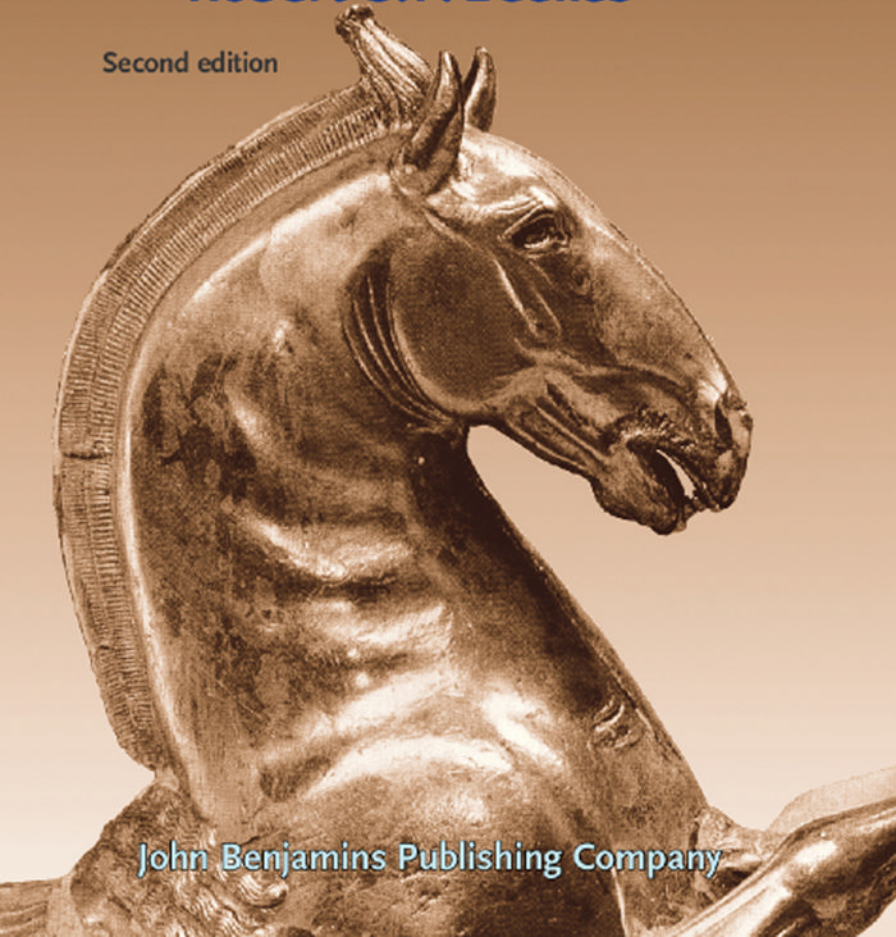
Comparative Indo-European Linguistics

An Introduction

Robert S.P. Beekes

Second edition



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Chapter 18

The Verb

18.1 General

18.1.1 Introduction

The verb is much more complicated than the noun. It is difficult to reconstruct its forms, because the verb system differs greatly among the individual languages. Much is still unclear. We shall therefore be less extensive here than we were when dealing with the noun.

The first question is which categories the PIE verb had. That is not immediately clear. In order to see how different the languages are from each other, we may compare the number of verbal categories found in Sanskrit with those of Gothic and Hittite. The categories of Sanskrit are given in parentheses; the categories in italics are also found in Gothic; Hittite is as Gothic, but with a middle instead of the passive, and without the optative:

	Skt.	Goth.	Hitt.	
voice	3	2	2	(*active*, *passive*, middle)
tense	6	2	2	(*pres.*, imf., fut., *aor.*, *pf.*, ppf.)
mood	5	3	2	(*ind.*, inj., sub., *opt.*, *imp.*)

The question of what the original system was, must — as always — be solved by looking at the traces of archaic forms. For instance, Latin has a subjunctive and no optative, but the subjunctive of 'to be', viz. *sim*, *sīs*, *sit*, etc., would seem to be an old optative, judging by its form: *-ī-* < *-ih$_1$-* is the hallmark of the optative. In this way the following categories were long ago inferred for PIE:

voice: active, middle
tense: present (with imperfect); aorist; perfect (perhaps with pluperfect)
mood: indicative, injunctive, subjunctive, optative, imperative

This system is close, then, to that of Sanskrit (and Greek). But the PIE age of this system has been cast into doubt since Hittite became known. This oldest known Indo-European language had a much simpler verb system (see above), and it reveals no trace of the extra categories found in Sanskrit and Greek. This simplicity may well be the result of a process of simplification, but what was the original situation? If we

adopt the Indo-Hittite hypothesis, the PIE origins of the Anatolian system were not necessarily the same as those of the other IE languages (see Section 2.4).

PIE had no passive. It is absolutely clear that the passive only came into being when the individual languages developed as such. The middle indicates that the subject is closely involved in the action: Skt. *yájate*, Gr. *thúetai* 'he sacrifices for himself'.

PIE also had no future tense. The future forms in the individual languages differ greatly from each other. That may seem strange, but it is quite possible to do without a future ('I go tomorrow to …'). Gothic, for example, had no future tense.

There were primary and secondary endings (for example prim. *-ti*, sec. *-t*). The primary endings were used in the indicative of the present tense, the secondary ones were used in the indicative of the past tense, in the optative and in the imperative, insofar as the latter had no specific endings of its own.

The indicative of the past tense could be further indicated by the augment (Section 18.1.2). The same forms without the augment were called the injunctive (Section 18.8.2).

Verbs had either a thematic or an athematic inflection. In the first case, one finds a suffix *-e-* or *-o-* before the ending, for example thematic Gr. *phér-o-men* 'we carry' as opposed to athematic *pha-mén* 'we say'.

After dealing with the individual categories, we shall present an overview of the system as a whole (Section 18.10). It will then appear that the PIE system was not merely the sum total of the individual categories as found in Greek and Sanskrit, but was instead based on a completely different system.

18.1.2 The augment

In PIE, the indicative of the past tense could be indicated by the so-called augment ('increase'), $*h_1e$-, that was added before the root (and also before a possible reduplication syllable): Skt. *á-bharam*, Gr. *é-pheron*, Arm. *e-ber*.

The augment attracted the accent: Skt. inj. *bhinát* 'he split': imf. *ábhinat*. Except for the languages mentioned (and Iranian), the augment is also preserved in Phrygian (*edaes* 'he put'). In Armenian the augment is only retained in forms which otherwise would be monosyllabic: 1 sg. *lk'i*, 2 sg. *lk'er*, 3 sg. *elik'* 'I left', etc.

Probably the augment was in origin an independent particle that meant something like 'then, at that time'.

In PIE, the augment was not contracted with a following vowel, because each root began with a consonant. Of course, in the individual languages such sequences do get contracted: Skt. *ā́jat*, Gr. *ẽge* 'he led' < $*h_1e$-$h_2eǵet$; OAv. *as* 'he was' (for $*ās$) was still disyllabic, /*aʔas*/ < $*h_1e$-h_1est.

Another source for a long vowel in the daughter languages was the combination of the augment with a following laryngeal which itself was followed by a consonant:

Gr. *élυthe* 'he came' < *h_1e-$h_1$lud^h-et*, compare without augment OIr. *luid* 'he went' < *$h_1$lud^h-et*.

To sum up, the augment was used in the indicative of the imperfect and the aorist. See the section on the injunctive (18.8.2) for forms without the augment.

18.1.3 Reduplication

Insofar as the form is concerned, two kinds of reduplication can be distinguished. The first kind repeats only the first consonant (sometimes the first two), while the other kind repeats the root, although not always completely. The former is sometimes found in the present and the aorist and often in the perfect, the latter with intensives and iteratives (verbs which express a repeated action).

The 'normal' reduplication repeats the first consonant, after which an *e* or an *i* is added. If the word began with **sC-* or **HC-* both of these consonants were repeated. Compare:

**dé-dorḱ-e* 'he has seen': Skt. *dadárśa*, Gr. *dédorke*
**ste-stoud-e* 'he has bumped': Goth. *staí-staut* (*-aí-* [ɛ], generalized from **e* before *h, hw* and *r*, where **e* became *-aí-*)
**sti-st(e)h_2-* 'stand': Skt. *tíṣṭhati*, Gr. *hístēmi* (< **si-st-*), Lat. *si-st-ō*, pf. *ste-t-ī*
**$h_1$le-$h_1$loudh-e* 'he has come': Gr. *elélouthe* (in Greek this was called the Attic reduplication; incorrectly, because it is found in all of the dialects)
**h_2e-$h_2$noḱ-e* 'he has reached': Skt. *ā́nāśa*, OIr. *t-ánaicc* (*t-* < *to-*) has replaced **$h_2$ne-$h_2$noḱ-e*
**h_3i-$h_3$er-ti* 'he sets into motion': Skt. *íyarti*

In some languages the vowel is made identical with that of the root: Lat. *cucurrī* 'I ran', *momordī* 'I bit', Skt. *yuyója*, pl. *yuyujmá* from **(H)i(e)ug-* 'to yoke', OIr. *-cúala* 'to hear' < **kú-klou-*. This system was not inherited from PIE.

It is disputed when **e* and when **i* were used in the reduplication syllable. Skt. *dádāmi*, Gr. *dídōmi* 'to give' perhaps suggest that both forms appeared in the same paradigm. It has been proposed that **i* was the unaccented variant of **e* before double consonant (of which the first was an occlusive), for example:

**d^{h}é-d^hh_1-nti* Skt. *dádhati* 'they set'
**d^{h}i-d^hh_1-mé* Gr. *títhemen* 'we set'

Intensive verbs, which express a repeated action, reduplicated (almost) the entire root. The main exception was a root-final occlusive, which was not repeated. The principle was: *CeR-CeR(T)-*. For example:

**ver-v(e)rt* — 'to turn': Skt. *várvarti*
**dei-diḱ-* 'to indicate': Skt. *de-diś-yá-te*, Gr. *dei-diskómenos* (< *-dik-sk-*) 'to greet'

Sanskrit has forms in which an *-i-* seems to be added after the reduplication, such as *gan-i-gm-at* 'coming'. This *i* is the reflex of a laryngeal at the beginning of the root, so PIE **HCeR-HCeR(T)-* > Skt. *CaRiCaR(T)-*.

18.2 The present

18.2.1 Stem formation

A present-tense stem can be formed in several ways, which is not the case with the aorist and the perfect tenses. We present a short overview of the possibilities; for PIE the 3 sg. in (athematic) **-ti* or (thematic) **-e* is given.

Often more than one present tense is derived from a root (along with a single aorist). Compare:

Gr. *mén-ō*, *mí-mn-ō* 'to remain'; Gr. *ékh-ō*, *ískh-ō* 'to hold' < **ségʰ-*, **si-sgʰ-*
PIE **gʷm-ié*, **gʷm-ské* 'to go': Gr. *baínō*, Lat. *veniō*; Skt. *gácchati*, Gr. *báskō*
PIE **ǵnh₃-ské*, **ǵn-n-eh₃-* 'to get to know': Lat. *nōscō*, Skt. *jānáti* (analogical for **jan-*)

a. Root Presents

The stem of root presents consists of a single root without suffixes. We distinguish the athematic type from the thematic type.

ATHEMATIC:

PIE **h₁és-ti* 'to be': Skt. *ásti*, OCS *jestъ*, OLith. *esti*, Hitt. *eszi*, Gr. *estí*, Lat. *est*, Goth. *ist*
PIE **ueḱ-ti* 'to wish': 1sg. Skt. *váś-mi*, Av. *vasə-mī*, Hitt. *uek-mi* (cf. Gr. *hekṓn* 'voluntary')
PIE **uemh₁-ti* 'to vomit': Skt. *vámi-ti*, Gr. *eméō*, Lat. *vomō*

In the last case the verb in Greek and Latin has become thematic. In most Indo-European languages, the athematic verbs have been largely replaced by those of the thematic type.

THEMATIC:

PIE **snéigʷʰ-e* 'it snows': Av. *snaēžaiti*, Lith. *sniẽga*, Gr. *neíphei*, Lat. *nīvit*, OHG *snīuuit*
PIE **uéǵʰ-e* 'to transport (by wagon)': Skt. *váhati*, OCS *vezǫ*, Gr. Pamph. *wekhō*, Lat. *vehō*, Goth. *ga-wigan* (G. *be-wegen*)

There are also present-tense forms with zero grade in the root:

PIE **tud-é* 'to bump': Skt. *tudáti*; to Goth. *stautan* (< **stoud-*), Lat. *tundō* (< **tu-n-d-*)

Often forms with full grade are found along with the above. The forms with zero grade seem to have an aorist meaning.

Root presents with an *o*-grade are frequent in Hittite but are found more rarely elsewhere. They often refer to continuous or repeated actions. They probably provided the basis for the PIE perfect (**uoid-* 'to know') and for the causatives with *o*-grade in the root (see c. below).

PIE **molh*$_2$- 'to mill': Hitt. *malla-*, *mall-* 'to mill, grind' (< **molh*$_2$-, **mlh*$_2$-), Lith. *malù*, Goth. *malan*

PIE **spond-* 'to libate': Hitt. *ispānt-, ispant-* 'to libate' (< **spond-*, **spnd-*), Lat. *spondeō* 'to pledge'; Gr. *spéndō* < **spend-*.

b. Reduplicated Presents

There was a small group of reduplicated root presents. They were athematic:

PIE **dé-deh*$_3$*-ti* 'to give': Skt. *dádāti*, Gr. *dídōmi*, Umbr. *dirsa* < **di-d-āt*; OCS *damъ*, Lith. *dúodu* < **do-dh*$_3$- with *-o-* in the place of *-e-*, as well as lengthening and an acute accent according to Winter-Kortlandt's law

PIE **ǵ*^{h}*e-ǵ*^{h}*eu-ti* 'to pour': Skt *juhómi*

PIE **si-sh*$_1$- 'to sow': Lat. *serō* (pf. *sē-vī* < **seh*$_1$-) became thematic

c. Suffix *-ei/i-*

There are several formations based on this suffix. The basic type had zero grade of the root and an ablauting athematic suffix **-éi-*, **-i-*.

PIE **tḱ-éi-*, **tḱ-i-* 'to build': Skt. 3sg. *kṣéti*, 3pl. *kṣiyánti* 'to dwell', Gr. Myc. *ki-ti-me-no /ktimenos/* 'cultivated'

PIE **mn-éi-*, **mn-i-* 'to think': Skt. *manyate*, OCS *mьnjǫ*, *mьnitъ* (inf. *mьněti*), Lith. *mìni* (inf. *minéti*), Gr. *maínomai* 'to rage' ('to be spiritually moved'), OIr. *do-moiniur*

Slavic *i* (which could have come from **iH* or **ei*) corresponds with Baltic *i* (that only can be **i*), which points toward **ei*/**i*. The circumflex accent confirms this. All languages have thematized this type, except for Balto-Slavic and Italo-Celtic (Lat. *capere* < **kap-i-* but *venīre* < **g*^{w}*em-je-* < PIE **g*^{w}*m-ie-*). Usually it is the zero grade **-i-* which has served as the basis:

PIE **spéḱ-ie* 'to see': Skt. *páśyati*, Av. *spasiiā*; Gr. *sképtomai* < **skepi̯e/o-* (with metathesis); Lat. *specere* < **speḱ-i-*

Until now we have seen primary derivatives, in which the verb is not derived from an existing verb or noun, but from a root. In the following examples we will be dealing with secondary derivatives, that is, derivatives from an existing verb or noun:

*-*ei-e-* is used to form causatives with *-*o-* in the root:
PIE **mon-éie* 'to warn' ('to cause to consider'): Lat. *moneō* (Skt. *mānáyati* has a different meaning)
PIE **uort-éie* 'to cause to turn': Skt. *vartáyati*, OCS *vratitъ*, Goth. *(fra)-wardeiþ* 'to cause to turn around'

*-*ei-e-* is also used to form non-causatives with zero grade in the root:

PIE **luk-éie* 'to shine': Skt. *rucáyati*
PIE **ǵʰuH-éie* 'to call': Skt. *hváyati*, Av. *zbaiia-* /zuʔaya-/

*-*ei-e-* also forms denominatives, that is to say, verbs derived from a noun:

PIE **uosn-éie* 'to buy, to sell': Skt. *vasnayáti*, Gr. *ōnéomai*, from Skt. *vasná-*, Gr. *ōnos* 'price'

Formerly, it was thought that the element **uosne-* continues the nominal stem, but *o*-stems have no stem form in *-*e*. It also appears that formerly Sanskrit had *-āyá-* (*aśvāyá-* 'to desire horses'). This can be based on *-*o-ie-*. The Sanskrit accent also seems to point in this direction.

*-*ie-* can be used in order to form intensives from verbs:

PIE **dei-di̯ḱ-i̯e* 'to display': Skt. *dediśyáte* (next to *dédiṣ-ṭe*)

*-*ie* was added after the suffix *-eh*$_1$-* (see point d below):

Lat. *taceō* 'to keep still' < *-ē-iō* < *-eh*$_1$*-ie/o-*

Finally, *-*ie* is used in the formation of many denominative verbs:

PIE **h*$_3$*n(e)h*$_3$*-mn-ie* 'to name': Hitt. *lamniya-*, Gr. *onomaínō* < *-mn̥-iō*, Goth. *namnjan*
Skt. *námas-* → *namasyáti* 'to honor'
Lat. *cūra* → *cūrō* < *-*ājō* 'to care'
Russ. *rabota* → *rabotaju* 'to work'

This formation is very productive, for which reason it is very difficult to determine which verbs are old.

d. Suffix *-eh*$_1$-
This suffix served to express a state or a position, compare Lat. *iaciō*, *-ere* 'to throw' next to *iaceō*, *-ēre* 'to lie'; Lith. *gul̃ti* 'to go lie down' next to *guléti* 'to lie'.

Balto-Slavic formed an intransitive aorist in this way: OCS *smrъd-ě-ti*, Lith. *smird-ė́-ti* 'to stink'. In Greek, the suffix also formed intransitive aorists: *man-ē-nai* 'to

rage', *khar-ē-nai* 'to be glad'. In Germanic it forms the third weak class of verbs: OHG *dagēn* (from *-*eh*$_1$-i̯e-*).

e. Suffix *-sk-*

This suffix is found in all languages, and is sometimes very productive. It always had thematic inflection and the zero grade of the root:

PIE **g*^{w}*m-ské* 'to go': Skt. *gácchati* (with shifted accent), Av. *jasaiti*, Gr. *báskō*
PIE **prḱ-ské* 'to ask': Skt. *pr̥ccháti*, Av. *pərəsaiti*, Arm. *harc'i*, Lat. *poscō* < **pork-skō* < **prḱ-*, OIr. *arco*, OHG *forscōn*, G. *forschen*

The oldest meaning is difficult to ascertain. In Latin it especially makes inchoatives, that is, verbs which indicate the beginning of an action (*rubē-scō* 'to become red'), in Tocharian causatives, while in Hittite it is used for imperfectives: *daskezzi* 'to start taking; to repeatedly take; to take one by one'.

f. Suffix *-s-*

A present-tense suffix **-(e)s-* is found petrified, for example in:

PIE **ḱleu-s*: Skt. *śró-ṣ-ati* 'to be obedient'
PIE **h*$_2$*ǵ-es-*: Lat. *gerō* 'to carry', cf. *agō* < **h*$_2$*eǵ-*
PIE **h*$_2$*ueg-s-* 'to grow': Gr. *aéksō*, cf. Lat. *augeō* < **h*$_2$*eug-*

Probably the suffix was originally athematic, with an ablaut **-es-*/**-s-* and zero grade of the root: 3sg. **CC-és-ti*, 3pl. **CC-s-énti*. The suffix is used to build futures or subjunctives in a number of languages, for example in Gr. *leíp-s-ō* 'I shall leave', Lith. *bùs* 'will be', Lat. *ēmerō* 'I will have bought' (**ēm-es-*), Umbr. *ferest* 'will bring', OIr. subj. *-bé* (< **-bwest*) 'be'. The Sanskrit future suffix *-sya-*, as in *vak-ṣ-yáti* 'he shall speak', is a *-ie/o-* derivative of an *s*-present.

Together with reduplication (indicating repetition) the suffix **-s-* also makes desideratives:

PIE **di-drḱ-(é)s-*, **dé-drḱ-s-*: Skt. *díd*$_{\text{̥}}$*rkṣati* 'to desire to see'

On the model of the roots which ended in a laryngeal, of the type *CeRH-*, all Sanskrit roots in a sonant introduced **-Hs-*: *cí-kīr-ṣ-ati* < **k*^{w}*rHs-* to the Skt. root *kr̥* 'to make' < PIE **k*^{w}*r-*; the PIE root did not have a variant in **-Hs-*.

g. Other Suffixes

There are traces of other suffixes. Thus, we find **-d*^{h}*-* in Gr. *plḗthō* 'to fill' (cf. *é-plē-to* 'it was filled'). Gr. *é-skh-eth-on* 'I had, held back' (cf. *é-skh-on* 'I held') seems to point to a variant **-ed*^{h}*-*.

A *k*-suffix of uncertain origin is found in Lat. *fa-c-iō* 'to do' (*fa-* < *$d^{h}h_{1}$-, the root of Gr. *tí-thē-mi*), Phryg. *ad-daket* 'he (shall?) do' (*da-* < *$d^{h}eh_{1}$-); Gr. *olékō* ('to destroy'), cf. aor. *óle-s-a*.

h. Nasal Presents

These are presents with an *-*n*- in the root. The *-*n*- is always found before the last consonant of the root, for example **leik*^{w}-, pres. **li-n-k*^{w}; there is an ablaut form with **e* before the last consonant: **li-n-ek*^{w}-. Verb forms of which the final consonant was an occlusive or *s* have usually been thematized. They only remained athematic in Indo-Iranian and Hittite. In Hittite the infix was transformed to *-nin-*: *har-nin-k-anzi* 'they destroy'.

PIE **li-n-ék*^{w}*-ti* 'to let': Skt. *riṇákti*, OPr. *po-līnka*, Lat. *linquō*
PIE **ku-n-és-ti* 'to kiss': Gr. *kunéō*, cf. OHG *kussen*, Hitt. 3 pl. *kuwassanzi*
PIE **dm-n-éh*$_{2}$*-ti* 'to subdue': Gr. *dámnēsi*, OIr. *damnaid*
PIE **h*$_{3}$*r-n-éu-ti* 'to set into motion': Skt. *r̥ṇóti*, Hitt. *arnuzi*, Gr. *órnūmi*

From verbs ending in *-*u* a novel suffix *-*neu*- was abstracted (Gr. *deík-nū-mi*, cf. Lat. *dīcō* < **deiḱ*-). In the same way the suffix *-*neh*$_{2}$- > *-nā*- arose from roots ending in *-*h*$_{2}$. If the suffix *-*nh*$_{2}$- was thematized, the laryngeal disappeared (Gr. *kámnō* 'to become tired' < **ḱm-n-h*$_{2}$-) or a sequence *-an*- developed (Gr. *khand-án-ō* 'to pick up' from **ǵ*^{h}*nd-n̥-h*$_{2}$-). A complete paradigm of the nasal present in Sanskrit and PIE is given at the end of the chapter, in 18.11.

18.2.2 Personal endings

The present and the aorist have the same endings; we shall therefore treat them together.

We already saw (Section 18.1.1) that there was a distinction between primary and secondary endings. The former were used in the indicative present, and the latter in the indicative of the imperfect and the aorist, and in the optative. The imperative had special endings, or the secondary endings. For the subjunctive see Section 18.8.3.

It has also been pointed out that there was an athematic and a thematic inflection. The primary endings of these two systems were totally different, while the secondary endings were identical.

a. The Athematic Endings (of the Present and Aorist)

PIE	Skt.	OCS	Lith.	Hitt.	Gr.	Lat.	Goth.
			PRIMARY				
*-*mi*	-*mi*	-*mъ*	-*mi*	-*mi*	-*mi*	-*m*	-*m*
*-*si*	-*si*	-*si*	-*si*	-*si*	-*si*	-*s*	-*s*
*-*ti*	-*ti*	-*tъ*	-*ti*	-*zi*	-*ti*	-*t*	-*t*
*-*mes*	-*mas*(*i*)	-*mъ*	-*me*	-*ueni*	-*men*/*s*	-*mus*	-*m*
*-*th*$_1$*e*	-*tha*	-*te*	-*te*	-*tteni*	-*te*	-*tis*	-*þ*
*-*enti*	-*anti*	-*ętъ*	-	-*anzi*	-*nti*	-*nt*	-*nd*
			SECONDARY				
*-*m*	-*m*	-*ъ*	-	-*nun*	-*n*	-*m*	(-*u*)
*-*s*	-*s*	-	-	-*s*	-*s*	-*s*	-*s*
*-*t*	-*t*	-	-	-*t*	-	-*d*	-
*-*me*	-*ma*	-*mъ*	-	-*uen*	-*men*/*s*	-*mus*	-*ma*
*-*te*	-*ta*	-*te*	-	-*tten*	-*te*	-*tis*	-*þ*
*-*ent*	-*an*	-*ę*	-	-*er*	-*n*	-*nt*	-*na*

Singular. It is easy to see that the PIE forms were: primary 1 *-*mi*, 2 *-*si*, 3 *-*ti*, secondary 1 *-*m*, 2 *-*s*, 3 *-*t*. Hitt. -*zi* < -*ti*. Slav. -*si* is a contamination of *-*si* > -*sъ* with the thematic ending. The absence of -*i* in Latin is probably analogical (3 sg. OLat. -*d* was later replaced by -*t*.)

Plural. The 3 pl. had *-(*e*)*nti*, *-(*e*)*nt*. — The 1 pl. is problematic. Skt. -*mas*: -*ma* must be old and points toward *-*mes* : *-*me*. We also find -*n* (Hitt., Gr.; originally perhaps -*m*) and *-*o*- (Lat. *-*mos*); OCS -*mъ* < *-*mom*; Greek had -*men* in the eastern dialects, -*mes* in the western dialects. The forms in the Slavic languages have led to the assumption that the thematic endings were *-(*o*)*mom*, sec. *-(*o*)*mo* (*-*ome*?). All the forms can be explained on the basis of this system. (Hitt. *u*- is perhaps derived from the dual.) — 2 pl. Skt. -*tha* must have had *-*tH*-; as there is no indication for another vowel than *e, the ending must have been *-*th*$_1$*e*; sec. *-*te*.

Dual. All dual endings are dealt with together in Section 18.6

b. The Thematic Endings

PIE	Av. (Skt.)	OCS	Lith.	Gr.	Lat.	OIr.	Goth.
			PRIMARY				
	spasii-	*vez-*	*vež-*	*phér-*	*veh-*		*bair-*
**-oH*	*-ā(mi)*	*-ǫ*	*-ù*	*-ō*	*-ō*	*biru*	*-a*
**-eh$_1$i*	*(-asi)*	*-eši*	*-ì*	*-eis*	*-is*	*biri*	*-is*
**-e*	*(-ati)*	*-etъ*	*-a*	*-ei*	*-it*	*berid*	*-iþ*
**-omom*	*(-āmas)*	*-emъ*	*-ame*	*-omen/s*	*-imus*	*bermai*	*-am*
**-eth$_1$e*	*(-atha)*	*-ete*	*-ate*	*-ete*	*-itis*	*beirthe*	*-iþ*
**-o*	*(-anti)*	*-ǫtъ*	*-a*	*-ousi*	*-unt*	*berait*	*-and*
			SECONDARY				
**-om*	*(-am)*	*-ъ*		*-on*			*-(a)u*
**-es*	*(-as)*	*-e*		*-es*			*-(ai)s*
**-et*	*(-at)*	*-e*		*-e*			*-(ai)*
**-omo/e*	*(-āma)*	*-omъ*		*-omen/s*			*-(ai)ma*
**-ete*	*(-ata)*	*-ete*		*-ete*			*-(ai)þ*
**-ont*	*(-an)*	*-ǫ*		*-on*			*-(ai)na*

Primary. Lithuanian and Greek display the clearest indications for this inflection. 1 sg. All languages point toward **ō* (except for OCS), while Lithuanian requires **-oH* (which gave acute **-ū*, which was shortened to *-ù* according to Leskien's law, see 11.9.4). — 2 sg. Compared with Lithuanian (*-ì* < **-íe*), Greek has added *-s* (from the athematic inflection), whereas the acute of Lithuanian points toward a laryngeal, that is to say, **-eh$_1$i*. We already saw that Slav. *-ši* contained this ending. — 3 sg. In Balto-Slavic, Old Russian *-e* has **-e*, to which OCS has added the particle *-tъ*. Greek has added **-i* as a characteristic of the primary ending; Greek and Slavic thus point to original *-e*; in Baltic, this became *-a* after *i̯-*. — 1 pl. For the ending **-mom*, see the athematic inflection. The preceding vowel was **-o-*, which Slavic replaced with **-e-*. Indo-Iranian *-ā-* confirms the **-o-* (according to Brugmann's law). — 2 pl. has **-e-*, probably with **-th$_1$e*. — 3 pl. The classical reconstruction is **-onti* (Gr. *-ousi* /*-ōsi*/ < **-onsi* < **-onti*). But the ending **-nti* belongs to the athematic inflection, and since **-mi*, **-si* and **-ti* are not thematic endings, it is doubtful that **-nti* would belong here. Lith. points toward **-o*. This ending must be an old one, because **-onti* is not likely to have disappeared. Tocharian A has *-eñc* < **-onti*, but older forms have *-e* < **-o*; Tocharian B has *-eṃ* from **-o* + particle (thus not from **-onti*). Slavic, Latin and Old Irish could also point to **-o*, but examining this more closely would be going too far here. It is easily understandable that some languages added **-nti* at a later stage.

Secondary. As has been said, the secondary endings are identical with the athematic ones, the thematic vowel excepted. The Gothic endings are those of the optative (suffix *-ai-*). 1, 3 pl *-ma*, *-na* (and 1 du. *-wa*) point to **-ē*, which is not well explained.

In Hittite the presents which correspond to thematic verbs elsewhere have athematic endings, either of the *mi*-class or of the *hi*-class (see 18.4.2).

18.2.3 Inflection

The athematic inflection displays ablaut, whereby the singular has full grade with stress on the root, and the plural has zero grade of the root with the stress on the ending:

PIE	**Skt.**	**Hitt.**	**Gr.**
**h*$_1$*éi -mi* 'I go'	*é -mi*	*epmi*	*eīmi*
-si	*-ṣi*	*epsi*	*eī*
-ti	*-ti*	*epzi*	*eīsi*
**h*$_1$*i -més*	*i -más*(*i*)	*appueni*	*ímen*
-th$_1$*é*	*-thá*	*apteni*	*íte*
-énti	*y -ánti*	*appanzi*	*íāsi*

Next to *epp-* 'to take' < **h*$_1$*ep-*, Hittite has the zero grade *app-* < **h*$_1$*p-* in the plural forms. Gr. 3 pl. *-āsi* is an innovation; Mycenaean still has */-esi/-ensi/* < **-enti*. Note that Greek verb forms always retract the stress as far as possible [cf. 11.9.3]. With a few exceptions, Greek verbal stress does not continue the PIE accent.

We cannot discuss the peculiarities of all verb types here. For the nasal presents see the paradigm at the end of this chapter. The following is the original inflection of reduplicated verbs:

PIE 123 sg.	**b*^{h}*é-b*^{h}*er-mi*, *-si*, *-ti*	Skt.	*bí-bhar-mi*, *-ṣi*, *-ti*
12 pl.	**b*^{h}*i-b*^{h}*r-més*, *-th*$_1$*é*		*bi-bhṛ-más*, *-thá*
3 pl.	**b*^{h}*é-b*^{h}*r-nti*		*bí-bhr-ati*

A tentative explanation for the *i*-vocalism of the reduplication syllable has been given in Section 18.1.3. Note that the 3 pl. deviates from the normal type, as we find that the ending **-enti* was reduced to **-nti*. This points to a static inflection, on which see Section 18.7. Static inflection is also found in the 3pl. of the optative (18.8.4).

The thematic inflection had no ablaut. Examples are given in Section 18.2.2.

Exercise 54
State for the following verb forms the kind of stem formation (which suffix it contains, whether it is thematic or athematic), the presence of the augment, the person, number (1–3 sg./pl.) and whether the endings are of the primary or secondary type:

a. **spekʷiomom*
b. **bʰéh₂ti*
c. **h₁ésish₁ent*
d. **monéieh₁i*
e. **kh₂p-s-th₁é*
f. **h₁élinkʷm*
g. **umh₁énti*
h. **ǵnh₃skéte*
i. **didh₃més*
j. **uérurǵ-iont*

Exercise 55
Reconstruct the required verb forms to the following roots, here in given in the zero grade:

a.	**ugʰ-* 'convey'	causative pres.	3sg. impf.
b.	**klh₂-* 'break'	nasal pres.	3pl. pres.
c.	**likʷ-* 'to stay behind'	*s*-pres.	2sg. pres.
d.	**gʷm-* 'to come'	*ie*-pres.	2pl. inj.

18.3 The aorist

18.3.1 Stem formation

There were three kinds of aorist: the root aorist, the thematic aorist and the *s*- (or sigmatic) aorist. On the aorist with suffix **-eh₁-* see 18.2.1, d.

a. The root aorist
This consisted of a root, without suffix, plus endings. In Indo-Iranian this aorist is still frequently found, in Greek and Armenian a small number of such aorists remain, but elsewhere they have disappeared.

**h₁é-dʰeh₁-t* 'to put': Skt. *á-dhā-t*, Arm. *ed*, Gr. 1 pl. *é-the-men*
**h₁é-klеu-t* 'to hear': Skt. *áśrot*, Gr. imp. *klũ-thi* (long *u* is analogical)
**h₁é-pleh₁-t*, **plh₁-* 'to fill': Skt. *áprāt*, imp. *pūr-dhi*, Gr. *plẽ-to*
**h₁é-drḱ-* 'to see': Skt. *ádr̥śma*

b. The Thematic Aorist
This was formed by the root in zero grade with thematic inflection. There are only a few examples which may go back to PIE. Still, the formation is an old one.

h_1é-uid-et 'to see': Skt. *ávidat*, Gr. *eīde*
h_1é-$h_1$lud^h-et 'to come': Gr. *élυthe*, OIr. *luid*

A number of attested thematic aorists represent later thematizations of athematic aorists, for example Gr. *édrakon* 'I saw', *ékluon* 'I heard' (cf. the preceding), Skt. 2 sg. *á-kar-as* 'you made' for older *á-kar* < **a-kar-s*.

c. The *s*- (sigmatic) Aorist
This aorist was formed with an **s* after the root, which had a lengthened grade (in the indicative active) or full grade (elsewhere). In Greek we never find a lengthened grade; perhaps it has disappeared through regular sound development (**dēiḱ*- > **deik*-, Osthoff's law). The *s*-aorist is found in Indo-Iranian, Greek and Slavic; in Latin some of these forms have been adopted in the perfect tense.

h_1é-uēǧ^h-s- 'to carry': Skt. *ávākṣ-am*, OCS *vĕs-ъ*, Lat. *vēx-ī*
h_1é-dēiḱ-s- 'to indicate': Av. *dāiš*, Gr. *é-deiks-a*, Lat. *dīx-ī*

18.3.2 Personal endings

The endings are the same as the secondary endings of the present tense, which were discussed in Section 18.2.2. See also the next section on 'inflection'.

18.3.3 Inflection

The athematic aorist has the same ablaut as the athematic present (full grade in the singular, zero grade in the plural):

	Skt.		Gr.	
h_1é-steh$_2$-m	*ákar-am*	*ásthā-m*	*ébē-n*	*éthēk-a*
-s	*ákar*	*-s*	*-s*	*-as*
-t	*ákar*	*-t*	-	*-e*
h_1é-sth$_2$-me	*-ma*	*-ma*	*-men*	*éthe-men*
-te	*-ta*	*-ta*	*-te*	*-te*
-nt		*ásth-ur*	*éb(ēs)an*	*-(s)an*
**sth$_2$-ént*	*ákr-an*			

Sanskrit. In 1 and 2 pl. the full grade of the root has been introduced. 3 pl. *-ur* (the perfect ending) has replaced (Av.) *-at* < **-nt*. The ending *-an* reflects **-ent*. It is thought

that the augmented forms had the zero grade, while the form without augment (the injunctive) had the full grade of the ending. For instance, in the middle we find *ákrata* < **h*$_1$*é-k*^{w}*r-nto* as opposed to *kránta* < **k*^{w}*r-énto*.

Greek. In *ébēn* the full grade has been generalized, but the zero grade appears from *éban* (< **h*$_1$*é-g*^{w}*h*$_2$*-*(*e*)*nt*) and from 3 du. *bátēn* < **g*^{w}*h*$_2$*-*. In *éthēka* the ablaut is preserved (*éthemen* < **-d*^{h}*h*$_1$*-*), but in the singular a **-k-* has been added. The 3 pl. *éban* and *éthean* are the oldest forms. The latter must have replaced **éthat* < **h*$_1$*é-d*^{h}*h*$_1$*-nt*.

The thematic aorist is inflected in exactly the same way as the thematic imperfect; see further 18.2.2, point b.

The *s*-aorist is conjugated as follows (Skt. *ji-* 'to conquer'; Gr. *deik-* 'to display'; OCS *ved-* 'to transport', *děla-* 'to do'):

	Skt.	**Gr.**	**OCS**	**OCS**
**-s-m*	*ájaiṣam*	*édeiksa*	*věsъ*	*dělaxъ*
-s	*ájais*	*édeiksas*	(*vede*)	*děla*
-t	*ájais*	*édeikse*	(*vede*)	*děla*
-me	*ájaiṣma*	*edeíksamen*	*věsomъ*	*dělaxomъ*
-te	*ájaiṣta*	*edeíksate*	*věste*	*dělaste*
-nt	*ájaiṣur*	*édeiksan*	*věsę*	*dělašę*

Sanskrit. In 2 and 3 sg. the endings *-s* and *-t* were lost by regular sound law. At a later stage, the endings *-īs*, *-īt* (< **-H-s*, **-H-t*) were adopted from roots ending in laryngeal. 3 pl. *-ur* is the ending of the perfect. Avestan still has *-aṯ* < **-n̥t*.

Greek. 1 sg. *-a* < *-m̥*. 2 sg. is 1 sg. + *-s*; 3 sg. *-e* was taken from the perfect; 1 and 2 pl. have *-a-* from 3 pl. The 3 pl. ending *-n̥t* gave *-a*[*t*] > *-a*, to which *-n* (from **-nt* after a vowel) was added.

Slavic. 1 sg. *-ъ* < *-om* (thematic), *dělaxъ* has *x* < *s* from forms where the *s* occurred after *i*, *u*, *r* or *k*. 2 and 3 sg. *vede* are no *s*-aorist forms (which would have been **uēd-s-s*/*t* > **vē*). *děla* < *-ās*, *-āst*. 1 pl. also has acquired the thematic vowel *-o-*. 3 pl. *-ę* < **-n̥t*.

The *s*-aorist had the lengthened grade of the root in all of the indicative, and a full grade everywhere else. This can be explained by the fact that the stress always remained on the root (which means that it had a static inflection, cf. Section 18.7), and because the vowel was lengthened in PIE monosyllables. In the Rigveda we can still see that in the injunctive, that is, the forms without augment, the monosyllabic forms (2 and 3 sg. **dēiḱ*, **dēiḱst*) have lengthened vowels, while the others do not. In the indicative, the lengthened vowel became generalized.

18.4 The perfect

18.4.1 Stem formation

The perfect tense had no suffix. It often, but not always, had reduplication. Indo-Iranian and Greek almost always have reduplication; a notable exception is **uoid-h*$_2$*e* 'I know'. Latin often has no reduplication, Germanic seldom.

The PIE perfect tense had an accented **-ó-* in the root in the singular, and a zero grade in the plural. See further under inflection.

18.4.2 Personal endings

Singular. The reconstruction of the endings is primarily based on Sanskrit and Greek. At first glance, they point toward **-a*, **-t(h)a*, **-e* for 1, 2 and 3 sg. The **-a* must reflect **-h*$_2$*e*. The laryngeal is still visible in Hittite *h*. Luwian has *-ha*; Hitt. *-un* comes from elsewhere. **-th*$_2$*e* also explains the aspiration of Sanskrit (**uoid-ta* > Gr. **oista*; the *th* of Greek is unclear). 1 sg. **-h*$_2$*e* versus 3 sg. **-e* is confirmed by Skt. *jagáma* : *jagā́ma*; in 3 sg. **-g*^{w}*ome* the *o* became *ā* according to Brugmann's law, whereas in 1 sg. **-g*^{w}*omh*$_2$*e* this is not the case (see Section 11.6.2). Roots ending in a laryngeal have 3 sg. *-au* in Sanskrit, for example *dadáu*, of which the explanation is still uncertain.

PIE	Skt.	OCS	Toch. B	Hitt.	Hitt
**uóid-h*$_2$*e*	*véda*	*vědě*	*kautāwa*	(*ār-hhi*)	*ār-hhun*
-th$_2$*e*	*véttha*	*věsi*	*kautāsta*	(*-tti*)	*-tta*
-e	*véda*	*věstъ*	*kauta*	(*-i*)	*-s*
**uid-mé*	*vidmá*	*věmъ*	*kautām*(*o*)	(*ar-ueni*)	*ar-uen*
-(*h*$_1$)*é*	*vidá*	*věste*	*kautās*(*o*)	(*-tteni*)	*-tten*
-r/*ēr*	*vidúr*	*vědętъ*	*kautāre*	(*-anzi*)	*-er*

	Gr.	Lat.	OIr.	Goth.
	oīda	*vīdī*	*-cechan*	*wait*
	oīstha	*vīdistī*	*-cechan*	*waist*
	oīde	*vīdit*	*-cechain*	*wait*
	ídmen	*vīdimus*	*-cechnammar*	*witum*
	íste	*vīdistis*	*-cechnid*	*wituþ*
	ísāsi	*vīdēre*, *-ĕrunt*	*-cechnatar*	*witun*

Plural. 2 pl. was **-e* judging by Sanskrit. Everywhere else the form is identical to that of the present (**-te*), thus **-e* (**-h*$_1$*e*?) must be old. — The 3 pl. is more problematic.

The forms with *-t-* (Gr. *-āsi* < **-a-nti*) must be those of the present tense, therefore those with *-r-* must be old. Phrygian also has a form with *-r-*, *dakar*(*en*) 'they have made' (cf. Lat. *fēcēre*). Skt. *-ur* reflects **-r̥s*, which is confirmed by OAv. *cikōitərəš*; the origin of the *-s* is unclear. Avestan has *-arə* elsewhere (*vīδarə*), which is based on **-r̥*. Lat. *-ēre* (clearly < **-ēr-i*), *-ērunt* (a contamination of *-ēre* and *-erunt*, of which the explanation is unclear) point toward **-ēr*. Av. middle *å̊ŋhāirē* 'they sit' (< **ās-ār-ai*) may also point to **-ēr*. In this way we arrive at **-r̥* and **-ēr*. The origin of this vacillation may lie in a reduplicated form (e.g., **g*^{w}*é-g*^{w}*m-r* 'they have come') as opposed to an unreduplicated one (e.g., (**uid-ḗr* 'they see'), or in static as opposed to mobile inflection (see Section 18.7).

OCS has *vědě* < **-a-i*, with an added **-i*; the other endings are those of the present. Latin also has *-i* added to all of its singular endings and to the 3 pl. In 2 sg. and pl. the element *-is-* is unclear. The palatal *n* of OIr. 3 sg. *-cechain* points toward **-e*; in 1 sg. *-cechan* the ending was not **-e*. The OIr. 1 pl. was transformed after the 3 pl. The 3 pl. has *-t-* from the *t*-preterit. Goth. 3 pl. *-un* < **-n̥t*; the *-u-* was transferred from there to the other persons.

Hittite only has a present tense and a preterit (just as Gothic; thus not an imperfect *and* a preterit / perfect; there is also no aorist). There are two types of present: one ending in (1 sg.) *-mi* and another in *-hi*. Probably the *hi*-present is derived (in part) from the old perfect tense, by addition of the primary feature **-i* (and in 3 pl. by the use of *-anzi*). Old Hittite 1 sg. *-he*, 3 sg. *-i* points toward **-hai* < **-h*$_2$*ei*, **-ei*. The 3 sg. pret. *-s* is perhaps taken from the *s*-aorist.

Note that the perfect has no primary : secondary opposition (the opposition is recent in Hittite); compare below on the pluperfect.

18.4.3 Inflection

The ablaut *o*/Ø is clearly seen in Indo-Iranian, Greek and Germanic. Other moods than the indicative are seldom found.

PIE probably did not have a pluperfect ('he had given'). Sanskrit and Greek have completely different forms; in Sanskrit the pluperfect is made with the secondary ending of the present (*á-ja-grabh-am*), while in Greek it was made simply through the addition of the augment.

Exercise 56
State for the following verb stems whether they are present, aorist or perfect. Sometimes more than one answer is correct:

a. *h_2elh_2-/ *h_2lh_2- 'to wander'
b. *g^hi-g^heh_1- 'to come'
c. *$ǵ^hrs$-*ié*- 'to get stiff'
d. *dēuk-s- / *deuk-s- 'to pull'
e. *$k^wélh_1$-d^he- 'to appear'
f. *iem-/*im- 'to stretch'
g. *$strnéh_3$- / *$strnh_3$- 'to spread' (√ *$sterh_3$-)
h. *g^hend- / *g^hnd- 'to catch' (√ *g^hed-)
i. *$dolǵ^h$-*éie*- 'to split'
j. *b^he-b^hoih_2- / *b^he-b^hih_2- 'to fear'
k. *mesg-e- 'to immerse'

Exercise 57
Provide the required verb stems to the given roots:

a.	*leis	perfect
b.	*$ǵneh_3$	s-aorist
c.	*ies	reduplicated pres.
d.	*$kleu$	nasal pres.
e.	*dek	*s*-present
f.	*$h_2melǵ$	athematic pres.
g.	*h_2merd	causative
h.	*b^heud^h	root aorist
i.	*uers	thematic pres.

18.5 The middle

18.5.1 Stem formation

In Sanskrit and Greek middle forms can be formed beside the indicative active of all presents and aorists (in fact, beside the subjunctive, optative and imperative, the participle and the infinitive as well). Greek and Sanskrit also have middle forms of the perfect, but these must be recent; see the following section and 18.9 and 10.

Some verbs only have middle forms ('media tantum' or deponentia). They display all possible stem formations:

Skt. *śáy-e*, Gr. *keī-mai* 'to lie'
Skt. *sác-a-te*, Gr. *hép-o-mai*, Lat. *sequ-o-r*, OIr. *sech-i-thir* 'to follow'
Gr. *dérk-o-mai* 'to see'
Gr. *gí-gn-o-mai* 'to be born'

See also Section 18.10.

18.5.2 Personal endings

Skt.	Hitt.	Toch. A/B	Gr.	Lat.	OIr.	Goth.
			PRIMARY			
-e	*-hha(ha)(ri)*	*-ār/-mar*	*-mai*	*-or*	*-ur*	*-da*
-se	*-tta(ri)*	*-tār/-tar*	*-sai*	*-ris*	*-ther*	*-za*
-te, -e	*-(tt)a(ri)*	*-tär*	*-tai, -toi*	*-tur*	*-thir*	*-da*
-mahe	*-wasta(ri)*	*-mtär*	*-metha*	*-mur*	*-mir*	*-nda*
-dhve	*-ttuma(ri)*	*-cär/-tär*	*-sthe*	*-minī*	*-the*	*-nda*
-nte, -re	*-anta(ri)*	*-ntär*	*-ntai*	*-ntur*	*-tir*	*-nda*
			SECONDARY			
-i	*-hha(ha)t(i)*	*-e/-mai*	*-mēn*			
-thās	*-ttat(i)*	*-te/-tai*	*-so*	*-re*	*-the*	
-ta, -a	*-(tt)at(i)*	*-t/-te*	*-to*			
-mahi	*-wastat(i)*	*-mät/-mte*	(*-metha*)			
-dhvam	*-ttumat(i)*	*-c/-t*	(*-sthe*)		*-d*	
-nta, *-ra(n/m)*	*-antat(i)*	*-nt/-nte*	*-nto*			
PIE intransitive	$*\text{-}h_2$		transitive $*\text{-}mh_2$			
	$*\text{-}th_2o$		$*\text{-}sth_2o$			
	**-o*		**-to*			
	$*\text{-}med^hh_2$		$*\text{-}med^hh_2$ ($*\text{-}mesd^hh_2$)			
	$*\text{-}d^hue$		$*\text{-}td^hue$			
	**-ro*		**-ntro*			

The historical interpretation of these endings is far from simple. Scholars have therefore not achieved full agreement. The following seems to me to be the correct approach. There are two important, general questions. The first is about the relation which the *r*-forms have to the other forms, and the second is about the primary : secondary relation.

The *r*-forms do not appear in all forms, except in Tocharian: the 2 sg. (OIr. imp. *-the*) and pl. do not have *-r*. But there is one branch of IE, namely Indo-Iranian, in

which *-r* appears in one form only: 3 pl. *-re*, *-ra(n/m)* in some forms. It is thus easy to assume that *-r* has spread in some languages from the 3 pl. into other persons, or has entirely disappeared (so as, for example, in Greek). This *-r-* reminds us of the 3 pl. ending **-r*, **-ēr* of the perfect tense, and that is probably no coincidence because, as we shall see, the singular endings of the middle are also very similar to those of the perfect (cf. Hittite).

From this it follows that **-r* was not the characteristic of the primary endings. But neither was the **-i* of Sanskrit and Greek the marker of the primary ending in PIE, because the languages which generalized **-r* show no trace of **-i*. It is understandable that, in some languages, the marker of the primary endings of the active (the *-i*) came to be used for the middle too. The conclusion is that there was no opposition between primary and secondary. (In Section 18.10 we shall see that the perfect endings can be considered as secondary endings of the middle.) This implies that we may also use the secondary endings for the reconstruction of the (single) system of middle endings, leaving out of consideration those elements which indicate primary and secondary (in the individual languages).

Singular. (Compare also Section 11.6.2.) 1 sg. Greek has *-mai*, but *-toi* (in Arcado-Cypriot and Mycenaean); the *a*-vocalism in the 1 sg. must therefore be old. Hittite points toward a laryngeal, which must have been **h_2*. Skt. *-i* indicates that the ending consisted of the single laryngeal. Gr. **-mai* and **-mām* can then be explained as reflecting **-maH* < **-m̥h_2* (+ *i*/*m*). Lat. *-or* = *-ō* + *r*. — 2 sg. The Hittite, Tocharian and Celtic forms suggest that Skt. *-thās* is the older form; this must have had **-th_2-*, probably **-th_2o*. The *s*-forms are based on the active endings (**-s*, **-si*). Lat. *-re* < **-so*. — 3 sg. *-to* is clear, but there was also **-o* (more on this ending below).

Plural. 1 pl. Skt. *-mahi*, Gr. *-metha* point toward **-med^hh_2*. But Greek also has *-mestha*, which seems similar to Hitt. *-wasta* (for the *w-* cf. act. *-weni*). — 2 pl. Skt. *-dhve*, *-dhvam* points toward **-d^{h}wa*, which must go back to **-d^{h}ue* together with Gr. *-sthe*. — The 3 pl. is very complicated. We see among other forms, **-nto* and **-ro*.

In Sanskrit one can still see that 3 sg. *-a*, *-e*, 3 pl. *-ra*, *-re* are only found with middle forms that have an intransitive meaning. It now seems probable that these intransitive middles (with **-o*, **-ro*, for example Skt. *śáy-e*, PIE **ḱéi-o* 'he lies') were the oldest type, which served as the basis for middle forms to transitive verbs (Gr. *loúetai* 'he washes for himself'). It was concluded a long time ago that **-to* probably originated from **-t* + **o*. It now seems that for all persons such endings existed, which were a combination of the secondary active ending followed by the (intransitive) middle endings, thus **-m-h_2*, **-s-th_2o*, etc. The adoption of the primary active form as a basis led to 1 pl. **-mes-d^hh_2-*. — It is understandable that the system **-to*, **-ntro* was transformed to **-to*, **-nto* on the model of the active. Italo-Celtic went a step further. Here transitive **-to*, **-nto* was transformed to **-toro*, **-ntoro* on the analogy of intransitive **-tro*, **-ntro* (which had arisen from **-o*, **-ro*). Indeed, in Celtic

the deponents (intransitive) can be explained from *-*tro*, but the passive (= transitive) requires a preform *-*toro*.

18.5.3 Inflection

The middle forms have the zero grade of the root in the normal (mobile) inflection. In the static inflection, however, they take the full grade, just like the *s*-aorist.

The thematic forms have no ablaut. The diagram on this page gives some examples (Skt. *brū-C/bruv-V* 'to say' < **mluH-*, the zero grade of **mleuH-* > *bravī-ti*; *bhū-* 'to be'; *kr̥-* 'to do'; *stu-* 'to praise'; Gr. *do-* < **dh*$_3$*-* 'to give'; *hépomai* 'to follow'; *deik-* 'to indicate'.)

Athematic present		**Thematic present**	
bruv-é	*dído-mai*	*bháv-e*	*hép-omai*
brū-ṣé	*-sai*	*-ase*	*-ei* < *-eai*
-té	*-tai*	*-ate*	*-etai*
-máhe	*-metha*	*-āmahe*	*-ómetha*
-dhvé	*-sthe*	*-adhve*	*-esthe*
bruv-áte	*-ntai*	*-ante*	*-ontai*
Imperfect			
ábruv-i	*edidó-mēn*	*ábhav-e*	*heip-ómēn*
ábrū-thās	*-so*	*-athās*	*-ou*
-ta	*-to*	*-ata*	*-eto*
-mahi	*-metha*	*-āmahi*	*-ómetha*
-dhvam	*-sthe*	*-adhvam*	*-esthe*
ábruv-ata	*-nto*	*-anta*	*-onto*
Athematic aorist		**s-aorist**	
ákr-i	*edó-mēn*	*ástoṣ-i*	*edeiks-ámēn*
ákr̥-thās	*-u*	*-ṭhās*	*-ō* < *-ao*
-ta	*-to*	*-ṭa*	*-ato*
-mahi	*-metha*	*-mahi*	*-ámetha*
-dhvam	*-sthe*	*ástoḍhvam*	*-asthe*
ákr-ata	*-nto*	*ástoṣ-ata*	*-anto*

Exercise 58
Reconstruct the PIE preforms of the following Skt. forms:
Skt. *áśret* 3sg.aor.ind.act., *śráyate* 3sg.pres.ind.med., *śiśráya* 3sg.pf.ind.act.: to PIE **klei-* 'to lean'

Exercise 59
Indicate for the following Avestan verb forms whether their ending belongs to the active, the middle, or the intransitive middle (compare the forms given for Skt. to arrive at the answers):

a. *barəṇti* (3 pl. to pres. *bar-a-*)
b. *dadᵊmaⁱdē* (1 pl. to pres. *dad-/dᶻd-*)
c. *mąsta* (3 sg. to aor. *man-s-*)
d. *mruiiē* (**mluH-ai*, 3 sg. to pres. *mrauu-/mrū-*)
e. *vinasti* (3 sg. to pres. *vinad-/viṇd-*)
f. *fra-caraθβe* (< **-δβe*, 2 pl. pres. to *car-a-*)

18.6 The dual

Personal endings:

PIE	Skt.	Av.	OCS	Lith.	Toch.	Gr.	Goth.
			PRIMARY				
**-ues*	*-vas*	*-uuahi*	*-vě*	*-va*		*-*	*-(o)s*
**-tHe/os*	*-thas*	?	*-ta*	*-ta*		*-ton*	*-ts*
**-tes*	*-tas*	*-tō*	*-te*	*-*	*-/teṇ*	*-ton*	*-*
			SECONDARY				
**-ue*	*-va*	*-uua*				*-*	*-u*, *-wa*
**-tom*	*-tam*	?				*-ton*	*-uts*
**-teh$_2$m*	*-tām*	*-təm*			*-enas/-ais*	*-tēn*	*-*

A complete reconstruction of the paradigm is no longer possible: there is too little data, and it points in different directions.

Primary. 1 du. Goth. *-(o)s* must reflect **-oues*. The Slavic form has *-ě* analogically after the pronouns (**-ues* would have yielded Sl. **-ve*). Hitt. 1 pl. *-uen(i)* perhaps stems from the dual. — 2 du. perhaps had **-th$_1$-*, as did the 2 pl. — 3 du. Skt. *-tas*, OCS *-te* must continue **-tes*.

Secondary. 1 du. Goth. *-u* < **-ue*; for *-wa* compare 1 pl. *-ma*. — 2 du. In Goth. *-uts* the *-u-* is analogical after the plural endings and *-ts* could be the primary ending. Gr. *-tēn*, Dor. *-tān* can only have been **-teh$_2$m*.

The middle endings are:

PIE	Skt.	ath.	them.	Hitt.	Gr.
			PRIMARY		
*-*ued*$^{h}h_2$		*-vahe*	*-vahe*	(*-wasta*(*ri*))	-
*-(*e*)*Hth*$_1$-?		*-āthe*	*-ithe*		*-sthon*
*-(*e*)*Hteh*$_2$??		*-āte*	*-ite*		*-sthon*
			SECONDARY		
		-vahi	*-vahi*	(*-wastat*(*i*))	-
		-āthām	*-ithām*		*-sthon*
		-ātām	*-itām*		*-sthēn*

The pattern Skt. *v-*, *th-*, *t-* is the same as in the active. For prim. *-e*, sec. *-i* see the plural. The Greek forms have *-sth-* from the 2 pl. *-sthe*, and *-on*, *-ēn* as in the active. Hence, all of these forms can be innovations. If Skt. *-vahi* goes back to *-*ued*$^{h}h_2$ (OAv. *-uuaidī*; cf. 1 pl. med. *-mahi*, Gr. *-metha*), Hitt. 1 pl. *-wasta* must go back to *-*uosd*$^{h}h_2$. — Because the middle does not have a primary : secondary opposition, that opposition cannot be old in the dual either.

18.7 The static inflection

It has been observed that some (athematic) verbs, especially in Sanskrit, display an ablaut type which deviates from the normal kind. Whereas the usual type has full grade versus zero grade, the deviant type opposes a lengthened grade to a full grade. Compare:

ind. sg. full grade	*é-mi* *brávī-ti*	lengthened grade	*tā́ṣ-ṭi* < *tētḱ-* *staú-ti* < *stēu-*
ind. pl. zero grade	*y-ánti* *bruv-ánti*	full grade	*tákṣ-ati* < *tétḱ-nti*
middle zero grade	*brū-té*	full grade	*táv-e* < *steu-*

In abstract terms:

normal	sg.	*CéC-mi*	static	*CḗC-mi*
(mobile)	pl.	*CC-énti*		*Céc-nti*
	med.	*CC-tó*		*CéC-to*

The second type was called 'proterodynamic' by Johanna Narten in 1968 (meaning that the stress — sometimes — occurred one syllable further to the beginning of the word than normally was the case). Yet the important principle here is that in the

normal type the accent is mobile, while in the second type it remains on the root. The term 'static' is therefore preferable.

The ablaut can be understood from the accent: the root always has full grade, but in monosyllabic forms, vowel lengthening occurred. The 2 and 3 sg. of the injunctive were monosyllabic, for example, Skt. *staut*. From such forms, the long vowel was introduced into all of the singular.

We already saw that the *s*-aorist had static inflection. Since the aorist takes only secondary endings, monosyllabic forms were relatively strong in the *s*-aorist paradigm, which is why all of the indicative came to acquire the long vowel.

There were also media tantum with static inflection, for example Skt. *śáy-e*, Gr. *keī-tai* 'he lies' < **ḱéi-o*.

Perhaps some perfects with a long vowel belong here too: Gr. *gégōne* 'he made himself heard', *eíōtha* < **se-suōd^h-* 'I am used to'.

It is as yet unknown why some verbs had the static inflection and others did not. Some scholars have speculated that certain roots always had an 'upgraded' kind of ablaut, that is to say, *ē*-grade in formations which normally have *e*-grade, and *e*-grade instead of normal zero grade forms. Roots with this alleged behaviour have been called 'Narten roots'. Yet it has proved impossible to define which roots would take this special kind of ablaut and which would not. Most of the long-vowel words adduced as evidence for this theory must be explained within the individual branches of Indo-European, or from lengthening in PIE monosyllables.

18.8 The moods

18.8.1 The indicative

Until now, we have limited ourselves to the indicative. The indicative is used for factual statements. The indicative of the present, with primary endings, indicated that the action referred to was taking place during the speech act. The indicative of the past tense (imperfect or aorist) indicated that the action referred to took place before the speech act. The past tense forms were characterized by secondary endings and the augment.

18.8.2 The injunctive

The injunctive is defined as a form with secondary endings without augment. It therefore neither indicated the present nor the past. Thus it could easily indicate intention: Skt. *índrasya nú vīryàṇi prá vocam* (inj.) 'Indra's heroic deeds will/shall I now declaim'. It was also used for an imperative form. The 2 pl. of the imperative is always the injunctive form. In Sanskrit the injunctive is obligatory in the case of all prohibitions:

má na, indra, párā vr̥ṇak (inj.) 'Do not forsake us, Indra'. In Greek the injunctive forms are completely equal to the indicative forms (*bẽ* = *ébē* 'he went'); in this case, it makes no sense to speak of an injunctive (because there is no semantic component). Only in Sanskrit can one speak of an injunctive.

18.8.3 The subjunctive

The subjunctive had thematic inflection and primary endings:

	ATHEMATIC STEMS		THEMATIC STEMS	
*-*oH*	Skt. *ás-ā(ni)*	Lat. *er-ō*	Skt. *bháv-ā(ni)*	Gr. *skh-õ*
*-*eh*$_1$*i*	*-as(i)*	*-is*	*-ās(i)*	*-ẽis*
*-*e*	*-at(i)*	*-it*	*-āt(i)*	*-ẽi*
*-*omom*	*-āma*	*-imus*	*-āma*	*-õmen*
*-*eth*$_1$*e*	*-atha*	*-itis*	*-ātha*	*-ẽte*
*-*o*	*-an*	*-unt*	*-ān*	*-õsi*

Lat. *erō* is a future ('I shall be') derived from a subjunctive.

The subjunctive is always 'thematic', which is to say that it has **e* or **o* + the thematic endings (*-*H*, *-*h*$_1$*i*, zero, *-*mom*, *-*th*$_1$*e*, zero). For this reason, if the subjunctive inflection occurred with thematic verbs (which already had a suffix **e*/**o*), the **e* or **o* was doubled and the result was **ē*, **ō*: 1 sg. *-*o-oH*, 3 sg. *-*e-e*, etc. Probably, such forms only came into being after PIE; they are only known from Indo-Iranian and Greek. In Old Avestan they are still disyllabic, *xšaiiā* = /*xšayaā*/, *hacå̊ṇtē* = /*hacaantai*/.

It is remarkable that the Sanskrit paradigm combines primary and secondary endings (*-ni* is a particle; *-ā*, *-si*, *-ti* and *-tha* are primary, *-ma* and *-(a)n* are secondary). Apparently Sanskrit has used the secondary athematic endings (later replaced by primary *-si*, *-ti*) to replace those (primary) thematic endings which have not been preserved in this language (2 + 3 sg., 1 + 3 pl.). Greek also has traces of this situation (in the dialects).

The subjunctive always has full grade in the root (Skt. *as-*, Lat. *er-* < **h*$_1$*es-* as opposed to **h*$_1$*es-*/**h*$_1$*s-* in the indicative). This is most apparent in the middle, where Sanskrit has zero grade in all indicative forms, for example *brū-té*, but sub. *bráv-a-te* (**mluH-*/**mleuH-*). This suggests that the middle subjunctive is secondary, and that the subjunctive stood apart from the other forms (in contrast to the optative). This is confirmed by cases where the oldest system has an active subjunctive together with middle forms: Skt. ind. aor. middle *a-v(u)r-i*, sub. act. *vár-a-t*, opt. middle *vur-ī-ta* (**uelH-* 'to want').

Both Sanskrit, where, for example, *karat(i)* is the subjunctive to (pres.) *kr̥ṇómi*, and Latin, with the old subjunctive *tagam* alongside the present *tangō*, suggest that the

subjunctive was originally formed from the root, not from the present or aorist stem. That means that the subjunctive (to be) was originally an independent formation (a thematic present), and that each root only had one subjunctive.

18.8.4 The optative

The optative was formed with the suffix *-*ieh*$_1$-/*-*ih*$_1$-, with secondary endings. In the thematic inflection we find -*oi*- < *-*o-ih*$_1$-.

PIE	Skt.	Gr.	Lat.	Goth.
		ATHEMATIC		
*h_1s-iéh_1-m	*s-yā́-m*	*eíēn*	*siem, sim*	*ber-jau*
-*s*	-*s*	-*s*	*siēs, sīs*	-*ei*
-*t*	-*t*	-	*siet, sit*	-*i*
*h_1s-ih$_1$-mé	-*ma*	*eĩmen*	*sīmus*	-*eima*
-*té*	-*ta*	-*te*	*sītis*	-*eiþ*
*$h_1$és-ih$_1$-nt	*s-y-úr*	-*en*	*sint, sient*	-*eina*
		THEMATIC		
*b^hér-oih$_1$-m	*bhár-eyam*	*phéroi-mi, -oia*		*bair-au*
-*s*	-*es*	-*s*		-*ais*
-*t*	-*et*	-		-*ai*
-*me*	-*ema*	-*men*		-*aima*
-*te*	-*eta*	-*te*		-*aiþ*
-*ent*	-*eyur*	-*en*		-*aina*

Sanskrit has generalized -*yā*, and has -*ur* instead of *-*at* < *-*n̥t*. Old Latin still has -*iē*-. Only the verb 'to be' still preserves the old optative paradigm in Latin. Gothic generalized -*ī*- < *-*ih*$_1$-. 1 sg. -*au* reflects the thematic form *-*oih*$_1$*m* > *-*ajun* > -*au*. OCS has *ě* < **oi* in 2 pl. *bǫděte*, which became an imperative.

Because the 3 pl. had zero grade both in the ending and in the suffix, the root must have had full grade. This is confirmed by roots ending in laryngeals, which were puzzling until recently, as in Skt. *deyā́m* from the root *dā*- 'to give'. The -*e*-, PIIr. *-*ai*-, comes from *-*deh*$_3$-ih$_1$-nt* > *-*daHi*-; in the 1 pl., this yielded *-*daīma* > *-*daima* > *-*demá*. This was then remade into *deyā́ma*, by which means the stem *deyā*- was formed.

Reduplicated optatives had the zero grade of the suffix everywhere. Av. *daidīṯ* < *-*d^he-d^hh$_1$-ih$_1$-t*. There are also traces of static inflection elsewhere. OAv. *varəzimā* < *-*uerǵ-ih$_1$-me* 'may we work'; Lat. *velīmus*, Goth. *wileima* '(may) we wish to' < *-*uélH-ih$_1$-me*. But perhaps these forms are analogical after the 3 pl. This type is also expected in the *s*-aorist, which always follows the static inflection: Gr. Cret. *lus-ian* < -*ih*$_1$-n̥*t*. Normally, Greek has -*sai-mi* etc., with -*a*- from the indicative.

Middle. We find the following endings:

PIE	Skt.	Gr.	Goth.
	ATHEMATIC		
*-ih_1-h_2	*bruv-īyá*	*theímēn*	
-th_2ó	-*īthā́s*	*theīo*	
-ó	-*ītá*	*theīto*	
-$méd^hh_2$	-*īmáhi*	*theímetha*	
-$d^hué$	-*īdhvám*	*theīsthe*	
-ró	-*īrán*	*theīnto*	
	THEMATIC		
*-oih_1-h_2	*bhár-eya*	*pher-oímēn*	*bair-aidau*
-th_2o	-*ethās*	-*oio*	-*aizau*
-*o*	-*eta*	-*oito*	-*aidau*
-$méd^hh_2$	-*emahi*	-*oímetha*	(-*aindau*)
-d^hue	-*edhvam*	-*oisthe*	(-*aindau*)
-*ro*	-*eran*	-*ointo*	-*aindau*

According to Skt. 3 pl. -*ran* the optative had the intransitive middle endings. 3 sg. *-ih_2-*o* > Skt. *-*iya* was replaced by -*ī* + *ta*. The Skt. 1 sg. arose from the following proportional analogy: ind. 1 -*e* : 3 -*te* = opt. 1 X : 3 -*ta*; X = -*a*. — Greek has the usual middle endings. — Gothic has -*u*, probably from the 1 sg. opt. them. act., added to the normal middle ending.

18.8.5 The imperative

There were two systems (I and II).

	Skt. I	II	Hitt.	Gr.	Lat. I	II	Goth.
				ACTIVE ATHEMATIC			
2.	*i- hí*	*i-tā́t*	*ep*	*í-thi*	*ī*	*itō*	
3.	*é-tu*	*i-tā́t*	*epdu*	*í-tō*		*itō*	
2.	*i- tá*	*i-tā́t*	*epten*	*í-te*	*īte*	*itōte*	
3.	*y-ántu*		*appandu*	*i-óntōn*		*euntō*	
				ACTIVE THEMATIC			
2.	*bhár-a*	-*atā́t*		*phér-e*	*age*	*agitō*	*bair*
3.	-*atu*	-*atā́t*		-*étō*		*agitō*	*bair-adau*
2.	-*ata*			-*ete*	*agite*	*agitōte*	-*iþ*
3.	-*antu*			-*óntōn*		*aguntō*	-*andau*

PIE	athem. I	II	them. I	II
	Ø, **-d^{h}i*	**-tōd*	**-e*	**-etōd*
	**-tu*	**-tōd*	**-etu*	**-etōd*
	**-te*	**-tōd*	**-ete*	**-etōd*
	**-entu*		**-ontu*	

From Sanskrit and Latin it appears that there were two systems. The imperative II had **-tōd* and indicated that an action in the (near) future was supposed to take place ('then you must…'). PIE **-tōd* could be the ablative of the pronoun **to*, meaning 'from then onwards'. This element was used in 2 and 3 sg. and 2 pl., and perhaps also in the middle.

2 sg. One finds either the single stem (with full grade, Lat. *ī* < **h$_1$ei*; it is unclear to what extent **-e* may be called the stem with thematic verbs), or an ending **-d^{h}i*, usually with zero grade. — 3 sg. **-tu* must be the secondary ending **-t* + the particle **-u*. Goth. *-adau* is unclear. — 2 pl. **-te* is the secondary ending.

Middle. The endings are as follows:

Skt			**Hitt.**		**Gr.**	**Lat.**		
tr.	**intr.**	**II**	**tr.**	**intr.**		**I**	**II old**	**recent**
-sva			*-hhut*		*-(s)o*	*-re*	*-tōd*	*-tor*
-tām	*-ām*	*-tāt*	*-ttaru*	*-aru*	*-sthō*		*-tōd*	*-tor*
-dhva(m)		*-tāt*	*-ttumat*		*-sthe*	*-minī*		
-ntām	*-rām*		*-antaru*		*-sthō(n)*		*-ntōd*	*-ntor*
PIE	**trans.**		**intr.**	**II**				
	**-sue*?							
	**-to*?		**-o*?	**-tōd*				
	**-d^{h}ue*			**-tōd*				
	**-nto*?		**-ro*?					

2 sg. Skt. *-sva* is unknown elsewhere, and is thus old. (One would expect **-sth$_2$o*, intrans. **-th$_2$o.*) **-so* (Lat. *-re*) is the younger secondary ending. — 3 sg. Skt. *-ām*, *-tām* is also a specific ending. It is based on **-o*, **-to* (cf. Hittite) with a particle. The Greek form must have *-sth-* from the plural and *-ō* from act. **-tō*(*d*). The Latin and Hittite endings are recent formations. — 2 pl. is the secondary ending. — 3 pl. All forms are transparent, and thus probably recent.

It is doubtful whether **-tōd* is old in the middle; Sanskrit only has a few forms.

Exercise 60

State for the following verb forms from athematic stems whether they are indicative, injunctive, imperfect, subjunctive, optative or imperative.

a. **g^{wh}n-énti*
b. **b^hug^h-d^{h}i*
c. **$h_1$éi-omom*
d. **kés-ih$_1$nt*
e. **mi-mn-ués*
f. **str-n-h$_3$-té*
g. **h_1m-s-iéh$_1$-m*
h. **téḱ-eh$_1$i*
i. **b^hud^h-eh$_1$-tu*
j. **h_2e-h$_2$oǵ-e*

Exercise 61

Form the required verb forms to the given roots:

a. **teng-* 'make wet': *s*-aor. 3sg.ind.act.
b. **pelh$_2$-* 'to approach': nasal pres. 1sg.inj.act.
c. **per-* 'to cross': *o*-grade caus.pres. 2pl.opt.act.
d. **ḱleu-* 'to hear': root aor. 3pl.inj.act.
e. **h$_2$ueh$_1$-* 'to blow': subj. 3sg.act.
f. **de/i-dḱ-* 'to receive': redupl.pres. 3sg.opt.act.
g. **demh$_2$-* 'to tame': nasal pres. 3sg.imptv.act.
h. **leǵ^h-* 'to lie': intrans. middle (stative) 3sg.ind.
i. **sek^w-* 'to follow': thematic trans. middle 3pl.ind.
j. **d^{h}ers-* 'to dare': perfect 2sg.ind.
k. **ueid-* 'to see': perfect 3pl.ind.
l. **deh$_3$-* 'to give': redupl. pres. 1du.inj.act.

Exercise 62

Reconstruct the PIE preform of the given verb forms:

a. Skt. *bhindánti* 'they split' (root **b^{h}id-*) pres.ind.act.
b. Hitt. *kuerzi* 'he cuts' (root **k^{w}r-*) pres.ind.act.
c. Skt. *dviṣṭé* 'is hated' (root **du̯is-*) pres.ind.mid.
d. Av. *dāraiiōiš* 'may you hold' (root **d^{h}er-*) pres.opt.act.
e. Lat. *siēs* 'may you be' (root **h$_1$s-*) pres.opt.act.
f. Gr. *éstēn* 'I stood' (root **sth$_2$-*) aor.ind.act.
g. Gr. *éoike* 'she appears' (root **uiḱ-*) pf.ind.act.

18.9 The nominal forms

18.9.1 The participles

PIE had a number of participles which played an important role in the language. The oldest languages rely heavily on the use of participles. There were probably no subordinate clauses in PIE.

Active: present, aorist. The participle was formed with *-(*e*)*nt*-. The inflections, either hysterodynamic or static, have already been examined in Section 13.2.5, under point f, and in 13.2.7. A few examples:

Skt. pres. *adánt-* 'eating', *yánt* 'going' (*h_1*i-ent-*); them. *bhárant-* 'carrying'; *s*-aor. *dhák-ṣ-at* 'burning' < **-s-n̥t*
OCS *nesy*, *nesǫšt-* 'carrying' < **-ont-i̯-*; Lith. *nešą̃s*, *-ant-*
Hitt. *kunant-* 'killed' from *kuen-*
Toch. A *aśant-*, Toch. B *aśeñca* 'transporting' (PIE *h_2*eǵ-*)
Gr. *titheís* < *-ent-s*, *iṓn*, *phérōn*, s-aor. *deiksant-*
Lat. *ferēns* < **-ent-s*, *-ent-* 'carrying', *īēns* 'going'. Goth. *bairands*

The thematic participle had no ablaut, as in Avestan: always **-ont-*, for example Av. gen. *-aṇtō* < **-ont-os*. Sanskrit was the only language to adopt the athematic ablaut **-ont-*/**-nt-*, for example gen. *-atas* < **-nt-os.*

In Hittite the participle has passive (or intransitive) meaning. Whether the original meaning was neutral ('which has something to do with …') is uncertain.

Active: perfect. The suffix was **-ues-*. The inflection has already been discussed in Section 13.2.5 g. A few examples:

Skt. *vid-vā́n*, *-uṣ-* 'knowing'
OCS *nesъ*, *-ъš-* 'having carried' < **-us-i̯-*
Lith. *lìk-ęs*, *-us-* 'having left' (with transformed nominative **-uents*)
Toch. A *papräku*, Toch. B *peparku* 'having asked'
Gr. *eidṓs* 'knowing' < **ueid-uōs*, feminine **iduīa* < **uid-us-ih*$_2$
Goth. (only lexicalized, that is to say, made into a substantive) *berusjos* 'parents' < 'who have carried'

Middle. The suffix **-mh*$_1$*no-* makes middle participles. This looks like a compound suffix, made from the zero grade of the suffix *-h*$_1$*en-* (Section 13.1.2) after a verbal noun in **-m-*. For the forms see Section 10.5. Examples:

Skt. *sáca-māna-* 'following', *dá-dh-āna-* 'laying', *śáyāna-* 'lying'
Av. *barəmna-* 'riding (a horse)'
Arm. (lexicalized, e.g.) *anasun* 'animal' = 'not-speaking', *-un* < *-omnós*

Toch. A *klyosmāṃ*, Toch. B *klyausemane* 'hearing'
Phryg. *tetikmenos* 'cursed'
Gr. *hepómenos* 'following'

Traces in Latin are *alumnus* 'pupil' < **alo-manos*, to *alō* 'to feed', and *fēmina* 'woman' = 'nursing' (**d*^{h}*eh*$_1$- 'to suck').

18.9.2 The verbal adjective

This is an adjective that is not derived from a tense stem, as is the participle, but from a root. The most frequently found is the adjective in **-to-*; the root has zero grade.

Skt. *syūtá-* 'sewn', OCS *šitъ* < **sjū-tъ*, Lith. *siū́-tas*
Skt. *gatá-*, Gr. *-batós*, Lat. *(in)-ventus* 'arrived' < **g*^{w}*m-tó-*
Lat. *tentus* 'stretched' < **tn-to-*
Arm. *lu* 'known' < **kĺu-tó-*
Goth. *nasiþs* 'saved' < **-tó-s*

Germanic uses this suffix to form the verbal adjective of weak verbs, as in E. *fill-ed.*
The same function as **-to-* was fulfilled by **-no-*:

Skt. *bhinná-* < **b*^{h}*id-nó-* 'split'
Skt. *pūrṇá-* 'full, filled', OCS *plъnъ*, Lith. *pìlnas*, OIr. *lán*, Goth. *fulls*, all from **plh*$_1$*-no-*, Lat. *plēnus* (with full grade)

The suffix form **-eno-* is found in OCS *vlьčenъ* 'pulled'. In Germanic **-ono-* is used for the strong verbs: Goth. *bit-ans* < **-onos*, E. *bitten* (sometimes **-ino-*: Runic *slaginaz*, OS *geslegen* 'beaten'). We find **-u̯o-* in the same function: Skt. *pakvá-* 'cooked'. With **-lo-* were made the past participle passive in Slavic (*nes-lъ* 'borne') and Armenian (*gereal* 'taken'). A suffix **-mo-* is found in Sankrit (*bhīmá-* 'terrible, frightening'), in Balto-Slavic in the present participle passive (Lith. *nẽšamas*, OCS *nesomъ* 'being carried', *nevidimъ* 'invisible'), in Albanian (*la-m* 'washed'), in Luwian (*kisama-* 'combed') and in Tocharian (A *pärknäm* 'asking', B *lyukemo* 'shining').

18.9.3 The verbal nouns and the infinitives

PIE probably had no infinitives, but it did have verbal nouns. An infinitive is an indeclinable form, derived from a verbal stem, for example Gr. *loũsai* 'to wash'; this form is unchangeable and derived from the aorist stem *lous(a)-*. A verbal noun, in contrast, is a (declinable) substantive, derived from the root of a verb. The difference in the syntax is important. The verbal noun is constructed as a noun, thus — for example — with the 'object' in the genitive: 'the killing of a man', as opposed to the accusative object

found with an infinitive, 'to kill a man'. Example: OIr. *guin* (verbal noun *g^{wh}oni*) *duini* (gen.) 'the killing of a man'.

Such verbal nouns were formed in many ways. In the function resembling an infinitive we most often find the dative ('in order to') and the accusative (especially after verbs of movement).

Several stem types occur as verbal nouns. A root noun is: Skt. *áj-e* (dat.) 'in order to drive', Lat. *ag-ī* 'to be driven'. From the *-tu-* suffix we find the accusative in Skt. *dā́tum* 'in order to give', OCS *vidětъ* 'to see', Lith. *imtų* 'in order to take', OPr. *dātun*, Lat. (supinum) *vīsum* 'in order to see'; the dative in Skt. *dā́-tav-e*, OPr. *da-twei*, Lat. (supinum) *dictū*. Old Irish also has *-*tu-*, as in *léciud* 'to leave'. From a *ti*-stem the dative is used in Skt. *pī-táy-e* '(in order) to drink', OCS *ves-ti* 'to transport'. Old Irish has verbal nouns with *-*t-*, *-*m-* and *-*n-*. The Germanic infinitive goes back to (acc.) *-*onom*, Goth. *it-an*, G. *essen*.

It thus turns out that there were several different formations in the oldest phase. Sanskrit, for example, has a dozen. Out of these verbal nouns, infinitives often developed in the later period. These, then, are petrified cases of verbal nouns. It is often difficult to recover the origin of these forms.

The infinitive Skt. *-dhyai*, Av. *-diiāi* (OAv. *jaidiiāi* 'to kill') is perhaps cognate with Umbr. *-fi* (*herifi* 'to wish'), which would point toward *-d^hiōi*; but the interpretation is uncertain.

Exercise 63

Reconstruct the PIE active participle belonging to the following stems:

a. pres. **serp-e-* 'to creep'
b. aor. **deuk-s-* 'to lead'
c. pf. **k^{w}eit-* 'to notice'
d. pres. **k^{w}er-*/**k^{w}r-* 'to cut'
e. pres. **pu-n-H-* 'to clean'
f. pf. **steg-* 'to cover'

Exercise 64

Reconstruct the PIE preform of the given participles:

a. Skt. *ruddhá-* 'obstructed' (root **lud^h-*)
b. Lat. *calumnia* 'slander' (stem **kHl-u-*; the *io*-stem replaces an *o*-stem)
c. Skt. *ánna-* 'food' (root **h$_1$ed-*)
d. Gr. *átrestos* 'fearless' (root **trs-*)
e. Goth. *fulgins* 'hidden' (root **plk-*)

18.10 The PIE verbal system

After having analyzed the individual categories, we shall briefly summarize what we have discovered for PIE. Our present reconstruction differs quite a bit from the vision that was generally accepted until recently. For this reason it seems a good idea to begin by presenting this 'classic' picture. It used to be customary to imagine that the verbal system of PIE was in principle the same as that of Sanskrit and Greek. This can be presented schematically as follows:

		pres. ind.	imf. ind.	sub.	opt.	imp.	ATH.	THEM.
PRES.	act.	+	+	+	+	+	+	+
	med.	+	+	+	+	+	+	+
AOR.	act.	–	+	+	+	+	+	+?
	med.	–	+	+	+	+	+	+?
PF.	act.	+	–	+	+	+	+	–
	med.	?	–	?	?	?	?	–

Now compare the following overview of the verbal endings which we have reconstructed in this book:

ATHEMATIC			THEMATIC			STATIVE	
1	**2**	**2–5**	**3**	**4**	**4–5**	**5**	**6**
prim. pres.	**sec. aor.**	**trans. middle**	**prim.**	**sec.**	**trans. middle**	**intrans. middle**	**pf.**
-mi	*-m*	*-mh$_2$*	*-oH*	*-om*	*-omh$_2$*	*-h$_2$*	*-h$_2$e*
-si	*-s*	*-sth$_2$o*	*-eh$_1$i*	*-es*	*-esth$_2$o*	*-th$_2$o*	*-th$_2$e*
-ti	*-t*	*-to*	*-e*	*-et*	*-eto*	*-o*	*-e*
-mes	*-me*	*-me(s)d^{h}h$_2$*	*-omom*	*-omo/e*	*-ome(s) d^{h}h$_2$*	*-me(s)d^{h}h$_2$*	*-me*
-th$_1$e	*-te*	*-(t)d^{h}ue*	*-eth$_1$e*	*-ete*	*-etd^{h}ue*	*-d^{h}ue*	*-(h$_1$)e*
-enti	*-ent*	*-ntro*	*-o*	*-ont*	*-ontro*	*-ro*	*-(ē)r*

The endings of the imperative are not important here; 2–5 and 4–5 came into being due to the addition of 5 to 2 and 4.

First a few details:

— The alternations **-ent(i)* / **-nt(i)* and **-ēr* (< *-er*) / **-r* were dependent on the accent. — The interchange *e*/*o* in the thematic inflection remains unexplained (1 sg. could be **-eh$_3$*). — Probably simplifications had already been at work in this system. Thus, the thematic 2 pl. may have been different from the athematic form and the 1 pl.

intrans. med. *-*me(s)*$d^h h_2$ could be the transitive form, while the intransitive form was only *-$d^h h_2$.

Now for the main lines of development. We may notice the following. The present and the aorist (= secondary) endings form one system. The fact that the (primary) thematic endings are different from those of the athematic type suggests that the thematic inflection was not only the inflection of the stems which happened to end in *-e/o*, but that this was an independent category with its own meaning. It has been assumed that *-e/o-* indicated a definite object. See below under the subjunctive. That the secondary endings are identical to those of the athematic inflection requires an explanation (see below).

It is significant that the (intransitive) middle endings show a strong similarity to those of the perfect tense. In addition, an (active) perfect often has a middle present alongside it, for example Gr. *dérkomai – dédorka* 'to see'. Further, the perfect had since the earliest times no middle (and the intransitive middle — by definition — had no active). Neither of them has the opposition primary : secondary. Finally, the perfect tense usually has intransitive meaning, just as the intransitive middle. This allows us to conclude that the (intransitive) middle was related to the perfect as the present was to the aorist. The middle-perfect system is thus referred to as 'stative' because these forms indicate a state. If there had been an opposition between them such as that between imperfective and perfective (as in the Slavic languages), the PIE verb would, in its outlines, have been organized as follows (a few other points have also been worked into the scheme below):

	imperfective	**perfective**	**transitive middle**	**optative**
SUBJECTIVE	ath. pres.	ath. aor.	ath.	ath.
	1 *-*mi*	2 *-*m*	2–5 *-mh_2	*-ieh_1-*m*
OBJECTIVE	them. pres.	them. aor.	them.	them.
	3 *-*oH*	4 *-*om*	4–5 *-omh_2	*-oih_1-*m*
STATIVE	intr. middle	perf.	–	?
	5 *-h_2	6 *-h_2e		

The subjective inflection has no definite object, while the objective inflection always has a definite object (as in Hungarian). The imperfect is a younger derivation from the present.

The subjunctive probably first developed out of category 3. As we have seen above, there are indications that there was only one subjunctive, directly derived from the root.

It is conceivable and even probable that a root formed only one of the categories 1–6. In this way it becomes understandable that there originally was only one subjunctive, directly derived from the root. Other stems were then formed with the help

of suffixes and/or reduplication. In this way, too, it is understandable that the thematic present could function as a subjunctive (with 1–2).

The difference between the primary and secondary endings in the thematic inflection could be explained as follows. We have already discussed the hypothesis (Section 13.2.10) that PIE had an ergative system. According to this theory, the subject of PIE transitive verbs was in the ergative, while their object was found in the absolutive. The absolutive also served as the subject of intransitive verbs. This system was valid for the athematic (= subjective) inflection, for the stative (= intransitive) inflection, and for the aorist of the thematic verbs. With the present of the thematic verbs it was otherwise. (Georgian, for example, has a difference of this kind between the present and the aorist.) Here the subject would be found in the dative in the case of living creatures, and in the instrumental case with an inanimate subject.

				subject	**object**
ATHEMATIC	transitive			ergative	absolutive
	intransitive			absolutive	–
STATIVE	(intransitive)			absolutive	–
THEMATIC	(transitive)	aorist		ergative	absolutive
		present	'animate'	dative	absolutive
			'inanimate'	instrumental	absolutive

The endings would now refer to an ergative subject, but the primary thematic endings would refer to a dative subject. This reconstructions rests, however, only on an analysis of the endings, for which it provides a possible explanation; the syntax of the attested Indo-European languages works in a completely different way.

18.11 A paradigm as example

After this analytical survey we present on the next pages a complete paradigm of a present tense in Sanskrit. It is a present ending in *-no/nu-* (Skt. *cinóti* 'to gather'). Next to it are the possible PIE forms.

Once again a word of caution: it is important to remember that the Sanskrit paradigm is the reality upon which our work is based; the PIE paradigm is only a reconstruction.

SANSKRIT
(*cinóti* 'gathers')

PRESENT ACTIVE					
ind.	*ci-nó-mi*	ind.	*á-ci-nav-am*	inj. *ci-náv-am*	
pres.	*-ṣi*	imf.	*-no-s*	*-nó-s*	
	-ti		*-no-t*	*-nó-t*	
	-n-más(i)		*-n-ma*	*-n-má*	
	-nu-thá		*-nu-ta*	*-nu-tá*	
	-nv-ánti		*-nv-an*	*-nv-án*	
sub.	*ci-náv-ā(ni)*	opt.	*ci-nu-yā́-m*	imp. I	II
	-a-s		*-s*	*ci-nú(-hí)*	*-nu-tā́t*
	-t		*-t*	*-nó-tu*	
	-ā-ma		*-ma*		
	-a-tha		*-ta*	*-nu-tá*, *-nó-ta(na)*	
	-n		*-yúr*	*-nv-ántu*	
ptc.	*ci-nv-ánt-*				
PRESENT MIDDLE					
ind.	*ci-nv-é*	ind.	*á-ci-nv-i*	inj.	*ci-nv-i*
pres.	*-nu-ṣé*	imf.	*-nu-thās*		*-nu-thā́s*
	-té, *-nv-é*		*-nu-ta*		*-nu-tá*
	-n-máhe		*-n-mahi*		*-n-máhi*
	-nu-dhvé		*-nu-dhvam*		*-nu-dhvám*
	-nv-áte, *-até*		*-nv-ate*		*-nv-ata*
sub.	*ci-náv-ai*	opt.	*ci-nv-ī-yá*	imp.	
	-a-se		*-thā́s*		*ci-nu-ṣvá*
	-a-te		*-tá*		*-tā́m*
	-ā-mahai		*-máhi*		
	-a-dhve		*-dhvám*		*-dhvám*
	-a-nta		*-rán*		*-nv-átām*
ptc.	*ci-nv-ānā-*				

PROTO-INDO-EUROPEAN

		PRESENT ACTIVE			
ind.	*k^wi-néu-mi	ind.	*h_1é-k^wi-neu-m		*k^wi-néu-m
				inj.	
pres.	-si	imf.	-s		-s
	-ti		-t		-t
	-nu-més		-nu-mé		-nu-mé
	-th_1é		-té		-té
	-énti		-(e)nt		-ént
sub.	*k^wéi-oH	opt.	*k^wi-nu-iéh_1-m	imp. I	II
	-eh_1i		-s	*k^wi-nú(-d^hí)	-tṓd
	-e		-t	-néu-tu	-tṓd
	-omom		-ih$_1$-mé		
	-eth$_1$e		-té	-nu-té	-tṓd
	-o		-néu-ih$_1$-nt	-éntu	
ptc.	*k^wi-nu-ént-				
		PRESENT MIDDLE			
ind.	*k^wi-nu-mh_2	ind.	*h_1é-k^wi-nu-mh_2		*k^wi-nu-mh_2
				inj.	
pres.	-sth$_2$ó	imf.	-sth$_2$o		etc.
	-tó		-to		
	-me(s)$d^h h_2$		-me(s)$d^h h_2$		= ind.
	-d^hue		-d^hue		
	-ntro		-ntro		
		opt.	*k^wi-nu-ih$_1$-h_2	imp. I	II
			-th$_2$ó	*k^wi-nu-sué	-tṓd
			-ó	-tó?	-tṓd
			-mé(s)$d^h h_2$		
			-d^hué	-td^{h}ue	-tṓd
			-ró	-ntó?	
ptc.	*k^wi-nu-m$h_1$nó-				