Chapter I

Latin and Indo-European

1.1 Introduction

Latin is an Indo-European language. This means that Latin is genetically related to most of the modern (and the ancient) languages of Europe, as well as many languages of India, Iran and Central Asia. The genetic relationship accounts for the large numbers of similarities, both in vocabulary and in grammar, between Latin and Greek, Sanskrit, Gothic, Old Irish and many other ancient languages which no alternative hypothesis (such as chance similarity, linguistic borrowing or convergence) can explain. Over the last 200 years linguists have undertaken a systematic comparison of the similarities between the Indo-European (henceforth IE) languages to build up a picture of what the non-attested parent ('Proto-Indo-European', henceforth PIE) must have looked like. The reconstruction of PIE is, in places, highly abstract and highly complex, and for many individual features there is still considerable debate amongst experts in the field as to which reconstruction is the most plausible. Even so, it is possible to arrive at a picture of the parent language which is widely accepted, and use that to set the background to the development of Latin. The reader will have to take much of what is said about PIE on trust in this chapter, since this is not a book about PIE, but about Latin.

Why should the historian of Latin be interested in PIE? Apart from the intrinsic interest of knowing the relationships between Latin and other languages, we can suggest a number of reasons. Firstly, in order to understand the development of Latin, it is necessary to see what it started out

as. Thus the development of the Latin verbal system, or Latin word order, has its roots already in PIE structures. Secondly, a knowledge of the background to Latin can help assess the question of its relationship to neighbouring languages – as we shall see in the next chapter. Thirdly, a knowledge of PIE may actually help us to understand some features of Latin vocabulary or grammar. To take a single example, one of the earliest Latin inscriptions known is a sixth century graffito scratched around a pottery vessel, known as the 'Duenos vase' (CIL I^2 4, see 1.4.5 below). The final 15 letters of the inscription read *nemedmalostatod*, and this was long recognized as *ne med malos (s)tatod* an earlier form of *ne me malus stato* not me-ACC bad-NOM set.3sg.IMPER 'let no bad man set me', although the use of the verb *sto* 'I stand, set' in this context was unexplained. Comparative Indo-European linguistics, however, offered a solution to this problem (first proposed by Rix 1985). Other IE languages, such as Irish and Hittite, share a verbal root which can be reconstructed as **tā-* (**teh*$_2$-) and which means 'steal'. If we assume that this verbal root also survived into an early stage of Latin, then we can interpret the sequence as *ne me malus* **tato* not me-ACC bad-NOM steal.3sg.IMPER 'let no bad man steal me', a commonplace formula on inscriptions on moveable objects in the ancient world. This attestation remains the only appearance of this verbal root in the whole Latin corpus, and its meaning is only recoverable through IE comparison.

1.2 The IE Language Family

The IE language family comprises over 80 different languages and varieties. All of the living languages, and most of the varieties which are no longer spoken can be assigned to one of the subgroups of the family. Some ancient languages have left such scanty remains that their position in the family, and in some cases, even their membership of the family, remains in doubt. As we shall see in the next chapter, some of these scantily attested languages are relevant to the early history of Latin, and we shall discuss them in more detail there. Here we shall confine ourselves to giving an overview of the different branches of the IE language family.

1 *Anatolian*. The Anatolian branch is the earliest attested branch of Indo-European. The best attested language in the Anatolian family is Hittite, which is written in the cuneiform script, adopted from Semitic languages of the ancient Near East and for which the earliest texts date from the sixteenth century BC. A number of other languages are now also recognized to belong to the Anatolian family. Two others are recorded from the period before 1000 BC, both

in cuneiform (Palaic and Luwian – Luwian is also attested in a hieroglyphic script which is not used for any other language), and from a later period other languages are recorded in alphabetic scripts, including Lydian, Lycian and Carian.

2 *Greek.* The Greek branch of Indo-European is the second earliest attested, with texts written in the Linear B syllabary surviving from the fourteenth century BC and later. Greek is extensively attested in alphabetic script from the eighth century BC onwards.

3 *Indo-Iranian.* The two large language families termed Indic and Iranian share a number of common innovations which guarantee that they both derive from the same branch of Indo-European. The first evidence for Indo-Iranian is also in the second millennium BC, and consists in the inclusion of some terms and phrases relating to riding and horsemanship in cuneiform sources. The major early textual remains of the Indic branch are the hymns of the Rg-Veda (written in an archaic form of Sanskrit, often termed Vedic), and of the Iranian branch the Gathas, the hymns attributed to Zarathrustra in the Avesta (their language is known as Avestan or Gathic Avestan). Both of these texts were orally transmitted for centuries before being written down, but internal evidence suggests that they are both of great antiquity, and scholars generally assign a date to around 1000 BC for the composition of the Gathas and a couple of centuries earlier for the oldest Vedic hymns. Indo-Iranian, Greek and Anatolian are the three most important branches for the reconstruction of PIE.

4 *Latin and the languages of Italy.* As we shall see in the next chapter, it is a moot point how closely the IE languages of Italy are related to each other. Several subgroups are recognizable: Latino-Faliscan, comprising Latin and the neighbouring language Faliscan which are attested from the seventh–sixth century BC, although the early inscriptions are short and difficult to interpret in both languages; the Sabellian group, known principally through Oscan and Umbrian and attested first in the South Picene inscriptions which date from the sixth century BC; Venetic, attested in short inscriptions from the sixth century BC is also IE. The Messapic language, attested from inscriptions from the same date in the area at the extreme south-east of Italy shows greater divergence from the other languages of Italy.

5 *Celtic.* The only surviving languages of the Celtic branch are Irish, Scots Gaelic, Welsh and Breton, but the family once extended over a much wider section of Western Europe. The earliest attestations of Celtic are inscriptions from France, Italy and Spain in the centuries immediately before and after the beginning of the Christian era. Extensive textual evidence for Celtic is much later, with the first Old Irish glosses recorded in the seventh century AD. The interrelationship

of the Celtic languages is still debatable, but the following subgroups are recognized:

(a) Goidelic: the branch which comprises Irish, Scots Gaelic and Manx.
(b) Brythonic: the branch which comprises Welsh, Cornish and Breton.
(c) Celtiberian, known from inscriptions in Spain.
(d) Gaulish, known from inscriptions mainly in France.
(e) Lepontic, known from inscriptions in northern Italy.

Owing to an imperfect knowledge of branches (c), (d) and (e), it is difficult to be sure whether a 'continental Celtic' sub-group, comprising all the Celtic languages from outside the British Isles with the exception of Breton, actually reflects any linguistic reality.

6 *Germanic.* The Germanic language group is first known from sources in the first millennium AD; the first extensive text is the Gothic Bible translation made in the fourth century. Old English is attested from the eighth century, and Old High German, Old Saxon and Old Norse from the following century.

7 *Armenian.* The Armenian branch comprises just one language, known in its classical form from the Bible translation and theological and historical works written in the fifth century AD.

8 *Slavic.* The first texts to record a Slavic language are the Bible version and translations of Greek texts made by Cyril and Methodius in the late ninth century.

9 *Baltic.* The Baltic subgroup comprises Lithuanian, Latvian and the now extinct Old Prussian. The first texts were written in the fourteenth–sixteenth centuries.

10 *Albanian.* Albanian has only a relatively shallow time depth, being first attested in texts written by missionaries and others from the late Middle Ages to the early modern period.

11 *Other poorly attested languages.* There are also a number of languages which are only known from short inscriptional texts or glosses recorded by Classical authors which are reckoned to be IE, but whose relationship to other languages remains in doubt. These include Phrygian, Thracian, Illyrian, Sicel and Lusitanian.

1.3 Reconstructed PIE

The reconstruction of PIE entails the assumption that a single language was spoken at some point in time from which all the different IE varieties have evolved. However, the reconstructed picture can never reach the stage of giving an adequate description of PIE. This is due to the nature of reconstruction through the **comparative method** (CM). The CM operates

through identification of sets of correspondences in languages which are known to be related, and forming of hypotheses to explain the correspondence. We may, for example construct a correspondence set of word forms with identical meaning and similarity of form, as follows:

Latin	Greek	Sanskrit	English
pater	*patēr*	*pitar-*	*father*
pes	*poûs*	*pad-*	*foot*
plenus	*plērēs*	*pūrṇá-*	*full*
pro	*pró*	*prá*	*for*
pellis	*pélas*		Old English *fell* 'hide'
pecu		*paśú*	Old English *feoh* 'livestock'
piscis			*fish*

In all these words (and several others) we see a correspondence between initial *p-* in Latin, Greek and Sanskrit, and initial *f-* in English. The words are not limited to one particular lexical field and they represent core items in the lexicon. We can reconstruct a single PIE phoneme as the forebear of these sounds in the daughter language, traditionally denoted **p*. The same process is used to reconstruct the whole phonemic system for PIE. When we come to morphology, however, we find reconstruction is not so straightforward. To take a notorious example, we can compare the genitive singular of the *o*-stem declension (the Latin 2nd declension; in this table we have added further IE languages to those given above):

Latin	(Homeric) Greek	Sanskrit	Old English	Hittite	Lithuanian
-ī	*-oio*	*-asya*	*-es*	*-as*	*-o*

These forms are not reconcilable to a single prototype, and in order to make sense of the differences one must hypothesize motivations for replacement of an earlier form in one language branch or another. The Hittite ending *-as* is identical with the nominative singular ending *-as* (both can be derived from **-os*), and this is usually seen as an especially archaic form, and one which would be liable to be replaced in order to disambiguate the two categories. The Greek and Sanskrit forms can both be derived from an extended form **-osyo*, which is found in other branches of IE, suggesting that the replacement of **-os* already took place within the parent language. It is clear that in order to explain these different genitive singular endings, we must reconstruct a proto-language with diachronic, or dialectal, variation. It can thus be difficult to reconcile the reconstructed morphology to the reconstructed phonology – are we to assume that the different chronological or dialectal variants of the proto-language shared the same phonemic system? This seems unlikely from what we know of

attested languages, but there is no way to restrict the reconstruction of phonemes to one particular morphological reconstruction.

The CM gives the impression that reconstructed PIE is a single point from which the daughter languages all derive separately. In actual fact, it is unlikely that the reconstructed data that linguists operate with were concentrated together in an actual speech-community at one time and place. It is more likely that the reconstructed items are diffusely arrayed in time and space and across the speaker population. The comparative linguist must therefore draw up a framework in order to fit the reconstructed data into plausible temporal and spatial slots. For example, in order to explain the reconstruction of both a genitive singular marker **-os* and **-osyo*, one model would propose that the language ancestral to Hittite and the rest of the Anatolian branch split off from PIE at an earlier date than other languages. The only check on whether this model is correct is its own explanatory power and internal consistency, and it may be possible to construct two, or more, separate models which both give adequate explanations of the reconstructed data. In dealing with hypotheses about the Indo-European language family, it will be necessary to bear these methodological points in mind.

1.4 Latin and IE

A presentation of reconstructed PIE is beyond the scope of this work. In this section, we shall present some of the salient features of PIE for the history of Latin, in order to give an idea of what Latin has inherited from PIE and where it has diverged.

1.4.1 Phonology

The reconstruction of PIE is most secure in the domain of phonology. This is because the phoneme system contains a small, finite and ordered set of elements. Phonological change is, on the whole, regular, well studied and well documented. This means that it is usually possible to compare two cognate sounds, such as Latin *p* and English *f* in the example given above, and identify the sound which is most likely to be ancestral to them. In the case of *p* and *f*, for example, we know of many secure examples of the change *p* > *f* in the world's languages, but far fewer of *f* > *p*, so we can reconstruct the ancestral sound as **p* (written with an asterisk since it is a hypothetical, unattested form). However, we must be aware of the limits of our reconstruction; we may be able to reconstruct the phonemic system without complete certainty about the phonetic realization of those phonemes. We have no way of knowing, for example, whether a

reconstructed ***d*** was a true dental or an alveolar or some other linguo-dental consonant, although we can be sure that it was opposed to two other consonants with the same place of articulation, ***t*** and ***d^{h}***, and other consonants with the same manner of articulation, but a different place of articulation, such as ***ǵ***. Nor do we know for certain that the reconstructed phonemes ***d*** and ***ǵ*** were distinctively voiced, and some models of PIE claim that they had a different manner of articulation. In reconstructed PIE, it is the oppositions between the phonemes that are important, rather than the distinctive features *per se* that articulate these oppositions. The standardly reconstructed phoneme system of PIE is as follows:

Consonants

Stops:

Labial	Dental	Palatal	Velar	Labio-velar
*p	*t	*k′	*k	*k^{w}
(*b)	*d	*g′	*g	*g^{w}
*b^{h}	*d^{h}	*g′^{h}	*g^{h}	*g^{wh}

Fricatives: *s

'Laryngeals': *h$_1$, *h$_2$, *h$_3$

Nasals: *m, *n

Continuants: *r, *l, *y, *w

Vowels

*e, *o, *a (*ē, *ō, *ā)

*ṃ, *ṇ, *ṛ, *ḷ, *i, *u (*ī, *ū)

Some explanatory points should be made about the above tables:

1 'Labio-velars' is the term given to a series of consonants which have reflexes in Eastern IE languages (Indo-Aryan, Iranian, Slavic, Baltic, Armenian) as velars or palatalized velars, but which in the earliest stages of Western IE languages (Greek, Germanic, Celtic, Latin) appear as velars with concomitant lip-rounding, or sometimes as labials. Typical cognate sets are the following:

k^{w}o-/k^{w}i- 'who?': Sanskrit ***ká-***, Greek ***tís***, Germanic (English) ***who***, Latin ***quis***

ǵ^{w}em- 'come': Sanskrit ***gam-***, Greek ***baínō***, Germanic (English) ***come***, Latin ***uenio***

ǵ^{w}ow- 'cow': Sanskrit ***gav-***, Greek ***boús***, Germanic (English) ***cow***, Latin ***bos***

(Note that in some of the Greek and English cognates, the labio-velars have been further obscured by specific sound-changes: *tís* shows a characteristic Greek development to a dental before a front vowel, and

in English *cow* and *come* the labial element has been lost before a back vowel.)

It can be seen from the above examples that Latin *qu-* derives from PIE **k*^{w}, but **g*^{w} develops differently. In most words it is continued by Latin *u* [w] but there are also cases, as *bos*, where it appears as a labial stop. The words which show this development (and also forms which have *p* in place of PIE **k*^{w}) are normally explained as borrowings from other IE varieties spoken in Italy which regularly develop labial stops from original labio-velars. These will be discussed more fully in the next chapter. Alongside labio-velars, there are also 'velar' and 'palatal' series, which have different outcomes in some IE languages, but merge as velar consonants in prehistoric Latin. Schrijver (1991: 425–36) has suggested that the two series had different effects on a following **e*: **ke-* giving Latin *ca-* (as *carpo* 'I pluck' < **skerp-*), and **k'e-* giving Latin *ce-* (as *cedo* 'give!' < **k'e-*). Unfortunately, there are only six etymologies to support Schrijver's claim, and a few counterexamples, so Schrijver's theory remains unproven at present (see Meiser 1998: 82f.).

2 'Voiced aspirates' is the traditional term for a series of consonants which are reconstructed from the comparison of voiceless aspirates *p*^{h}, *t*^{h}, *k*^{h} in Greek, voiced aspirates *b*^{h}, *d*^{h}, *g*^{h} in Sanskrit, and voiced consonants in Germanic (English *b*, *d*, *g*), Iranian, Armenian, Baltic and Slavonic. Note the following examples of cognate sets for PIE **b*^{h} and **d*^{h}:

- **b*^{h}*er-* 'carry': Greek ***p***^{h}*érō*, Sanskrit ***b***^{h}*árāmi*, Germanic (English) ***b****ear*, Armenian ***b****erem*
- **neb*^{h}*-* 'cloud': Greek *né****p***^{h}*os*, Sanskrit *ná****b***^{h}*as-*, Germanic (German) *Ne****b****el* 'fog', Old Church Slavonic *ne****b****o* 'heaven'
- **d*^{h}*uh*$_2$*mo-* 'vapour, smoke': Greek ***t***^{h}*ūmós*, Sanskrit ***d***^{h}*ūmá-*, Old Church Slavonic ***d****ymŭ*
- **rud*^{h}*ro-* 'red': Greek *eru****t***^{h}*rós*, Sanskrit *ru****d***^{h}*irá-*, Germanic (English) *re****d***, Slavonic (Russian) *ru****d****yj* 'red-haired'.

It can be seen from the table that these consonants are not opposed to a voiceless aspirate series (as the voiced aspirates of Sanskrit are), and it may be better to envisage them as originally 'breathy-voiced' in PIE, although we shall retain the traditional terminology of 'voiced aspirate'. The reconstruction of voiced aspirates without voiceless aspirates has been held to violate a linguistic universal, and has led to attempts to refashion the PIE consonant stem entirely. One such attempt, independently proposed by the American Paul Hopper and the Georgian Thomas Gamkrelidze (see Szemerényi 1996: 152), involves re-casting the reconstructed voiced stops as ejectives (or 'glottalics'), and then interprets the opposition between the other two series as only reliant on the feature

[voice], with aspiration not a distinctive feature. The question of the reconstruction of the PIE stops is still under debate, but the 'glottalic' model does not seem to have any extra explanatory power when it comes to the derivation of the Latin consonant system from PIE, since PIE **p*, **t*, **k*, etc. are continued as voiceless stops in Latin and **b*, **d*, **g*, etc. as voiced stops, whereas the voiced aspirate series develop either to Latin fricatives in word-initial position or to voiced stops word-medially. Thus the Latin cognates to **b^her-*, **neb^h-*, **d^huh$_2$mo-* and **rud^{h}ro-* are ***f**ero*, *neb**u**la*, ***f**umus* and *r**u**ber*. We shall return to investigate these Latin developments more fully in the following chapter, but for our present purposes we need only state that the Latin reflexes are most economically derived from original 'voiced aspirates': the word-initial development to fricatives can be accounted for by the original feature [aspiration] (cross-linguistically the move from aspirates to fricatives is widely attested), whereas in word-internal position the feature [voice] is preserved.

3 'Laryngeals' is the traditional term used to refer to three consonants which are hypothesized to have existed from their effect on neighbouring vowels, and whose presence can be detected by systematic vowel alternations in different morphological environments. Laryngeals have no direct reflexes as consonants in any IE language outside the Anatolian branch, where they are sometimes continued by velar or pharyngal fricatives (and even there **h_1* may leave no trace). Despite their widespread loss, laryngeals appear to have had different outcomes in different language branches, and they must be reconstructed for early, prehistoric stages of Latin in order to explain certain developments. The treatment of laryngeals in Latin is generally similar to that found in neighbouring IE languages, although aspects of their behaviour are complex, and there are still areas of disagreement (Schrijver (1991) gives a detailed treatment of laryngeal developments in Latin, in a book of over 500 pages). The basic effect of laryngeals on neighbouring vowels is as follows: we have omitted the details of the development in Anatolian languages, citing Hittite or Luwian forms only where the laryngeal has a consonantal outcome (note that *H* = any of **h_1* **h_2* **h_3*):

(a) following vowels laryngeals are lost with lengthening of a preceding short vowel; the three laryngeals have differing effects on the vowel **e*:

**iH* > Latin *ī*, Greek *ī*, Sanskrit *ī*
g^{w}ih$_3$wo-* 'alive' > Latin *uī**uus*, Sanskrit *j**ī**vá-*
**uH* > Latin *ū*, Greek *ū*, Sanskrit *ū*
d^{h}uh$_2$mo-* 'vapour, smoke' > Latin *fū**mos* Greek *t^h**ū**mós*, Sanskrit *d^h**ū**má-*, Hittite *tu**hh**ai-*

**oH* > Latin *ō*, Greek *ō*, Sanskrit *ā*
**d*^{h}*oh*$_1$- 'put, place' in Latin *sacer-dōs* 'priest'
**eh*$_1$ > Latin *ē*, Greek *ē*, Sanskrit *ā*
**d*^{h}*eh*$_1$- 'put, place' > Latin *fēci*, Greek *tít*^{h}*ēmi*, Sanskrit *dád*^{h}*āmi*
**eh*$_2$ > Latin *ā*, Greek *ā* (in Doric and other dialects), *ē* (in Attic and Ionic), Sanskrit *ā*
peh*$_2$- 'pasture' > Latin *pāsco*, Hittite ***pahs*-
**eh*$_3$ > Latin *ō*, Greek *ō*, Sanskrit *ā*
**deh*$_3$- 'give' > Latin *dōs*, Greek *dídōmi*, Sanskrit *dádāmi*

(b) before vowels laryngeals are generally lost, but, again, the three laryngeals have differing effects on the vowel **e*:

**Hi* > Latin *i*, Greek *i* (but **h*$_2$*i* may go to *ai*), Sanskrit *i*
h*$_2$*im*- 'copy' > Latin ***i**mitor* 'I copy', Hittite ***hi****mna*- 'substitute'
**Hu* > Latin *u*, Greek *u* (or possibly *eu*, *au*, *ou*), Sanskrit *u*
**h*$_1$*us-to*- 'burnt' > Latin *ustus*, Sanskrit *uṣṭá*-
**Ho* > Latin *o*, Greek *o*, Sanskrit *a*
h*$_2$*owi*- 'sheep' > Latin ***ou**is*, Greek ***ó****wis*, Sanskrit ***á****vi*-, Luwian ***ha****wis*
**h*$_1$*e* > Latin *e*, Greek *e*, Sanskrit *a*
h*$_1$*esti* 'is' > Latin ***e**st*, Greek ***e****stí*, Sanskrit ***a****sti*
**h*$_2$*e* > Latin *a*, Greek *a*, Sanskrit *a*
h*$_2$*ent*- 'front' > Latin ***a**nte*, Greek ***a****ntí*, Hittite ***ha****nt*-
**h*$_3$*e* > Latin *o*, Greek *o*, Sanskrit *a*
h*$_3$*ek*^{w}- 'eye' > Latin ***o**culus*, Greek ***ó****mma* (< **óp-m*-), Sanskrit ***á****kṣi*

(c) when laryngeals stand between other consonants, they develop to vowels:

**Ch*$_1$*C* > Latin *a*, Greek *e*, Sanskrit *i*, other IE language branches *a* or lost
d*^{h}*h*$_1$*(k)tó*- 'put' > Latin ***fa**ctus*, Greek *t*^{h}***e****tós*, Sanskrit ***hi****tá*-
**Ch*$_2$*C* > Latin *a*, Greek *a*, Sanskrit *i*, other IE language branches *a* or lost
sth*$_2$*tó*- 'standing, stood' > Latin ***sta**tus*, Greek ***sta****tós*, Sanskrit ***sthi****tá*-
**Ch*$_3$*C* > Latin *a*, Greek *o*, Sanskrit *i*, other IE language branches *a* or lost
dh*$_3$*tó*- 'given' > Latin ***da**tus*, Greek ***do****tós*

4 The reconstruction of the PIE vowel **a* and the long vowels. As the above tables relating to laryngeals show, the reconstruction of these vowels is closely related to the reconstruction of laryngeals. If Latin *a* can go back to PIE **h*$_2$*e* or a laryngeal between two consonants, then is there any need to reconstruct a separate PIE phoneme **a*? If Latin long *ē* can be derived from a sequence **eh*$_1$, can we then dispense with the reconstructed vowel **ē* in the PIE phoneme inventory? We have followed

a model of PIE which holds that both **a* and the long vowels should be reconstructed, although the reasons for this are dependent upon phenomena in the Indo-Iranian and Anatolian languages. For the history of Latin, however, the difference between original **h_2e* and **a*, or between original **ē* and **eh_1*, is irrelevant, since the laryngeal consonants were lost at such an early stage in prehistory that they make no difference to the language.

5 The short vowels **m̥*, **n̥*, **r̥*, **l̥*, **i*, **u* have a special status in PIE, since they act as allophones of the consonants **m*, **n*, **r*, **l*, **y*, **w* respectively, depending on their position in the word. For example, consonantal **r* occurs adjacent to a vowel sound: as **$ph_2term̥$* 'father-ACC' (Greek *patéra*, Sanskrit *pitáram*), and the vocalic **r̥* between two consonants: **$ph_2tr̥su$* 'father-LOC.PL' (Greek *patrási*, Sanskrit *pitr̥ṣu*). As the example of **$ph_2tr̥su$* shows, Sanskrit has retained the vocalic allophone of **r* but in Greek it regularly developed to *ra* or *ar*. Latin *u* and *i* still retain some vestiges of this alternation between consonant and vowel: for example, in the paradigm of the verb *uoluo, uoluit* 'he rolls' (with *u* = [w]), but *uolutus* 'rolled'. However, in Latin vocalic *u* and consonantal *u* are now separate phonemes (note the minimal pair *uoluit* [wolwit] 'he rolls' and *uoluit* [woluit] 'he wanted'). In Latin the PIE short vowels **m̥*, **n̥*, **r̥*, **l̥* have developed to combinations of vowel and consonant, **em*, **en*, **or* and **ol* respectively, as shown by the following etymologies:

k′m̥tom* 'hundred' > Latin ***centum*, Greek *hekatón*, English ***hun**d**red***
tn̥to-* 'stretched' > Latin *in-tentus***, Greek ***tatós***, Sanskrit ***tatá-***
k′r̥d-* 'heart' > Latin ***cord-*, Greek ***kardía***
mld-* 'soft, weak' > Latin ***mollis*, Greek *bladús*, Sanskrit *mr̥dú-*

1.4.2 Latin morphosyntactic developments from PIE

The term 'ablaut' (also known as 'vowel gradation') describes a systematic alternation of vowels within a morphological paradigm. For PIE the following types of ablaut can be reconstructed.

1 Shift of word-accent within a paradigm with a concomitant loss of the unaccented vowel (quantitative ablaut). For example, the reconstructed paradigm for the noun 'god':

**dyéw* 'god' vocative	Greek *Zeû*, Sanskrit *dyàus*
**diw-és* 'god' genitive	Greek *Di(w)-ós*, Sanskrit *div-ás*

(note that **y/*i* are allophones of a single phoneme, as are **w/*u*). Or the reconstructed present tense paradigm of the verb 'go':

**éy-mi* 'I go'	Greek *eî-mi*, Sanskrit *émi* In Sanskrit, *e* derives from **ei*
**i-mé* 'we go'	Greek *í-me-n*, Sanskrit *i-má-si*

2 Change in vowel quality within the same syllable (qualitative ablaut). For example the vowel of the suffix in the word meaning 'family' or 'stock' (the suffix is usually represented as **-e/os-*).

ǵénh$_1$-os*** 'family, stock' nominative Greek *gén-**os***, Latin *gen-**us***
ǵénh$_1$-es**-os* 'family, stock' genitive Greek *gén-**e**-os*, Latin *gen-**er**-is*

The processes of quantitative and qualitative ablaut mean that every morpheme in PIE has (at least) three alternative morphs, one with the vowel **e*, one with the vowel **o* and one with no vowel. There are also reconstructed ablaut forms with a long vowel, **ē* or **ō* (for example, the nominative singular of the word for 'god' is sometimes reconstructed **dyēws*). However, these forms are more restricted in distribution, and the motivation for them is disputed.

In many roots, the effects of 'laryngeals' or other sound changes have disguised the original pattern and obscured the relationship between different ablaut forms. Latin *datus* 'given' < **dh$_3$-to-* and *dōs* 'gift' < **deh$_3$-t-*, for example, are respectively reconstructed with the root in an ablaut form without a vowel, and one with the vowel **e*, although the vowels in Latin are *a* and long *o*. Compare also the attested Latin form with the reconstructed ablaut variants in the following:

factus 'made' < **dʰh$_1$k-to-*
fēcī 'I made' < **dʰeh$_1$k-*
imitor 'copy' < **h$_2$im-*
aemulus 'rival' < **h$_2$eim-*

The reconstruction of laryngeals thus enables many different vowel alternations to be reconciled to either an **e/*o* or an **e/*zero alternation.

In order to illustrate the operation of ablaut and its fate in Latin we can take the suffix which is used to form comparatives of adjectives. In PIE this could take the form **-yos-* (cf. Latin *melius* 'better' which continues an earlier **mel-yos*), **-is-* (continued in Latin *mag-is* 'more'), and **-yes-* (probably continued in Latin *mulier* 'woman' < **mḷ-yes-*, perhaps originally part of the paradigm of *melior*, but with a later shift in meaning (from 'the better woman' to 'the best woman in the house', hence 'wife, woman', see Klingenschmitt 1992: 130). There was also a form with lengthened vowel *-iōs* which was restricted to the nominative singular. The Latin paradigm of the comparative, outside of the neuter nominative/accusative singular, alternates between *-ior* in the masculine and feminine nominative singular (as *melior*) and *-iōr-*, with lengthened vowel, in the rest of the paradigm. This pattern is a completely new development, and shows the spread of the lengthened form of the suffix throughout the

paradigm, with subsequent phonological changes. It is worth sketching out the hypothetical development of the paradigm in Latin prehistory, since this shows not only the analogical developments which led to the loss of ablaut as a regular process, but also the interchange between sound change and analogy in the creation of Latin paradigms.

Stage I	**-yōs*	nominative singular masculine
	**-is*	nominative/accusative singular neuter
	**-yos-m̥*	accusative singular masculine
	etc.	

The first change to affect this paradigm in Latin prehistory is the spread of the ablaut form **-yos* from the masculine forms to the neuter; Latin *melius* thus represents a very early replacement of **melis*. The old form of the neuter in **-is* survives only in *magis* 'more', which early became isolated from its paradigm owing to its widespread use as an adverb.

Stage II	**-yōs*	nominative singular masculine
	**-yos*	nominative/accusative singular neuter
	**-yos-m̥*	accusative singular masculine
	etc.	

The next change to affect the paradigm was the spread of the long *ō* from the nominative to the rest of the paradigm, with the exclusion of the neuter singular, which did not enter into any of the subsequent paradigmatic changes (hence Classical Latin *-ius*).

Stage III	**-yōs*	nominative singular masculine
	**-yōs-em̥*	accusative singular masculine

Stage III must have been reached at the beginning of the historical period, since we have a few forms cited in later Latin authors, such as *meliosem* and *maiosibus*. However, in the course of the fourth century BC intervocalic **-s-* developed to *-r-* in Latin. This change reintroduced irregularity into the paradigm, since it led to a paradigm of the following type (a separate change also led to **y* realized as Latin *i* by this date):

Stage IV	**-iōs*	nominative singular masculine
	-iōr-em	accusative singular masculine

In order to avoid this irregularity, the form of the suffix was extended to the nominative masculine from the oblique cases, (although the neuter singular nominative was again left untouched by this change).

Stage V	*-iōr*	nominative singular masculine
	-iōr-em	accusative singular masculine

This stage is attested in Plautus, where the vowel of the final syllable of the nominative singular of a comparative can still be scanned as long, as *stultiōr*. But a change which took place at the beginning of the second century BC led to long vowels being shortened before final *-r*, *-l* and *-t*, and led to the paradigm as we know it from Classical Latin.

This rather lengthy exposition shows that ablaut had ceased to be a productive morphological process before the Early Latin period. While we can find traces of ablaut throughout Latin, not every morphological alternation of vowel quantity or quality can be attributed to it, and there may be an explanation within the history of the language. In some cases there may be two competing accounts of the same phenomenon. For example, there is a curious alternation between the nominative stem *iecur* 'liver' and the oblique forms such as genitive *iocineris* which exist alongside genitive *iecineris* and *iecoris* (see Rix 1965 for attestations). This word preserves a very archaic declension type, with a nominative/accusative marked in *-r* and a stem formed with *-n-* in the other cases, which is also found in Hittite, Sanskrit and Greek, but lost in other IE languages. Given the archaic nature of the paradigm, it has been thought that the alternation between the root form *iec-* and *ioc-* reflects an archaic ablaut pattern (Schindler 1994: 398). However, Latin nouns have generally obliterated all traces of paradigmatic ablaut in the root – so Latin has a genitive *Iouis* from **dyew-es* beside *Iū-piter*, from the vocative **dyew* (with added *-piter* 'father'), in place of **diwés* which lies behind the Greek and Sanskrit forms (see above); and another possible account for *iocineris* has been given by Klingenschmitt (1992: 118) who takes *iocineris* to be metathesized from an earlier genitive *iecinoris* (with *-or-* from the nominative **iecor* > *iecur*).

1.4.3 Nominal declensions

PIE nouns were inflected for case and number. The case system comprised all the paradigmatic cases found in Latin (including the locative), and one further case, the instrumental which had the grammatical sense of *instrument* or *means* and could also be used locally to denote *path* or *association*. The locative case survived into Latin long enough to be retained in place names (such as *Romae* 'at Rome') and a handful of nouns in Classical Latin (such as *ruri* from *rus* 'countryside' and *humi* from *humus* 'ground'); in Early Latin there is a greater number of locatives, including forms such as *militiae* 'in the army' in Ennius. In contrast, the instrumental was lost early in the prehistory of Latin, and its functions were merged with those of the ablative. The merger of instrumental and ablative

probably arose through overlap between the function ORIGIN of the ablative and PATH of the instrumental – compare the analogous overlaps in English between 'he was hit by/with a stone', 'he came from the next room/he came through the door.' Formally, the merged case was usually denoted by the old ablative marker. This is demonstrably the case for the second (*o*-stem) declension, where the ablative marker **-ōd* is directly continued in Early Latin *-od*, Classical Latin *-ō*. The other stem classes did not have a separate marker for the ablative in PIE, but in a prehistoric Latin innovation, shared also by other languages of Italy, the pattern of ablative marked by long vowel + **d* was extended. This is the origin of the 1st declension ablative *-a* (Early Latin *-ad*), 4th declension *-u* (Early Latin *-ud*), and 5th declension *-e* (Early Latin *-ed*). The 3rd declension ending of Classical Latin, *-e* may instead continue the inherited locative ending **-i*, reflecting the late syncretism of the locative to the ablative-instrumental (all three cases being widely used after prepositions). In Early Latin there is inscriptional evidence for endings *-ed* and especially *-id* in the 3rd declension (see Meiser 1992: 210–2 on the Early Latin forms).

Latin has also reduced the dimensions of the category of *number* from PIE, which had a dual, used to denote pairs of objects and formally surviving only in the Latin forms *duo* and *ambo*, and possibly also a separate 'collective' used to denote several inanimate objects conceived of as constituting a group. The reconstruction of the category 'collective' is disputed. In form, the collective is thought to have taken the ending of the neuter plural, and originally it construed with singular verbs, as neuter plurals still are in some of the earlier IE languages. Vestiges of the collective might exist in Latin heteroclite plurals such as *loca* alongside *loci* from *locus* 'place', although there is little or no discernible difference in meaning here, and in the curious agreement rule of Classical Latin whereby an adjective in concord with two conjoined inanimate nouns of differing gender is inflected as neuter, as in the Livian formula *porta et murus tacta sunt* gate-FEM and wall-MASC touched-NEUT.pl be-3pl 'the gate and wall were struck [by lightning].'

The actual *forms* of the different case inflections in Latin sometimes continue PIE forms directly, as is the case with the accusative singular ending *-m* which derives from a PIE marker **-m*; in the consonant declension the ending *-em* shows the normal Latin reflex of a vocalic **-m̥*. Other endings differ from PIE nominal inflections, but can be derived from earlier *pronominal* endings. The analogical extension of case endings from pronouns to nouns is a process that continued from within PIE itself, where the special *o*-stem ablative ending, **-ōd*, most likely originates from a pronominal declension, all the way through to Classical Latin, in which endings such as genitive *-ius* are extended to some nominals (hence

Table 1.1 Early Latin case endings and their origins

	PIE noun endings	PIE pronoun endings	I (*a*-stems)	II (*o*-stems)	IIIa (C-stems)	IIIb (*i*-stems)	IV (*u*-stems)
Nom.sg. masculine/ feminine	*-s (except *a*-stems)	*-ø	-a	-os	-s	-is, -s	-us
Nom.Acc.sg.neut.	*-m/ø	*-d	(no neuters)	-om	ø	*i > -e	-u/-ū
Acc.sg.	*-m	*-m	-am	-om	-em (< *-m)	-im/-em	-um
Gen.sg.	*-es/*-os	*-osyo	-ās -āī	-ī -osio > -oeo	-es > -is -os > -us	*-eis	-ous/-uos
Dat.sg.	*-ei		-ai/-ā	-oi/-ō	-ei	-ei	-uei/-ū
Loc.sg.	*-i		-ai	-ei	*-i > -e	*-ēi	*-ēu
Abl.sg.	*-ōd/ø	*-d	-ād	-ōd	-e/-ēd	-īd	-ūd
Nom.pl.	*-es	*-oi	-ai	*-oi > -ei	-ēs	-eis > -īs	-ūs
Neut.pl.	*-a		(no neuters)	-a	-a	-ia	-ua
Acc.pl.	*-ms		-ās	-ōs	-ēs	-īs	-ūs
Gen.pl.	*-om	(*-āsom)	*-āsom > -ārum	-om -ōrom	-om	-iom	-uom
Dat./Abl.pl.	*-b^{h}os/*-ōis (*o*-stems) *-oisu (*o*-stem loc. pl.)		*-ais > -eis *-ābos > -ābus	-ois > -eis	-ibos	-ibos	-ibos -ubos

genitive *totius* from *totus* 'all'). Pronominal endings are usually extended first to the *o-* or *a*-stem declensions, reflecting the formal similarities between some pronominal stems and these declensions – compare, for example, the demonstrative/anaphoric pronoun with stem **to-/tā-* (**teh₂-*) (accusative **tom* and **tām* (**teh₂m*)) – and arising from the frequent collocation of demonstratives and nouns. Endings taken from the pronouns are usually restricted to these two declensions, as is the case with the nominative plural endings *-ai* (CL *-ae*) and *-oi* (CL *-i*), although as we have seen, the type of the ablative singular of the *o*-stems eventually spreads to all the declensions.

Table 1.1 gives a synopsis of the nominal declensions as they look in the earliest Latin texts, before the later monophthongizations. Note that not all of the forms given below are directly attested as such; many of them can only be assumed on the basis of their later shape in Latin. Where this is the case, unattested forms are shown with an asterisk. The table also includes the reconstructed PIE nominal, and where relevant to Latin, pronominal endings. Note the variety of different exponents for the same case often in the same declension; sometimes the difference reflects Indo-European alternants (*-ous/-uos* for genitive singular of *u*-stems), sometimes it appears to be peculiarly Latino-Faliscan (genitive singular *-ī*) versus the rare *-osio* (on the Lapis Satricanus, *c.*490 BC, and in the name *Mettoeo Fufetioeo* in Ennius *Ann.* 120 (Skutsch)); we shall consider this ending in more detail later in this chapter). Sometimes, as in the dative singular feminine *-ai* or *-a*, the difference results from sound changes which may have been dialectal.

Table 1.1 gives separate paradigms for consonant stem and *i*-stem nouns (denoted IIIa and IIIb) respectively. In Classical Latin there is still a distinction between the two paradigms in the genitive plural, where original consonant stem nouns mostly have the ending *-um*, original *i*-stem nouns the ending *-ium*. This explains some well-known 'irregularities' of the grammars, such as *canum*, genitive plural of *canis* 'dog', and *iuuenum*, gentive plural of *iuuenis* 'young man', both of which are originally consonant stems despite the nominative singulars in *-is*, and *mentium*, *gentium* etc. genitive plurals of *mens* 'mind', *gens* 'family' and suchlike, which were originally *i*-stems with nominative singulars **mentis*, **gentis* in which the *i* was lost by syncope. However, even in the genitive plural there is confusion between the two endings: *mensis* 'month' has genitive plurals *mensum* and *mensium* attested, *parens* 'parent' has *parentum* and *parentium*, and the consonant stem *nox* regularly takes the *i*-stem form *noctium*. In other cases in Classical Latin the picture is yet more muddled. The ablative singular in *-ī* is preferred for adjectives (even consonant-stem (C-stem) adjectives) and some nouns with a nominative singular in *-is*, but is not used for nouns such as *mens* and *gens*. The accusative singular

ending *-im* is restricted to a small set of nouns, and not used with adjectives. The Classical Latin situation is the endpoint of centuries of interaction between the two paradigms, which may have had its starting point in the early syncope of short *i* in nouns such as **mentis* (Classical *mens*) which led to their identification as a consonant stem. At all stages of attested Latin there is borrowing of endings between the two paradigms. In the case of the dative and ablative plural consonant stem nouns show a reflex of the *i*-stem ending *-ibos* from our earliest texts, and *i*-stem forms such as ablative singular *-id* are found more widely used with consonant stem nouns in early inscriptions than the scantily attested form *-ed*.

The sharp-eyed reader will have noticed that the table given for Latin nominal declensions does not include a column for the 5th declension. The 5th declension has no correspondence in any other IE language, and seems to have arisen through an association of various different nouns which had, or were interpreted as having, a stem in **-ē*, such as *rēs* 'possession' < **reh₁y-* and *diēs* 'day', abstracted from an original accusative **diēm*. Joining this group is a number of nouns in *-iēs* which seem to bear a relationship with 1st-declension nouns in *-ia* (note doublets such as *materiēs* and *materia*), although no completely satisfactory explanation for the origin of the suffix *-iēs*, has yet been found. The parallelism between the 5th and 1st declensions, which both contain predominantly feminine nouns, is further seen in the adaptation of the endings to the model of the *a*-stems. Thus the genitive singular *-ēī* replaces earlier genitive *-ēs*, just as in the 1st declension *-ās* was replaced by *-āī* in the third century BC. The *-ī* ending is taken from the 2nd declension, and the genitive plural *-ērum* is modelled after genitive plural *-ārum*.

1.4.4 The verbal system

Whereas the Latin nominal system largely continues the categories inherited from PIE (with the loss of some categories, such as dual, collective and instrumental), the Latin verbal system is radically different from the reconstructed PIE system. Indeed, the divergences between the verbal systems of the daughter languages are such that there is uncertainty over which reconstruction for PIE best explains the divergent developments in the daughter languages. The principal difficulty arises from trying to integrate the verbal system of the Anatolian languages with that which can be reconstructed for the other early branches of PIE. Traditionally, the picture of the PIE verb has been constructed from comparison of the Greek and Sanskrit verbal systems, with some assistance from Latin and Germanic. However, many of the verbal categories which exist in Greek and Sanskrit, such as the perfect, the aorist, and the optative and subjunctive moods, are absent from Anatolian, but various formal considerations

make it unlikely that these categories have just been lost. Instead, it is possible to draw up a different model of the PIE verb which promotes the Anatolian evidence, and sees the Greek and Sanskrit agreements as later innovations. The current debate over the reconstruction of the verbal system centres on the issue of the chronology of these changes (see Clackson 2007 ch. 5 for discussion). Is it possible that the Anatolian model just represents an earlier stage of PIE, and that the Greek-Sanskrit model can be retained in order to explain the Latin verb? Or should we view the Greek-Sanskrit model as viable only for Greek and Sanskrit, and inadequate for Latin? Current thinking in PIE is moving towards acceptance of the notion that the Anatolian languages did split off from the other PIE languages at an early stage, and consequently that the Greek-Sanskrit model may be valid for all the IE branches other than Anatolian, and we shall accordingly rely on this model of our presentation of the verb. However, as we shall see in the discussion of the endings of the Latin passive, in some cases it is possible that the Latin data is not best explained by this model.

The model of the IE verb arrived at by comparison of Greek and Sanskrit bears some similarity to the verb as known from Classical Latin. The Latin verbal paradigm opposes two basic stems, the *infectum* and *perfectum*, from which different tense and mood paradigms are formed – the present, future and imperfect indicatives, present and imperfect subjunctives, present and future imperatives derive from the infectum stem, and the perfect, future perfect and pluperfect indicatives, perfect and pluperfect subjunctives from the perfectum stem. In the same way the reconstructed PIE verb opposes three different stems, from which derive a number of paradigms encoding tense and mood, as exemplified in Table 1.2. In PIE, as in Latin, there is the further dimension of *voice*, which we shall discuss below. Several aspects of the system given above require immediate explanation. First, the difference between the stems. The present and aorist stem shared the same morphology: the endings of the imperfect

Table 1.2 Tense and mood in the reconstructed PIE verb

	Present stem	Aorist stem	Perfect stem
Indicative	Present Imperfect	Aorist	Perfect ?Pluperfect
Subjunctive	Present subjunctive	Aorist subjunctive	?
Optative	Present optative	Aorist optative	?
Imperative	Present imperative	Aorist imperative	?
Participle	Present participle	Aorist participle	Perfect participle

indicative are identical to those of the aorist indicative; the present subjunctive, optative, imperative and participle were formed in the same way as their aorist counterparts. The similarity of morphology mirrors a similarity of function. Both stems were used to refer to events, actions and processes, and differed only in the category of aspect. The exact nature of the aspectual difference is probably not recoverable, but broadly speaking the present stem corresponded to imperfective aspect and the aorist stem to perfective aspect. The PIE perfect stem (which is not to be confused with the Latin perfect) stands apart from the other two stems, both in morphology – the endings of the perfect were completely different from those used for the other two stems – and in function. Perfects appear originally to have referred to states, and, in Greek at any rate, the productive meaning of the perfect is a state which results from a past action. Originally, perfects could be used parallel to the present tense to refer to states in the present. Relics of this situation exist in the few Latin verbs where morphological perfects have present-referring meaning, such as *odi* 'I hate' or *memini* 'I remember'.

Latin has reduced the inherited system of three stems to two. The reduction reflects two separate processes, the replacement of a system fundamentally based on aspect with one centred on tense, and the re-interpretation of the PIE perfect to denote an action in the past rather than the state resulting from that action – re-interpretations of this sort are familiar from the history of the 'have' perfects of many Western European languages. These two developments meant that at a prehistoric stage Latin had two past-referring stems co-existing side by side, the old aorist and the old perfect. The two categories were merged together before our earliest extensive Latin records, although it is clear from the number of duplicate forms in Early Latin that the merger must have taken place relatively recently. Thus Classical Latin *facio* has a paradigm with perfect *feci*, which must reflect an original aorist stem, but in Early Latin the reduplicated perfect stem is also attested as *vhevhaked* (CIL I^2 3, from Praeneste, *vh* = *f*); *parco* 'I spare' has a perfect *peperci* in Classical Latin (from an old perfect) but in Early Latin it also shows a perfect *parsi* from an earlier aorist and the new formation *parcui*; *pango* 'I fix' has perfect *pepigi*, but also *panxi* from an old aorist in Ennius. Note that the merged 'perfectum' formation in Latin can encode both of the earlier functions of a perfect: present-referring *feci* 'I have made' (used with 'primary sequence') and *feci* 'I made' (used with 'historic sequence').

The injunctive and Latin primary/secondary endings

In Table 1.2, the present stem of the PIE verb is reconstructed with two different indicative formations, the present and the imperfect. The

morphology of these two tenses as they appear in Sanskrit is on the whole the same, except that each tense bears an extra marker, as can be seen clearly in the 3rd person singular:

present indicative	*bharat-i* 'he carries'	< PIE **b*^{h}*eret-**i***
imperfect indicative	*a-bharat* 'he was carrying'	< PIE ****e-****b*^{h}*eret*

the present indicative is marked with a final *-i*, and the imperfect has a prefix *a-* < PIE **e-* (called the *augment* in traditional grammar). The past-referring aorist indicative is also marked by the augment in Sanskrit; there is no indicative marked with final **-i* from the aorist stem, since such a tense with present reference would be incompatible with the perfective aspect. The unmarked counterparts to these forms, both in the present and aorist system, are found in Vedic Sanskrit, where they are named the *injunctive*. The present injunctive has the following form:

injunctive	*bharat* 'he carries'	< PIE *b*^{h}*eret*

The injunctive of Vedic Sanskrit is a relic category with three different principal uses, which may all be inherited from PIE:

1 with the particle *mā* it forms prohibitions;
2 it may also serve as a replacement for a verb form marked for tense or mood in a string of verbs;
3 it appears in narrative contexts referring to actions by gods or heroes in myth.

These 'unmarked' verb forms were therefore liable to confusion with either modal forms (functions 1 and 2) or indicative forms (functions 2 and 3). In Latin, the corresponding unmarked forms made from the original present stem of the verb had a different fate from those made from the aorist stem. Those from the present stem were largely lost, as were the present stem forms marked with the augment for past time, the PIE imperfect paradigm. The only survival of the original unmarked forms are some imperative forms, for example, the passive/deponent imperatives in *-re*. In the *aorist* system on the other hand, the old injunctive replaces the aorist indicative tense as the standard marker of past time. We can see this development as an extension of function 2 given above. The unmarked stem of the verb would be most frequently used in long narratives of past events, with an initial verb form marked for past tense followed by a number of subsequent unmarked forms. The prevalence of the unmarked form may have led to the ousting of the less frequent marked form. Note also that the loss of the original imperfect can be linked to the loss of the

category of aspect. In Latin the imperfect is not typically used as a narrative tense, unlike in languages which preserve an overall aspectual distinction such as Greek.

There is no trace of the *augment* as a means of marking past tense in Latin. But the earliest Latin inscriptions do retain the distinction between a set of endings associated with present tense and another set with non-present or non-indicative verb forms. The forms with present reference are collectively termed *primary* endings and are opposed to *secondary* endings. Ultimately the primary endings derive from a set with 3rd person singular **-ti*, and the secondary endings continue the injunctive endings with 3rd person singular **-t*. The effects of sound change mean that the original distinction between the two sets of endings has changed by the time of Early Latin:

	Primary	Secondary
PIE	**-ti*	**-t*
Early Latin	**-t*	**-d*.

It should be noted that the form reconstructed as PIE **-t* may have been realized as */-d/* word finally (see Ringe 2000), and so the only change which need be posited for Latin is the loss of final *-i* (a change it has undergone in common with the Sabellian languages, see Chapter II). The Early Latin distinction between primary and secondary endings did not affect all persons: there was no distinction between primary and secondary in the 2nd person singular, nor, as far as we can tell, in the 1st and 2nd person plural. This overlap between the different categories eventually led to their levelling, and in Classical Latin the only vestige of their survival is in the 1st person singular. In this person the primary ending *-ō* (besides secondary *-m*) was used in place of expected **-mi*, and this morph remains restricted to primary contexts.

Thematic and athematic endings

PIE verbal morphology showed two separate sets of personal endings for the present and aorist paradigms, which did not encode any functional difference, but were associated with different morphological classes. These two conjugations are termed *thematic* and *athematic*. Examples of reconstructed forms of the two conjugations in the present indicative (active) are given below, with their continuations in Latin:

	Thematic	Athematic
3rd person singular	**h₂eǵ-e-ti* (*agit*)	**h₁es-ti* (*est*)
1st person plural	**h₂eǵ-o-me* (*agimus*)	**h₁s-me* (*sumus*)

As can be seen from the examples, in the thematic endings a vowel is inserted between the stem and the ending. This vowel, termed the *thematic* vowel, may have a surface form **e* or **o*. Athematic endings are distinguished by having no link vowel before the ending, which is attached directly to the stem. Thematic verbs do not show the vowel alternation in the root syllable that was characteristic of the athematic class (note the variation between the root form **$h_1$es-* and **h_1s-* in the verb 'to be', which survives in Latin ***es-t/s-umus***). Different personal endings were associated with the athematic and thematic conjugations in some parts of the paradigm. For Latin, the only survival of this is the 1st person singular, where the primary ending was **-ō* for the thematics, but **-mi* for athematics. Already in PIE the athematic class was losing ground to the thematics, and all of the athematic verbs inherited into Latin show some degree of influence from the thematic paradigm. Thus the athematic 1st person singular ending **-mi* only survives in the Latin verb form *sum* 'I am'. Other irregular verbs in Latin derive in part from athematic forms, note *eo* 'I go' (athematic forms include first plural *imus*) and *uolo* 'I want' (athematic 3rd person singular *uult*).

Modal forms

Two modal forms other than the imperative are reconstructed for PIE, the subjunctive and the optative. These are continued in Greek and Vedic Sanskrit, although it is not easy to give a simple summary of their different functions. The subjunctive is often characterized as a mood of volition: it is used in commands, prohibitions and exhortations, and speakers may use subjunctives to refer to events that they expect will take place. The optative is used in wishes, but it may be better seen as the mood of the counterfactual, or at least the mood which is further removed from the here and now than the subjunctive – note that the optative is used in counterfactual conditionals in Greek (in part) and in Sanskrit. Latin does not continue both moods as modal forms, but the same morphological formations survive. The old PIE subjunctive becomes the Latin future, the old PIE optative becomes the Latin subjunctive. This pattern can be seen in Table 1.3, which sets a series of PIE subjunctive and optative formations beside their Latin outcomes. Line 1 presents the clearest case, the verb 'to be', where the Latin future directly continues the old subjunctive and the Latin subjunctive continues the original optative formation. In Early Latin the subjunctive has the form *siem*, *sies*, *sied* in the singular, and *sīmus*, *sītis*, *sient* in the plural; this vestige of the earlier vowel alternation pattern is ironed out by the time of Classical Latin, to give a stem *si-/sī-* (*sim*, *sīs*, *sit*, *sint*). Line 2 shows how the originally athematic verb *uolo* 'I want' also retains the original optative as a

Table 1.3 The outcomes of the PIE moods in Latin

	PIE subjunctive →	Latin future	PIE optative →	Latin subjunctive
1.	**$h_1$es-et(i)*	*erit*	**h_1s-ieh$_1$-t*	*sied*
2.			**wel-ih$_1$-me*	*uelīmus*
3.	**reg´-ē-t(i)*	*reget*	**rego-ih$_1$-t*	*regat*
4.	**-uis-ō*	*-uerō*	**-uis-ih$_1$-m*	*-uerim*

subjunctive. The expected 3rd person singular future of *uolo* would be **uelit* < **uel-et(i)*, but it has replaced this with the future formed in long *-e*, which, as we see in line 3, is regularly derived from the PIE subjunctive for verbs of the 3rd conjugation (representing earlier thematic verbs). The derivation of the thematic optative in Latin is uncertain; it may be possible that the suffix *a* is actually the Latin continuation of **-oyh$_1$-* (see Rix 2002). Line 4 shows the behaviour of the original subjunctive and optative in the perfectum stem, where the form **-uis-* represents the productive stem formation in the perfect (also evident from the perfect infinitive as *amau**isse***); here the subjunctive lies behind the Latin future perfect and the optative behind the perfect subjunctive. In Classical Latin the future perfect and the perfect subjunctive look the same except for the first person: perfect subjunctive *amauerim* and future perfect *amauero*, but in Early Latin, the forms were more distinct, with the subjunctive showing a long *ī*, *amauerīs, amauerīt* etc., although already in Plautus the vowel is sometimes shortened in the 3rd person.

This pattern can also explain the Latin future formation in *-bō*, used for the 1st and 2nd conjugations, and the 4th conjugation in some verbs in Early Latin. This formation originated from a univerbation of a verbal noun with the original aorist subjunctive of the root **b^{h}uh$_2$-* which survives in Latin *fui* 'I was'. Structurally parallel formations also occur in the older Indo-Iranian languages, for example Vedic *gúhā babʰuva* 'he is hidden' with *gúhā* associated with the verb *gūhati* 'hide' (see Gippert 1999 for details of the supposed PIE background to these forms). The Latin imperfect formation in *-bam* is also a neologism formed from the same univerbation, possibly formed from either an aorist 'injunctive' verb form, or a modal form marked with **-ā-* (in many languages there is an interaction between modal formations and verb forms denoting habitual actions, cf. the English 'would' tenses and the Greek optative). The Latin future in *-bō* is an entirely new formation, only shared by Faliscan, the language spoken in the ancient town of Falerii, and known only from scanty inscriptional sources. The following inscription is found on a Faliscan drinking bowl dated to around 300 BC:

(1) Giacomelli 1963: 49
foied uino pipafo cra carefo
today wine-ACC I-will-drink tomorrow I-will-lack
'Today I will drink wine, tomorrow I'll do without.'
(Latin: *hodie uinum bibam, cras carebo.*)

The Faliscan verb ending *-fo* is clearly exactly the same as Latin *-bo*, with the *-f-* rather than *-b-* the outcome of a 'voiced aspirate' **-b^h-*. This formation is found nowhere else in Italy and represents a significant shared innovation.

Voice

The PIE verbal system also had a category of voice. As in Latin, there were two voices, and Latin formally continues the inherited opposition. However, the precursor to the Latin passive, termed the PIE *medio-passive* or *middle* appears to have been motivated semantically rather than syntactically. That is to say, whereas in Latin a passive verb form can be derived syntactically from its corresponding active verb, by promoting the object of the active verb to the subject of the passive verb, in PIE no such syntactic transformation can be made to arrive at the function of the middle voice. Instead the underlying meaning of the middle appears to have been affectedness or involvement of the subject, in addition to, or other than, functioning as the agent. In PIE some verbs could conjugate in both voices, whereas others were restricted either to the active only (such as **$h_1$es-* 'be') or to the middle only (such as **sek^w-* 'follow'). The development in meaning from the middle to the passive is straightforward: for most transitive verbs, the object can be seen to be maximally 'affected' by the verbal action, and hence middle forms of transitive verbs are open to re-interpretation as passives. There are many survivals of the earlier state of affairs in Latin, notably in the class of deponent verbs, that is verbs conjugated as passives although having no active counterpart. These verbs continue the inherited set of verbs which only took middle endings, note for example *sequor* 'I follow' which in Latin is deponent and in other IE languages is inflected as a middle.

The Latin personal endings of the passive have clear analogues in other IE languages. Compare the following 3rd person forms (singular and plural) in Latin with the Greek and Sanskrit (present and imperfect) endings:

	Latin	Greek	Sanskrit
3rd singular (present)	agitur	ágetai	ájate
3rd singular (imperfect)		ḗgeto	*á*̄jata
3rd plural (present)	aguntur	ágontai	ájante
3rd plural (imperfect)		ḗgonto	*á*̄janta

In all three languages the middle/passive endings are formed from the active endings with a further marker attached. The Greek and Sanskrit secondary (past) endings are formed from the active endings followed by **-o*, the primary (non-past) endings of Sanskrit can be derived from final **-oi* (i.e. the secondary ending + **-i*), and this form is also found in Mycenaean Greek and some Greek dialects (elsewhere in Greek it is replaced by *-ai*). The Latin endings derive from the active endings followed by **-or*. The final **-r* of the Latin forms has no equivalent in Greek or Sanskrit, but it is also used to mark the 1st person forms of the passive (**-or* and **-mor*). There are other IE languages which do, however, show a comparable use of final **-r*, and we shall return to discuss the Latin *-r* forms in detail below when considering Latin's place in the IE language family. The 2nd person forms of the middle are difficult to reconstruct with confidence, and need not detain us here, except to note that the Latin 2nd plural *-mini* remains unparalleled in other IE languages.

The perfect of the Latin passive is formed by a periphrasis of participle and 'be', *actus sum*, etc. This formation is not inherited from PIE. Indeed, the PIE *perfect* does not seem to have made a distinction of voice, since it originally represented the state of the subject and thus was obligatorily understood as 'subject-affected'. In the course of time the original sense of the perfect was lost and it became re-interpreted as a tense parallel to the other active indicative formations, leading to the requirement to create a passive counterpart to perfect forms. The innovation of a new periphrastic perfect passive, formed in exactly the same way, also took place in the Sabellian languages (see Chapter II).

As a summary to the changes discussed above we can represent the differences and similarities between Latin and PIE in a tabular form, using the 3rd person singular as a representative of each paradigm. In Table 1.4 the shaded forms have left no trace in Latin, but the unshaded forms, whether new formations or inherited from PIE have been incorporated into the Latin verbal system. The table shows how much of the Latin verbal system is new, and how much inherited. Note that the arrow signs ⇒ and ⇐ in this table should be taken to indicate that the Latin formation derives from the cited form or from something like it; we are not sure about the exact makeup of the ancestor of the Latin imperfect, for example, as we saw in the discussion.

1.4.5 Syntax

PIE syntax is one of the most difficult areas to reconstruct. However, in recent years scholars have been increasingly turning their attention to syntactic change and we are beginning to get a better picture of what

Table 1.4 Inherited and new elements in the Latin verbal system

(a) The PIE present system ⇒ Latin *infectum*

PIE	Latin	New formations
Injunctive *$*h_2eg´et$*		
Present indicative *$*h_2eg´eti$* ⇒	Present *agit*	
Imperfect *$*e$-$h_2eg´eti$*	Imperfect *agebat*	⇐ *$*h_2eg´ē\ b^huh_2$-
Subjunctive *$*h_2eg´$-$ē$-$t(i)$* ⇒	Future *aget*	
Optative *$*h_2eg´$-oih_1-t* ⇒	Subjunctive *agat*	
	Imperfect subjunctive *ageret*	⇐ *$*$-$sē$-t*

(b) The PIE aorist/perfect system ⇒ Latin *perfectum*

PIE	Latin	New formations
Perfect indicative *$*d^he$-d^heh_1k-e* ⇒	Perfect indicative *vhevhaked*	
Aorist injunctive *$*d^heh_1k$-t* ⇒	Perfect indicative *fecit*	
Aorist indicative *$*e$-d^heh_1k-t*	Pluperfect *fecerat*	⇐ *$*$-is-$āt$*
Aorist subjunctive *$*d^heh_1k$-$et(i)$*	Future perfect *fecerit*	⇐ *$*$-is-eti*
Aorist optative *$*d^heh_1k$-ih_1-t*	Perfect subjunctive *fecerit*	⇐ *$*$-is-ih_1-t*
	Pluperfect subjunctive *fecisset*	⇐ *$*$-is-$sē$-t*

PIE syntax might have looked like. Here we shall concentrate on just one area where Latin syntactic behaviour can be compared with other IE languages: word order.

Word order in Classical Latin realizes no grammatical information, and poetical or rhetorical texts can show extreme examples of 'scrambled' word

placement, with discontinuous constituents, and words removed from their clauses. For example, the following line taken from Vergil (*Aeneid* I.109) shows the relative pronoun occurring after the subject and verb of the relative clause and interrupting a prepositional phrase, which is itself in a non-standard order:

(2) Vergil *Aeneid* I.109
saxa vocant Itali mediis quae in fluctibus Aras
rocks-ACC they-call Italians-NOM middle-ABL.pl which-ACC in wave-ABL.pl altars-ACC
'rocks in the middle of the waves which the Italians call the altars'

This hyperbaton is clearly here used for effect. In Latin prose, scrambling of the word order is rarely so extreme, and sampling and statistical surveys of Latin word order have established a default word order (see Adams 1976). Latin verbs usually come at the end of their clause, but in respect of other constituents heads precede modifiers: Latin has prepositions, not postpositions and the unmarked order for nominal phrases is nouns before dependent adjectives and genitives. Adams (1976) argues that Classical Latin artificially preserves a stage of the language when the word order was changing from 'head-final' (OV) to 'head-first' (VO), and there is certainly evidence (as we shall see in later chapters) from subliterary texts to suggest that in the spoken language of the first centuries AD, verbs preceded their complements, as they do in the Romance languages.

Extrapolating back from this Classical Latin picture one might expect to find more evidence for head-final constructions in Latin, and that the parent language from which Latin derived was also an SOV language. There is some evidence to support this hypothesis. If we look at verb placement alone, we find that in the earliest lengthy Latin inscription, the *Senatusconsultum de Bacchanalibus* (CIL I^2 581, dated to 186 BC, discussed in detail at 5.4), every verb in the 30-line text is clause-final, and in the fragments of Laws of the XII Tables, believed to date from the fifth century BC, verbs always follow their objects and come at the end of the clause, except where followed by afterthoughts or elaboration. There is also evidence that the default word order in PIE was head-final; Hittite is consistently OV, as is the language of the earliest Sanskrit prose texts (although much freer word order is found in Sanskrit metrical poetry).

Some scholars, most notably Winfred Lehmann and his school (see Lehmann 1974, Bauer 2000), accordingly reconstruct PIE as a rigid OV language. However, it seems likely that this oversimplifies the picture of word-order. Verb-final was certainly the unmarked word order in PIE,

but textual or pragmatic factors may have led to fronting of the verb, or amplification of the sentence through the addition of extra material after the verb (so-called 'right-detachment'). The very earliest Latin texts we have may give us a glimpse of a period when word-order was not as rigid as it seems in the Laws of the XII Tables or the *Senatusconsultum de Bacchanalibus*. We reproduce below all the inscriptions with verb-phrases longer than two words extant from before *c.*400 BC (with 'translations' into a more recognizable stage of Latin). The verbs are highlighted in **bold** and the sign / is inserted where relevant to show clause breaks. (Note that in these texts square brackets are used to indicate where letters are no longer visible on the original inscription; text inside square brackets is restored by the editors.)

(3) CIL I^2 3 (dated to the seventh century BC, although its authenticity has been doubted, the sign : indicates word or syllable division):

Manios: med: **vhe:vhaked:** Numasioi
Manius me fecit Numerio
Manius me-ACC made Numasius-DAT
'Manius made me for Numerius.'

(4) 'Tita Vendia' vase, (seventh century BC, cf. Silvestri 1993, with the reading of Rix 1998: 251 n. 20):

eco urna titas vendias / mamar[cos m]ed **vhe**[**ced**
ego urna Titae Vendiae. Mamarcus me fecit
I urn Tita-GEN Vendia-GEN Mamarcus me-ACC made
'I am the urn of Tita Vendia, Mamarcus made me.'

(5) CIL I^2 4 (sixth century BC, the obscure second line is omitted):

iouesat deiuos qoi med **mitat** nei ted endo cosmis virco **sied** /
iurat per deos qui me mittit ne in te comis uirgo sit
swears gods-ACC who me-ACC sends lest to you-ACC kind-NOM girl-NOM is-SUBJ
duenos med **feced** en manom einom duenoi ne med malos **tatod**
bonus me fecit in ? ? bono, ne me malus clepito
good-NOM me-ACC he-made in ? ? good-DAT not me-ACC bad-NOM steal-IMP
'He who gives me swears by the gods that the girl should not be kind to you [. . .] A good man made me for a good man in [two words unclear], let no bad man steal me.'

(6) CIL I^2 2658 (sixth century BC, the reading here follows Wachter 1987: 80f.)

hoi med **mitat** kauios [. . .]monios qetios d[o]nom pro fileod
hic me mittit Gaius [ ]monius Cetius donum pro filio
here me-ACC sends Gaius-NOM [ ]monius-NOM Cetius-NOM gift-ACC for son-ABL
'Gaius [. . .]monius Cetius places me here as a gift on behalf of his son.'

(7) CIL I^2 2832a (the Lapis Satricanus, sixth–fifth century BC)

]iei **steterai** popliosio ualesiosio suodales mamartei
]ii steterunt Publii Valerii sodales Marti
?-LOC they-set-up Publius-GEN Valerius-GEN companions-NOM Mars-DAT
'The companions of Publius Valerius set up [this] to Mars in ?'

(8) 'Garigliano bowl' (fifth–fourth century BC, the reading here follows Vine 1998)

esom kom meois sociois trifos audeom duo[m] / nei **pari** med
sum cum meis sociis tribus Audiorum duorum noli me capere
I-am with my-ABL companions-ABL three-ABL Audii-GEN two-GEN don't me-ACC take
'I am, together with my three companions, (the possession of) the two Audii. Don't take me.'

Verbs in the above inscriptions are only found clause-finally in the 'Tita Vendia' vase and in the embedded clauses in CIL I^2 4. In the other examples they generally follow directly after their accusative complements (*med vhevhaked / feced, med mitat*), although in the first clause of CIL I^2 4 and the Garigliano bowl the verbs are fronted to sentence initial position. The subject follows the verb if it is especially long or complex, as in CIL I^2 2658 and 2832a, and dative complements also follow in all the early inscriptions. The net result is a system where the default word order is SOV, but where other orders, such as VO and OVS may also be present for reasons of emphasis or contrast. It is possible that the later rigid SOV system evidenced from sources such as the Laws of the XII Tables and the *senatusconsultum de Bacchanalibus* is not, in fact, a preservation of an archaic state, but is itself an artificial 'official' order created for the specialized discourse of bureaucratic prose (and which later became a defining marker of 'Classical Latin'). This rigid verb-final pattern may never have been a feature of spoken Latin. In the plays of Plautus, roughly contemporary with the *senatusconsultum de Bacchanalibus*, we find a range of different word-order patterns which fits in with the tendencies observed in the archaic Latin inscriptions given above. The verb-final order

predominates in subordinate clauses (where emphasis is less of an issue): thus in Plautus's *Captiui* the ratio of VO to OV order in subordinate clauses is 15 : 43, in main clauses 39 : 45 (figures from Adams 1976: 94f.). Verbs almost always follow pronominal objects, as they do in the early inscriptions, and as they continue to do in Romance. The only exceptions to this rule in Plautus's *Captiui* are occasions where the verb is fronted to clause initial position; this is usually the case with imperatives, where the verb is the natural focus, for example 449 *sequere me* 'follow me', and can be compared to the fronting of the imperative in the Garigliano bowl's injunction *nei pari med*. In Plautus subjects are also found following the verb, particularly where the verb is passive, but also where the verb is fronted or the subject is a long constituent; hence the word order of the Lapis Satricanus can be compared to *Captiui* 646, where the focal question word is fronted as would be expected:

(9) Plautus *Captiui* 646
sed qua faciest tuo' sodalis Philocrates?
but what-ABL face-ABL=is your-NOM companion-NOM Philocrates-NOM
'But what does your companion Philocrates look like?'

The more flexible model of Early Latin word order that is formed by looking at the earliest inscriptions and Plautus, with an unmarked head-final order, but the possibility of different orders through verb-fronting or right-detached elements accords well with current models of PIE syntax which incorporate these possibilities (see Clackson 2007, Ch. 6). This account of Early Latin (and PIE) word order will be of relevance to the discussion of changes in Latin word-order patterns in later chapters.

1.5 The Position of Latin within the IE family

The search for the IE language closest to Latin is nothing new, and the place of Latin within the IE family has been discussed since the inception of the discipline of comparative philology. We shall examine the question of the relationship between Latin and the other IE (and non-IE) languages of Italy in more detail in Chapter II. Here we shall briefly review the arguments for special connections between Latin and other IE language groups which lie principally outside Italy. The IE language groups which we know to have been spoken adjacent to the Latin speech area in historic times are Germanic, Celtic and Greek. In the nineteenth century scholars grouped Latin closest to Greek and Celtic. The earliest published 'tree diagram' of the IE family, by Schleicher in 1853, included a branch comprising Greek and Latin, but soon afterwards, in 1858, Carl

Lottner proposed a special relationship between Latin and Celtic (see Schrader 1907: 53–76 and Schmidt 1992 on these early works). It later became apparent that the features shared by Latin and Greek reflected common inheritances from the parent language, lost in other IE languages, rather than new developments, and were thus not significant for their relationship. The 'Italo-Celtic theory', on the other hand, continues to have adherents to the present day. Evidence in support of the reconstruction of an original Italo-Celtic subgroup includes shared phonological and lexical innovations as well as the joint creation of new morphology. Here we shall leave the phonology and vocabulary out of discussion, since it is not uncommon to find vocabulary items or phonological features or processes transferred across neighbouring languages, but it is rare to find borrowing of inflectional morphology through language contact. Unique shared innovations in morphology, particularly in inflectional morphology, are consequently the best indication that two languages earlier formed a subgroup (see Clackson 1994: 1–27).

Of the morphological agreements between Italic and Celtic the most widely discussed is the *o*-stem genitive singular marker **-ī*, characteristic of Latin, as we saw above, and also found in Celtic (directly attested in, e.g., Archaic Irish (Ogham) *maq(q)i* 'of the son', and Gaulish *Segomari* 'of Segomaros'). This ending is found in none of the other older IE languages and it is possible that both language groups had jointly replaced the inherited ending, **-osyo* as reconstructed from Sanskrit and Greek. However, a number of recent inscriptional finds show that the evidence in Italic and Celtic is far from straightforward. The early Celtic inscriptions from Italy and Spain show different endings: in Lepontic, three, perhaps four, inscriptions from before 400 BC show an ending *-oiso* (Eska and Wallace 2001: 80, in later Lepontic inscriptions *-oiso* is replaced by *-i*); and the Celtiberian inscriptions regularly show genitive singular *-o*, the origin of which is disputed. The ending *-osio* is attested as a genitive singular in early Faliscan inscriptions, and is now known in one early Latin inscription, the *Lapis Satricanus* (reproduced at 1.4.5 above). The ending *-ī* is universal in Latin from inscriptions from 300 BC on (although it is not found in any earlier inscription) and is also widely attested in later Faliscan inscriptions. There is also evidence for the genitive singular **-ī* in two other IE languages of Italy: Venetic and Messapic. Since Messapic is usually not reckoned to be part of the Italic language family, and Lepontic has replaced earlier *-oiso* with *-ī*, and, since Latin and Faliscan seem to have replaced *-osio* with *-ī* in historical times, it is now possible to argue (following Eska and Wallace) that the spread of a genitive singular **-ī* arose through language contact and took place relatively recently, not at some much earlier period of Italo-Celtic unity. The genitive singular ending may therefore be an example of a borrowed inflectional morph between closely related languages.

Other isoglosses between Latin and Celtic have also had to be revised in the light of new evidence. Nowhere more so, perhaps, than in the case of the verbal endings in **-r*. In the Latin passive and deponent endings all forms of the 1st and 3rd person are marked by a morph **-r*: ***amor***, ***amatur***, ***amamur***, ***amantur***. Nothing analogous to this is found in the medio-passive endings of Greek, Sanskrit or Gothic, but there are correspondences in Celtic. In Old Irish, for example, passive and deponent forms also end in *-r* (outside the 2nd person plural). This seemed a clear indication of a special relationship between Italic and Celtic, until the discovery of new IE languages in the early twentieth century, Tocharian and Hittite, which also have *r*-endings in the medio-passive conjugation. The presence of these endings in languages not in contact with each other, and on the peripheries of the Indo-European speaking area, argue strongly for *r*-endings to be a retained archaism, which were lost by a group of innovating languages in the centre of the IE world.

Although the *r*-endings of Latin and Celtic may not be an innovation, it has been argued that one ending of the medio-passive could represent an Italo-Celtic innovation (see Jasanoff 1997, the idea goes back to Thurneysen 1946: 367). Jasanoff suggests that the 3rd person plural in the Italic and Celtic medio-passive conjugation derives from **-ntro*, a compromise between two earlier PIE possibilities **-nto* (cf. Greek 3rd person plural imperfect middle ending *-nto*) and **-ro* (an alternative third plural middle form, continued by some forms in Sanskrit such as *duh-ré* 'they milk' < **-ro-i*). Jasanoff argues that **-ntro* lies directly behind forms such as the Old Irish deponent 3rd person plural (conjunct form) *-tar*, and Sabellian 3rd person plural *-nter* (e.g., Marrucinian *ferenter* 'they are carried') – note that in both languages the final vowel has been lost and an anaptyctic vowel inserted in the cluster *tr*. However, this explanation entails a set of complicated analogical processes in order to explain the form in Latin, *-ntur*, which appears to derive directly from **-nto-r*, a formation which can be exactly paralleled in the Hittite 3rd person plural present medio-passive ending *-ndari*. And in the Sabellian languages also, the simplest derivation of the different medio-passive endings in *-r* is from **-nto-r*, preserved as a secondary ending in Umbrian **terkantur**, with the 3rd person plural *-nter* a remodelling by some dialects to make a distinctive primary ending (see Villanueva Svensson 1999).

In summary, the two innovations in inflectional morphology which have been proposed for Italo-Celtic need not represent common developments. The genitive singular marker **-ī*, may have been borrowed across different languages, and the reconstruction of a 3rd person plural ending **-ntro* is not necessary to explain the Latin deponent/passive ending *-ntur*. Without good evidence of a shared development in inflectional morphology, it is probably unwise to reconstruct an Italo-Celtic subgroup of PIE.

However, if we examine a wider range of features, including phonological and lexical evidence within the IE context we may get an idea of whether Italic is more closely related to Celtic than any other language group. The most comprehensive survey of this type yet to be performed was carried out by a team led by Don Ringe (Ringe, Warnow and Taylor 2002), who devised a computer programme to examine the best possible fit for a family tree of IE based on analysis of 370 linguistic characters. The results do show a close relationship between Italic and Celtic, although there are only four features that they share to the exclusion of any other subgroup. These are:

1 the phonological change of **pVk^{w}-* to **k^{w}V k^{w}-*, cf. Latin *quinque* '5' < **penk^{w}e* (Old Irish *coic*);
2 the productive suffix **-tiōn-*;
3 the word for 'lake' **loku-*;
4 the verb 'sing' **kan-*.

(see Ringe et al. 2002: 100f., for discussion of these agreements). It seems to us most likely that these agreements arose through very early contact between the ancestor of Latin and the Celtic languages, continued through the common presence of both branches in Italy until historical times, or perhaps through contact of both with other IE varieties which left no attestation. Garrett (1999) has suggested borrowing of this sort in the period following the break-up of the parent language, when the different varieties were distinct but still very closely related (compare inter-dialectal borrowing in Greek dialects or among the Sabellian languages which we shall examine more closely in the next chapter). It is worth noting that Germanic also shares a number of lexical features exclusively with Italic and with Celtic, and some examples of these will be discussed at section 2.4 in the next chapter (Ringe et al. 2002: 86f., Porzig 1954: 123–7).

In summary, Latin shares more features with Celtic than any other IE language branch outside Italy. The links to Celtic do not, however, seem sufficiently close to allow us to reconstruct an 'Italo-Celtic' proto-language, and Celtic developments can in general shed little light on the development of Latin. Much more important for the history of Latin is the relationship with other IE languages in Italy, which will be the subject of the next chapter.

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