>īme	kékl<u>o</u>ume	kékl<u>o</u>umedha
	keklu<u>t</u>é	kékl<u>o</u>wete	keklu<u>w</u>īte	kékl<u>o</u>ute	kékl<u>o</u>udhwe
	keklu<u>w</u>ér	kékl<u>o</u>wont	keklu<u>w</u>īnt	kek<u>l</u>ount	kékl<u>o</u>wŋto

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. ἕστηκα, ἕσταμεν, ἕσταώς.

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.	stāsājō	stāsajom
	stásjesi	stāsjes
	stásjeti	stāsjet
Pl.	stásjomos	stásjomo
	stásjete	stásjete
	stásjonti	stásjont

7.8.3. OTHER COMMON PIE STEMS

I. THEMATIC VERBS

1. Root:

- Present **lowō**, *I wash*, Aorist (é)**lousm̄**, Perfect **lélowa**.
- Present **serpō**, *I crawl*, Aorist (é)**s̄rpom**.
- 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)**t̄rmom**.

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)**ḡnom**/(é)**genom**, Perfect **gégona**, P.Part. **ḡntós** (cf. O.Ind. *jatá*, Lat. *nātus*).

NOTE. For **ḡntós**, 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)**speksm̄**, P.Part. **spektós**.
- Present **tenjō**, *I stretch*, Aorist (é)**t̄nom**/(é)**tenóm**, Perfect **tétona**, P.Part. **t̄ntós**.

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**).

7. Verbs

- 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 **gn̥n-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 ζυγῆναι; O.Ind. *yunákti* (3. Pl. *yuñjānti* = Lat. *jungunt*), *yuñjati*, 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 **eimi**, *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)**dēiksm̥**, 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 **jjjēmi**, *throw*, Aorist (é)**jem**.

NOTE. For evidence on an original PIE **jjjēmi**, and not ***jjjāmi** 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)**pēwsm̥**.

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/ṅ**.

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. *ni*. 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 loosing 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*, **ṛdhi**, *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** (<*-th_{2iti-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 **idānim*, 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. Particles

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)/ἡ, *in*. Cf. Goth. *in*, Lat. *in*, Gk. *en*, *ení*, O.Ind. *ni*, *nis*, Lith. *in*, O.C.S. *on*, *vũ*.

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*.

ἡdhi, *more, over, ἡdher(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. *ḫairh*, O.S. *thuru*, O.E. *ḫurh*, 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>	p̄ra , <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>	p̄ros , <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>	s̄ni/s̄nteri , <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*.