The Foundations of Latin

by

Philip Baldi

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Preface

Generations of students of Indo-European linguistics and of the Classics have been initiated to the history of the Latin language according to a familiar model. Most start with Palmer's *The Latin language*. The curious journey through Buck's *Comparative grammar of Greek and Latin* and Meillet's *Esquisse d'une histoire de la langue latine*. The committed know that the real answers lie somewhere in Sommer—Pfister's *Handbuch der lateinischen Laut- und Formenlehre*, and especially Leumann's *Lateinische Laut- und Formenlehre*, to which we might now add Sihler's massive revision and rewrite of Buck, the *New comparative grammar of Greek and Latin*. Specific interests and particular issues may take the serious to the works of Meillet—Vendryes, Devoto, Pisani, Niedermann, Prosdocimi and many others. But the road becomes rocky beyond Palmer, and without some specialized guidance or training, even the most ardent enthusiast of the history of Latin will find some of the issues impenetrable. Many give up on the topic, convinced that the arcane methodology and specialized techniques of Indo-European linguistics place the details beyond the grasp of the everyday scholar and ambitious student of Indo-European or classical studies.

In the United States, students of the Classics and the basic Indo-European foundations of Latin have relied primarily on Palmer and Buck. Each of these fine volumes has undeniable merits and strengths, and an equal number of evident flaws and weaknesses. The same is true of other synthetic accounts of the history of Latin. In some, there is no information on methodology and basic assumptions of historical-comparative research; in others there is a lack of discussion of the sources of information on which the historical linguistic analysis of Latin and the other Indo-European languages is based; in still others there is a lack of cultural and historical perspective, with the history of Latin presented as if the language had no speakers; most lack a coherent treatment of the inscriptional tradition, and of the non-Latin Italic languages; and in none of them is there a serious treatment of historical syntax, i.e. the evolution of Latin sentence structure from its Proto-Indo-European beginnings. In fact, not one of the available resources addresses the total picture of the history of Latin, methodologically, linguistically, materially and culturally, from its Indo-European origins up to the time when it starts to move in the direction of the Romance languages.

When I began this project over a decade ago, I imagined that *The foundations of Latin* would fill all the gaps in the previous literature, and add a few original twists of its own. It is my hope now that it will fill some of the gaps, and still add some original twists. This volume includes an account of historical linguistic methodology and the Indo-European family of languages which surpasses that found in comparable works. I have tried to justify linguistic details essential to the precise understanding of the history of Latin and the other Indo-European languages, and to

be explicit and current on matters relating to the inscriptional and philological record, and on the connections of Latin with other Indo-European languages. And I have attempted to provide up-to-date analysis and commentary which I hope makes the material contained in this volume considerably more than a reshaping of the known facts.

But gaps remain, the major one of which is a coherent treatment of historical Latin syntax. After writing a lengthy outline, I realized that the subject was so vast and fraught with theoretical and methodological peril that it would be pointless to undertake a synthesis in a volume of this sort. Phonology is manageable; once the theoretical decisions are made (such as whether to include laryngeals, glottalized consonants, voiceless aspirates, etc.), the details follow in a more or less straightforward manner. Morphology is more challenging, owing to the large number of morphological elements in a language of the Indo-European and Latin type, but it is nonetheless finite. Syntax, however, is vast and laden with conflicting data, and its analysis depends on crucial theoretical assumptions and subtle grammatical judgments. Historical syntax is particularly treacherous, for not only must a theoretical model be selected and justified, it must be appropriate for both the protolanguage and the target language, and the processes connecting the two must be stated with the same explicitness as those detailing the historical phonology and morphology. In effect, the syntax of Proto-Indo-European would have to be reconstructed before the historical syntax of Latin could be written. I realized that this cannot be accomplished in a synthetic account of the history of the language. It must be treated in a volume of its own.

This book is not intended to be a replacement for other volumes on the history of the Latin language. Leumann and now Sihler, for example, will continue to be primary sources on highly specific matters of phonology and morphology; Pisani will continue to provide the most comprehensive (though dated) account of the inscriptional record; and Niedermann will remain a capital resource of phonetic detail. At the same time, it is my expectation that specialists and non-specialists alike will find information and detail in these pages which they won't find outside the technical literature, and a synthesis of method, theory, data and analysis which is unavailable elsewhere. It is my hope that future generations of scholars will add *The foundations of Latin* to the list of standard resource works on the history of this fascinating language.

Contents

Preface v

List of figures xiii

List of maps xiii

List of plates xiv

List of tables xv

Acknowledgments xvii

Credits xix

Abbreviations and symbols xxi

Transcription conventions xxiii

Chapter 1 Indo-European and the Indo-European languages 1
1.1. Introduction 1
1.2. Methodological preliminaries 2
1.3. The comparative method and the regularity principle 3
1.3.1. Challenges to the comparative method and the regularity principle 14
1.4. The method of internal reconstruction 20
1.5. Genetic classifications and family trees 21
1.6. The Indo-European language family 23
1.6.1. Indo-Iranian 23
1.6.2. Greek (Hellenic) 25
1.6.3. Italic 28
1.6.4. Anatolian 29
1.6.5. Tocharian 30
1.6.6. Celtic 31
1.6.7. Germanic 32
1.6.8. Slavic 34
1.6.9. Baltic 34
1.6.10. Armenian 35
1.6.11. Albanian 36
1.6.12. Fragmentary languages 36
1.6.13. The centum–satem dialect distinction 38

1.7. Aspects of Proto-Indo-European culture and civilization 39
1.7.1. The homeland 39
1.7.2. Lexical reflections of PIE culture 45
1.8. Summary 46

Chapter 2 An outline of Proto-Indo-European 47
2.1. Phonology 49
2.1.1. Segmental phonology 49
2.1.2. The glottalic theory 52
2.1.3. The phonological system of PIE 58
2.1.4. Accent 64
2.1.5. Summary 65
2.2. Morphology 66
2.2.1. Nominal and pronominal morphology 67
2.2.2. Verb morphology 71
2.2.3. Ablaut 76
2.3. Syntax 77
2.3.1. Inflection in PIE 79
2.3.2. PIE syntax 80
2.4. Summary 91

Chapter 3 Ancient Italy and its Indo-Europeanization 93
3.1. The European Stone Age and its reflection in Italy 96
3.2. The Metal Ages 98
3.3. Rome 104
3.4. The Etruscans 107
3.4.1. Theories of Etruscan origins 109
3.5. The people of ancient Italy 112
3.6. Summary 117

Chapter 4 The languages of ancient Italy 118
4.1. Sources of information 118
4.2. Samples of the Italic languages 121
4.2.1. Aequian 122
4.2.2. Faliscan 123
4.2.3. Latin 125
4.2.4. Marrucinian 126
4.2.5. Marsian 128
4.2.6. Oscan 129
4.2.7. Paelignian 132
4.2.8. Sabine 134
4.2.9. South Picene 134

4.2.10. Umbrian 136
4.2.11. Vestinian 140
4.2.12. Volscian 140
4.3. Samples of non-Italic languages 142
4.3.1. Celtic 142
4.3.2. Independent IE languages 147
4.3.3. Non-IE languages 160
4.4. Interrelationships within Italic 167
4.4.1. Areal/chronological classifications 167
4.4.2. Genetic classifications 168
4.4.3. Proto-Italic 180
4.4.4. Non-Roman elements in Latin 181
4.5. Relationships between the Italic and other Indo-European languages 183
4.5.1. Old European, or the civilization of the northwest 183
4.5.2. The relationship between Italic and Germanic 185
4.5.3. The relationship between Italic and Celtic 186
4.5.4. The relationship between Latin and Greek 189
4.6. Summary 195

Chapter 5 Materials for the study of Latin 196
5.1. Samples of Latin inscriptions, with commentary 196
5.1.1. The Castor and Pollux dedication 196
5.1.2. The Duenos inscription 197
5.1.3. The Garigliano bowl 200
5.1.4. The Forum Romanum cippus 202
5.1.5. The Lapis Satricanus 204
5.1.6. Epitaph from the Scipionic sarcophagus 206
5.1.7. Dedication to Hercules by M. Minucius 207
5.1.8. The Senatus Consultum de Bacchanalibus 208
5.1.9. The Carmen Arvale 213
5.1.10. Epitaph from Rome 215
5.1.11. Commemorative tablet to L. Aemilius Paulus 216
5.1.12. Dedicatory inscription from Aeclanum 217
5.1.13. The Puteolan funerary tablets 217
5.2. Continuous texts 218
5.2.1. An excerpt from the Law of the Twelve Tables 218
5.3. Literary texts 219
5.3.1. Cato 219
5.3.2. Testimony of grammarians 220
5.4. Spoken Latin 227
5.4.1. Literary reflections of spoken Latin 228
5.5. Graffiti 235

5.5.1. *CIL* 4.1904 236
5.5.2. *CIL* 4.3948 236
5.5.3. *CIL* 4.1173 237
5.6. Letters 237
5.6.1. Claudius Terentianus 237
5.6.2. A letter from the archive of Flavius Cerialis 240
5.7. Summary 241

Chapter 6 The development of the Latin phonological system from PIE 242
6.1. The vowels and laryngeals 242
6.1.1. The PIE vowels and diphthongs in Latin 242
6.1.2. The Latin vowel system 250
6.1.3. The Latin accent 268
6.2. The consonants 270
6.2.1. Resonants 270
6.2.2. Obstruents 277
6.2.3. The structure of the Latin consonant system 290
6.2.4. Phonological processes affecting consonants in Latin: Assimilation, dissimilation, metathesis, epenthesis, and the simplification of consonant clusters 293
6.3. Summary 298

Chapter 7 The development of the Latin morphological system from PIE 300
7.1. The parts of speech 300
7.2. Nouns and adjectives 300
7.2.1. Nominal and adjectival derivation 300
7.2.2. Nominal inflection 309
7.2.3. The development of Latin nominal inflection from PIE 312
7.3. Pronouns 336
7.3.1. The personal pronouns 337
7.3.2. The development of the PIE personal pronouns into Latin 338
7.3.3. Possessive pronouns (adjectives) 341
7.3.4. Non-personal pronouns 342
7.3.5. Indefinites, interrogatives, and relatives 345
7.3.6. The development of the PIE interrogative and indefinite pronouns into Latin 347
7.3.7. Pronominal adjectives 348
7.4. Comparison of adjectives 349
7.4.1. Comparative 349
7.4.2. Superlative 350
7.5. Adverbs 350
7.6. Numerals 351

7.6.1. The Latin numerals....352
7.7. Undeclined forms....358
7.7.1. Particles....358
7.7.2. Preverbs and prepositions....358
7.7.3. Conjunctions....361
7.7.4. Interjections....361
7.8. The verb....361
7.8.1. General characteristics of the PIE verb....361
7.8.2. Active and non-active in early PIE....362
7.8.3. Voice in classical PIE....364
7.8.4. Tense/aspect in classical PIE....365
7.8.5. The development of voice and tense/aspect from early PIE to classical PIE....365
7.8.6. From PIE to Latin....366
7.8.7. Mood in PIE....368
7.8.8. Person in PIE....368
7.8.9. Other characteristics of the PIE verbal system....368
7.8.10. PIE verbal morphology and its development into Latin....370
7.8.11. Personal endings....383
7.8.12. The development of the PIE endings of the present and aorist into Latin....385
7.8.13. The endings of the perfect in PIE....386
7.8.14. The development of the personal endings of the perfect into Latin....387
7.8.15. The development of the personal endings of the PIE middle into Latin....389
7.8.16. Deponent and middle in Latin....392
7.8.17. The Latin tenses....396
7.8.18. The moods....400
7.8.19. Nominal forms of the verb in Latin....406
7.9. Summary....409

References....411

Classical sources cited....444

Indexes of forms....445
1. Latin–Faliscan....445
2. Albanian....482
3. Anatolian....482
4. Armenian....483
5. Baltic....484
6. Celtic....485

7. Germanic 487
8. Greek 491
9. Indo-Iranian 497
10. Other Italic 502
11. Non-Italic IE of Italy 505
12. Non-Indo-European 506
13. Romance 506
14. Slavic 506
15. Tocharian 507
16. Proto-Indo-European 508

Index of authors 515

Index of classical references 520

Index of subjects 522

List of figures

1.1	Comparative alignment of nasal segments	12
1.2	Triangulation of nasal segments	12
1.3	Reconstruction of **m* and **n*	12
1.4	Reconstructing **s*	13
1.5	A family tree of the Indo-European languages	22
2.1	The structure of the late Indo-European verb	75
4.1	Poultney's classification of the Italic languages	169
4.2	Coleman's classification of the Italic languages	170
4.3	The relation of Latin and Faliscan	171
4.4	Proto-Italic and the relation between Latin–Faliscan and Oscan–Umbrian	181
4.5	A family tree of the Italic languages	181
6.1	The Classical Latin vowel system	250
6.2	Alternation of long segments	262
7.1	The development of tense/aspect and voice from early PIE to Latin	367

List of maps

1	Distribution of Indo-European languages, ca. 500–100 B.C.E.	37
2	Proposals for the Indo-European homeland	40
3	Cities and regions of ancient Italy	105
4	Tribes of ancient Italy	113
5	Languages of ancient Italy	119

List of plates

1	Faliscan: Ceres	124
2	Marrucinian: Aes Rapinum	127
3	Marsian: Inscription from Antinum	129
4	Oscan: Tabula Bantina	130
5	Paelignian: Herentas	133
6	South Picene: Castignano stone	135
7	Umbrian: Tabulae Iguvinae	138
8	Vestinian: Inscription from Navelli	141
9	Volscian: Tabula Veliterna	141
10	Gaulish/Latin: Bilingual inscription from Todi	144
11	Lepontic: Vergiate stone	146
12	Messapic: Inscription from Ceglie Messapico	151
13	North Picene/Latin: Bilingual inscription from Pesaro	153
14	Raetic: Caslir situla	155
15	Raetic: Paletta di Padova	156
16	Sicel: Centuripa vase	157
17	Venetic: Epitaph from Padua	159
18	Latin: Castor and Pollux dedication	197
19	Latin: Duenos inscription	198
20	Latin: Forum Romanum cippus	203
21	Latin: Lapis Satricanus	205
22	Latin: Epitaph from the Scipionic sarcophagus	207
23	Latin: Dedication to Hercules	208
24	Latin: Senatus Consultum de Bacchanalibus	209
25	Latin: Carmen Arvale	214
26	Latin: Commemorative tablet to L. Aemilius Paulus	216

List of tables

1.1	Some basic Indo-European terms	8
1.2	Selected lexical items illustrating the comparative method	11
1.3	Nasals aligned for comparison	11
1.4	Selected Indo-European cognates	13
1.5	Multilateral comparison	16
1.6	Examples of reconstructed Proto-Nostratic	17
2.1	Schleicher's reconstructed system	50
2.2	Vowel strengthening in Sanskrit	50
2.3	Brugmann's reconstructed system	51
2.4	Lehmann's reconstructed system	53
2.5	Szemerényi's reconstructed system	53
2.6	"Grimm's Law" and the Armenian consonant shift	54
2.7	The glottalic model of PIE stop consonants	55
2.8	The phonological system of PIE	59
2.9	The development of the PIE phonological system in selected languages	62
2.10	A root/inflectional accent (hysterodynamic) noun ('foot')	65
2.11	A root/inflectional accent verb ('turn')	65
2.12	Reconstructed case endings	68
2.13	Examples of noun inflection: *$*h_1dont$-/h_1dent- 'tooth'	69
2.14	Examples of personal pronoun inflection	70
2.15	The indefinite/interrogative *k^we-/k^wi-	71
2.16	Verbal categories in selected IE languages	72
2.17	Selected verbal endings	74
2.18	The present of the verb *h_1es- 'be' in PIE and selected languages	76
2.19	The present of the verb *h_1ei- 'go' in PIE and selected languages	76
2.20	Qualitative ablaut	77
4.1	The development of the alphabet	120
4.2	Conway's classification of Prae-Italic and Italic languages	168
4.3	Pulgram's classification of Prae-Italic and Italic languages	168
4.4	Greek loanwords in Latin	192
6.1	PIE vowels and diphthongs	242
6.2	PIE resonants and obstruents	271
6.3	Classical Latin consonants	291
7.1	Nominal inflection in PIE	310
7.2	The Latin *o*-stem declension	312
7.3	The Latin *a*-stem declension	317
7.4	The Latin third declension consonant stems	322
7.5	The Latin *i*-stem nouns of the third declension	327
7.6	The Latin *u*-stem nouns of the fourth declension	330

7.7	The Latin fifth declension	333
7.8	The PIE personal pronouns	337
7.9	The Latin personal pronouns	337
7.10	The declension of *is, ea, id*	342
7.11	The Latin interrogative/indefinite	346
7.12	The Latin relative	346
7.13	The PIE interrogative/indefinite *$*k^{\mu}e$-/$k^{\mu}i$-	346
7.14	The PIE adjective/relative *$*k^{\mu}o$-/$k^{\mu}eh_2$-/$k^{\mu}o$-	346
7.15	The numbers 1–10 in PIE	352
7.16	Interjections	361
7.17	Categories of the Latin verb	369
7.18	Sample paradigm: The present indicative active of *$*h_1es$- 'be'	371
7.19	Sample paradigm: The present indicative active of *$*b^her$- 'carry'	371
7.20	Latin conjugation types	373
7.21	Third conjugation inflectional types	374
7.22	The personal endings of the present and aorist active	384
7.23	The personal endings of the PIE perfect active	387
7.24	The personal endings of the PIE middle	389
7.25	A sample of direct middles	393
7.26	A sample of indirect middles	393
7.27	A sample of reciprocal middles	393
7.28	A sample of deponent verbs with recoverable middle meaning	396
7.29	A sample of deponents with no recoverable middle meaning	396
7.30	The Latin passive perfect tenses	400
7.31	The PIE subjunctive and Latin future of 'to be'	401
7.32	The PIE subjunctive of *$*b^her$- 'carry'	401
7.33	The PIE optative and Latin subjunctive present of 'to be'	401
7.34	PIE active imperative endings	404
7.35	PIE middle imperative endings	404
7.36	Latin active imperatives	404
7.37	Latin deponent/middle imperatives	404

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State College
September, 1998

Credits

Photographs and reproductions

Item	*Language/title*	*Source*
Plate 1	Faliscan	Soprintendenza Archeologica per l'Etruria Meridionale, Rome
Plate 2	Marrucinian	After Mommsen, *Die unteritalischen Dialekte*, Plate XIV
Plate 3	Marsian	Agence Photographique de la Réunion des Musées Nationaux, Paris. Musée du Louvre
Plate 4	Oscan	Soprintendenza Archeologica di Napoli e Caserta, Naples
Plate 5	Paelignian	Soprintendenza Archeologica di Napoli e Caserta, Naples
Plate 6	South Picene	Museo Archeologico, Ascoli Piceno
Plate 7	Umbrian	Foto Gavirati, Gubbio
Plate 8	Vestinian	Soprintendenza Archeologica di Napoli e Caserta, Naples
Plate 9	Volscian	Soprintendenza Archeologica di Napoli e Caserta, Naples
Plate 10	Gaulish/Latin	Musei Vaticani, Rome
Plate 11	Lepontic	Civiche Raccolte Archeologiche di Milano
Plate 12	Messapic	Biblioteca Comunale "Marco Gatti", Manduria
Plate 13	North Picene/Latin	Museo Archeologico Oliveriano, Pesaro
Plate 14	Raetic	Museo Nazionale, Trento
Plate 15	Raetic	Museo Civico, Padua
Plate 16	Sicel	After Conway—Whatmough—Johnson, *The Prae-Italic dialects of Italy*, vol. 2, p. 446
Plate 17	Venetic	Museo Civico, Padua
Plate 18	Latin	From Gordon, *Illustrated introduction to Latin epigraphy*, plate 1, with permission of the author and the University of California Press
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Plate 26	Latin	École Française d'Archéologie, Athens

Alphabetic chart

Table 4.1 The development of the alphabet — After Almar, *Inscriptiones Latinae*, p. 10

Abbreviations and symbols

Languages

Alb.	Albanian
Arm.	Armenian
AS	Anglo-Saxon
Att.	Attic
Av.	Avestan
Bret.	Breton
CLat.	Classical Latin
Cret.	Cretan
Dor.	Doric
Eng.	English
Etr.	Etruscan
Falisc.	Faliscan
Fr.	French
Gaul.	Gaulish
Germ.	German
Gk.	Greek
Gmc.	Germanic
Goth.	Gothic
Heb.	Hebrew
Hier.	Hieroglyphic
Hitt.	Hittite
Hom.	Homeric
Icel.	Icelandic
IE	Indo-European
Ion.	Ionic
Ir.	Irish
It.	Italian
Lat.	Latin
Latv.	Latvian
Lemn.	Lemnian
Lesb.	Lesbian
Lith.	Lithuanian
Luw.	Luwian
MIr.	Middle Irish
Myc.	Mycenaean
Norw.	Norwegian
O–U	Oscan–Umbrian
OCS	Old Church Slavic
OE	Old English
OHG	Old High German
OIc.	Old Icelandic
OIr.	Old Irish
OLat.	Old Latin
OLatv.	Old Latvian
OLith.	Old Lithuanian
OPers.	Old Persian
OPruss.	Old Prussian
OSax.	Old Saxon
Osc.	Oscan
OWel.	Old Welsh
Paelign.	Paelignian
Phry.	Phrygian
PIE	Proto-Indo-European
Praen.	Praenestine
Rom.	Roman
Russ.	Russian
Sab.	Sabine
Skt.	Sanskrit
Slov.	Slovene
Span.	Spanish
Tibur.	Tiburian
Toch.	Tocharian
Umbr.	Umbrian
Ved.	Vedic
Ven.	Venetic
Volsc.	Volscian
Wel.	Welsh

Symbols

†	indicates an ungrammatical string
*	indicates a reconstructed form
**	indicates an impossible form
→	is replaced by
<	develops from
>	develops into
[ ]	indicates phonetic representation
/ /	indicates phonemic representation
⟨ ⟩	indicates orthographic representation

Other

1st	1st person
2nd	2nd person
3rd	3rd person
abl.	ablative
acc.	accusative
AcI	Accusativus cum infinitivo (Accusative with infinitive)
act.	active
adj.	adjective
adv.	adverb
aor.	aorist
athem.	athematic
Aux	Auxiliary
B.C.E.	Before the Common Era
C	consonant
C.E.	In the Common Era
CLE	Carmina Latina Epigraphica
cf.	confer (compare)
CIE	Corpus Inscriptionum Etruscarum
CIL	Corpus Inscriptionum Latinarum
con.	conjugation
conj.	conjunction
contemp.	contemporaneous
dat.	dative
dec.	declension
dep.	deponent
dial.	dialect
du.	dual
emph.	emphatic
fem.	feminine
fut.	future
gen.	genitive
imper.	imperative
imperf.	imperfect
impft.	imperfective
indic.	indicative
inf.	infinitive
INFL	inflection (as syntactic constituent)
instr.	instrumental
interj.	interjection
interr.	interrogative
lit.	literally
LL	Lachmann's Law
loc.	locative
masc.	masculine
med.	mediopassive
mid.	middle
n.	noun
neut.	neuter
nom.	nominative
NP	Noun Phrase
O	Object
opt.	optative
part.	participle
pass.	passive
perf.	perfect
pers.	person
pl.	plural
poster.	posterior
prep.	preposition
pres.	present
pret.	preterite
prim.	primary
pron.	pronoun
prt.	particle
rel.	relative
RV	Rig Veda
S	Subject
s.v.	sub voce (under the word)
SC de Bacch.	Senatus Consultum de Bacchanalibus
sc.	scilicet (that is to say)
sec.	secondary
sg.	singular
subj.	subjunctive
them.	thematic
V	vowel (as phonological segment)
V	verb (as syntactic constituent)
v.	verb (as part of speech)
vcd.	voiced
vclss.	voiceless
voc.	vocative
VP	Verb Phrase
X	3rd sg. masc./fem. subject

Transcription conventions

0.1. General

In general, phonetic and orthographic symbols used in this book are those found in basic treatments of phonetics (e.g. Ladefoged 1982), and in the standard handbooks for a particular language or field.

0.1.1. Consonant symbols

Stop consonants have their normal representation as ⟨p, t, k, b, d, g⟩. The voiceless labiodental, dental, and palatal fricatives are represented as ⟨f⟩, ⟨s⟩, and ⟨š⟩ respectively, while their voiced counterparts are represented as ⟨v⟩, ⟨z⟩, and ⟨ž⟩. Voiceless interdental fricatives are represented as either ⟨þ⟩ or ⟨θ⟩; their voiced counterparts are represented as ⟨ð⟩ or ⟨δ⟩. For voiceless velar fricatives the symbol ⟨χ⟩ is used; for the voiced velar fricative ⟨ɣ⟩ is used. The symbol ⟨h⟩ is used for the aspirate. The symbols ⟨l, r, y, w⟩ have their normal value; the symbol ⟨ɫ⟩ indicates a back (velar) *l*. The nasals ⟨m⟩ and ⟨n⟩ have their normal values, while ⟨ŋ⟩ indicates a velar articulation.

0.1.2. Vowel symbols

The vowels ⟨a, e, i, o, u⟩ have their "continental" values. A macron over a vowel (e.g. ⟨ā⟩) indicates that the vowel is long, while a breve (e.g.⟨ă⟩) indicates that the vowel is short. A vowel with both a macron and a breve (e.g. ⟨ĕ⟩) is one which can be either long or short. The symbol ⟨ə⟩ marks a mid central vowel. A tilde over a vowel (e.g. ⟨ẽ⟩) usually indicates nasalization, except where noted below.

0.1.3. Accent symbols

The acute accent (e.g. ⟨é⟩) typically indicates the main accent, the circumflex (e.g. (⟨ê⟩ or ⟨ẽ⟩) the next most prominent accent, and the grave (e.g ⟨è⟩) the least prominent accent.

0.2. Symbols by language

0.2.1. Albanian

The symbol ⟨ë⟩ represents [ə]; ⟨y⟩ (also written ⟨ü⟩) represents a close high front rounded vowel.

0.2.2. Anatolian

The symbol ⟨ḫ⟩ in Anatolian most likely represents a fricative, possibly with palatovelar articulation. The symbol ⟨š⟩ represents [s], and ⟨z⟩ represents [ts].

0.2.3. Armenian

Consonants followed by a ' are aspirated, e.g. ⟨t'⟩. The symbol ⟨c⟩ represents [ts]. The symbol ⟨č⟩ represents [č], and its voiced counterpart [ǰ] represents [ǰ].

0.2.4. Baltic

The letter ⟨ė⟩ in Lithuanian stands for a close *e*, i.e. [ę]. The circumflex written with a tilde (e.g. ⟨ã⟩) indicates smooth rising intonation. A hook under a vowel (e.g. ⟨ę⟩) represents nasalization. The letter ⟨c⟩ stands for [ts], while ⟨č⟩ represents [č].

0.2.5. Celtic

The letter ⟨c⟩ in Old Irish represents [k]. A vowel marked by an acute accent (e.g. ⟨á⟩) is long.

0.2.6. Etruscan

The letter ⟨s⟩ represents [s], and the letter ⟨ś⟩ represents [š].

0.2.7. Germanic

For the value of the Gothic diphthongs see chap. 2, table 2.9. The symbol ⟨hu⟩ in Gothic represents a labialized voiceless velar fricative [χ^{w}]. A ⟨q⟩ in Gothic repre-

sents a labialized velar [kʷ]. The letter [æ] in Old English is phonetically [æ], i.e. a low front vowel. The symbol ⟨ø⟩ in Old Icelandic represents a mid front rounded vowel.

0.2.8. Greek

Greek letters have their standard values. The archaic digamma (Ϝ) is pronounced as the labial glide [w]. The acute accent indicates high pitch, the grave indicates low pitch, and the circumflex combines acute and grave. In Mycenaean transcriptions, a ⟨q⟩ probably indicates a voiceless labiovelar stop.

0.2.9. Indo-Iranian

0.2.9.1. Sanskrit and Vedic

The acute accent (e.g. ⟨á⟩) indicates high pitch. Aspirated stops are indicated by a following ⟨h⟩ (e.g. ⟨ph⟩). A dot under a letter (e.g. ⟨ṭ⟩) indicates retroflex articulation. The letters ⟨c⟩ and ⟨j⟩ are phonetically [č] and [ǰ] respectively. The letter ⟨ś⟩ (formerly written ⟨ç⟩) represents [š]. Final ⟨ḥ⟩ is a voiceless velar aspirate. The letters ⟨ṛ⟩ and ⟨ḷ⟩ represent vocalic *r* and *l*. A dot over an m (⟨ṁ⟩) marks nasalization of the preceding vowel. A tilde over an n (⟨ñ⟩) indicates palatal articulation.

Unless specific material is being highlighted, the term "Sanskrit" (Skt.) is used throughout this volume to designate language forms from Old Indic, both Vedic and (classical) Sanskrit. In general, the forms cited are Vedic. Sanskrit examples are cited either as roots or as inflected forms. Roots are indicated by a hyphen at the end, as in the substantive *vṛ́ka-* 'wolf' or the verb *yuj-* 'join'. Inflected forms for substantives are typically the nominative singular, as in *vṛ́kaḥ* 'wolf', while for verbs they are either in the third person singular indicative, as in *bhárati* 'X carries', or the first person singular, as in *bhárāmi* 'I carry'. When Sanskrit forms are cited in a form ending in a final consonant, the consonant is changed according to the phonological rules of Sanskrit for finals. For example, the nominative singular of *ékas* 'one' and the genitive singular *datás* 'of the tooth' are cited as *ékaḥ* and *datáḥ* in accordance with the rules which convert final *s* to *ḥ*. In general, Sanskrit words are cited in their inflected form in this volume.

0.2.9.2. Iranian

In Avestan, the symbol ⟨č⟩ (also written ⟨c⟩) is phonetically [č]. The symbol ⟨å⟩ is roughly [ɔ]; ⟨ś⟩ represents [š] as in Sanskrit, and ⟨t̰⟩ is an unreleased *t*.

0.2.10. Italic

In Oscan transcriptions, the letter ⟨ĺ⟩ represents a long open high front vowel [i:] and ⟨ú⟩ represents the open back vowel [o].

In Umbrian transcriptions, the letter ⟨ŕ⟩ has the phonetic value of [rs]; ⟨ç⟩ was probably pronounced [š].

In Faliscan and non-Roman Latin, the letter ⟨q⟩ is occasionally used to indicate a voiceless velar stop.

In Sicel transcriptions the letter ⟨ĺ⟩ represents [i:].

The letter ⟨ĺ⟩ in the transcription of the S. Picene inscriptions represents a long, close mid-palatal vowel, viz. [ę:]. The letter ⟨ú⟩ represents the equivalent in the velar region, i.e. a long, close mid-velar vowel [ǫ:], though there is some evidence that ⟨ú⟩ stands for a short [ǫ] before final *-m*. Also, ⟨ĺ⟩ represents the final sound in *i*-diphthongs in most S. Picene areas.

In transcriptions of N. Picene the symbol ⟨ś⟩ represents a dental sibilant [s], while the symbol ⟨š⟩ most likely represents a palatal sibilant like [š], though the possibility exists that it is a variant of ⟨ś⟩. The letter ⟨ú⟩ possibly represents the lower high rounded back vowel [ʊ].

0.2.11. Slavic

The symbols ⟨ĭ⟩ and ⟨ŭ⟩ represent the vowels ь short *i* (as in *pit*) and ъ short *u* (as in *put*) respectively. A hook under a vowel (e.g. ⟨ę⟩) represents nasalization. The symbol ⟨ě⟩ stands for the lower mid front vowel [ɛ]. The symbol [c] represents [ts], while the symbol [č] represents [č].

0.2.12. Tocharian

The symbol ⟨ş⟩ represents palatalized *k*; the symbol ⟨c⟩ represents palatalized *t*; and the symbol ⟨ś⟩ represents palatalized *s*. A tilde over an *n* (⟨ñ⟩) indicates palatalized *n*. A dot under an m (⟨ṃ⟩) shows that the preceding vowel is nazalized. The symbol ⟨ä⟩ represents a vowel of uncertain quality, possibly something like the high central [ɨ].

0.2.13. Proto-Indo-European

Raised ⟨h⟩ (e.g. ⟨b^h⟩) marks aspiration on the preceding stop. Voiceless palatals are indicated by ⟨$\hat{k}$⟩; voiced palatals are marked by ⟨$\hat{g}$⟩ and ⟨$\hat{g}^h$⟩. Voiceless labiovelars are indicated by ⟨k^u⟩; voiced labiovelars are indicated by ⟨g^u⟩ and ⟨g^{uh}⟩. Glottalized

stops (ejectives) are indicated by a ' after a consonant, e.g. ⟨t'⟩. When marked, semivowels are indicated by ⟨u̯⟩ and ⟨i̯⟩. When marked, syllabic resonants are indicated by an open circle under a letter, viz. ⟨m̥, n̥, l̥, r̥⟩. When discussed, long resonants are indicated by a macron (e.g.⟨r̄n̥⟩). The PIE laryngeals are assigned the symbols ⟨h_1, h_2, h_3⟩.

Chapter 1
Indo-European and the Indo-European languages

1.1. Introduction

By their very nature, languages have histories which reach far back in time. It is the task of historical-comparative linguistics to recover the details of that history. From the evidence of the ages, including the present, a composite picture of the linguistic past is assembled, piece by piece, according to established principles of investigation. The recovery effort requires a body of data, a theory of language change, and a set of methods which are sophisticated enough to lead to well-motivated historical inferences.

If the language under inquiry has a long and ample literary tradition, providing monuments of itself as it has moved through time, the task is somewhat simpler than it is if the language has no recorded history. The rich and deep written remains of English, for example, provide excellent material records which reach back more than 1,000 years. For this language, it is possible to trace the evolution of a single sound, form, word, or construction through written texts, revealing the patterns of change and development which have been at work in the language throughout its recorded history. Such a wealthy literary tradition puts the historian of English in an enviable position, with fixed points from which to proceed in the explanatory process, such as Old English texts, Middle English literature, and so on, right up to the present day. This wealth of data allows sophisticated accounts of the evolution of the structures of the language over a considerable span of time. But the English language did not begin at some arbitrary point which has been labeled "Old English" by historians of the language, say 700 C.E. Indeed, the history of English stretches well into the remote past, into a period before there was an identifiable language called English, and well before there were any written monuments to record its linguistic shape. It is the deeper task of the historian of English to go beyond the identifiable material documents and to stretch the methods of historical inquiry into periods before the advent of writing. Only when this is done can the history of the language be in any sense complete.

And what of Latin, a language whose first identifiable monuments stem from the 6th century B.C.E.? Can the linguistic history of such an "ancient" language be written? Unlike Modern English, Latin is the starting point, not the end point, of a literary tradition. Is it possible to go back in time to recover the history of a language with no direct antecedents providing evidence of some earlier documented stage? The history of English is revealed not only by Old, Middle, and Modern English materials, but also by the copious information provided on early dialects which has been transmitted in the texts. But there is no Latin before Latin as it is attested; how can the historical investigation of this language be carried out?

Though the task is somewhat more difficult than that confronting the historian of English (and somewhat easier than that confronting the historian of an unwritten language), the histories of Latin and of other ancient languages without recorded ancestors can not only be written, they can be written in detail. Historical investigation of such systems can proceed as long as there are other related languages available which furnish some material clues. That is, if it can be established that there is a genetic affinity between the language of inquiry and some other language or languages, research can proceed even in the absence of anterior written records and extensive texts. The analysis of the history of English, for example, is enhanced by materials from related languages such as Gothic, Old Icelandic, and Old High German, which allow the linguistic historian to proceed beyond Old English and to investigate the course of the language before the advent of written records, before it can even be identified as English. To write the history of an ancient language like Latin, it is necessary to make similar use of information provided by genetically related languages, analyzed with a consistent and rigorous methodology. Like English, Latin is a language which has, to pursue the customary genealogical analogy, sisters, cousins, aunts, and daughters, all of which carry clues about its history and that of its parent, Proto-Indo-European (PIE). The survey which follows provides a brief review of the methodology by which ancestral stages of languages are reconstructed, the evidence used to establish the existence of the Indo-European (IE) family of languages, and a summary of the languages which make up this, the most important language family in the world.

1.2. Methodological preliminaries

During the approximately two centuries in which the interrelationships among the IE languages have been systematically studied, techniques which demonstrate genetic affiliations among languages have been developed with considerable success. Chief among these techniques is the comparative method, which takes shared linguistic features as its data and provides procedures for establishing ancestral proto-forms. Since the focus of this chapter is Indo-European and not methods of reconstruction, the review of the comparative method will be based only on data from IE languages. This method, however, is not restricted in its applicability to IE languages. It is the methodological centerpiece of historical linguistic inquiry in language families of widely different size and structure. For more than a century now, specialists have been refining this and other methods which guide their efforts to retrace the linguistic past.

1.3. The comparative method and the regularity principle

There are many issues which must be considered to capture the central notions involved in the comparative method. Among these issues are the universality, replicability, and limits of the method. Universality is a central concern. Procedures which are effective only with certain languages, or types of languages, are of limited general value. Replicability is also a crucial issue. A method which yields different results to different investigators can lay no claim to a scientific basis. Finally, the limitations of the method are also of pivotal concern, as the time-depth and the structural consistency which can be attained by reconstruction techniques bear significant implications for the status of protolanguages.

Most research on linguistic change, past and present, has been guided by principles, methods, and assumptions which were formulated in the nineteenth century. It was during this period that the Indo-European, Semitic, and Finno-Ugric languages provided the main empirical foundations for modern theories of language change and contributed to the development of methods for reconstruction. Semitic was scientifically established as a linguistic entity by the late eighteenth century (the term "Semitic" was first used by August Schlözel in 1781), and the unity of Finno-Ugric was demonstrated by Sámuel Gyármathi (1799). This work was influential in the nineteenth century when such scholars as Rasmus Rask, who proposed an essay on Germanic phonology for a prize by the Danish Academy of Sciences in 1811 (published 1818), and Franz Bopp, who began the comparative linguistic analysis of Sanskrit (1816), were undertaking systematic investigations of the IE language family.

Work done on the IE languages during the nineteenth century continues to provide a methodological focal point for the conduct of studies of language relationships. This focus has resulted from the long and well-established traditions of the IE languages and of IE scholarship. There is a wealth of written data from this language family, with salient materials from nearly every branch. It has a wide geographical and cultural spread, extending from Europe to India at the time of its discovery and now spanning the globe. It has a rich time depth, with recorded data stretching deep into the second millennium B.C.E. And, the IE family has a relative homogeneity among its eleven well-attested branches which facilitates comparison and reconstruction.

The models of description and the associated theoretical paradigms which have emerged from the intensive comparative study of the IE and other languages contain at least the following central notions relating to the establishment of genetic units and the reconstruction of ancestral (proto)languages. These notions have been applied to non-IE languages as well, and their apparent universal utility is a basic premise of historical-comparative linguistic analysis.

1) A significant percentage of cognates (words with a common origin) in core vocabulary areas must be demonstrated in order to establish genetic affinity

between languages. This is a crucial step in the comparison of lexical items across languages, which allows the formation of reconstruction hypotheses (see table 1.1 for a list of such cognate forms). The demonstration of cognacy further involves the notion that there are reliable ways to recognize borrowings, such as Eng. *tsunami* from Japanese, or Eng. *paternal* from Latin; onomatopoeia, such as Eng. *bubble* and *buzz*; and accidents of linguistic history which result in chance lexical similarities, such as Eng. *man* and Karitiana *man* 'husband' (Karitiana is a Tupian language spoken in the Amazon region of Brazil). None of these can play a part in either the postulation of a genetic unit or in the reconstruction equation itself.

2) Phonological change is regular; that is, in any given language, all tokens of a particular phonological type will change in the same way across time, under like conditions. Because of the principle of regularity, in which exceptions and irregularities are explained by further subregularities, one expects to find consistent and systematic sound correspondences (matchings) between cognate forms in cognate languages. This is the classic nineteenth century position which is often labeled as the "Neogrammarian Principle" (after its nineteenth century originators), or the "regularity principle": regular sound change has no exceptions; when exceptions occur, they are governed by other recoverable rules. A claim of genetic relatedness for two or more languages must be substantiated by sets of recurring correspondences in phonological systems, and replicable reconstruction can only proceed if some form of the regularity hypothesis is adopted. The IE languages show such phonological regularity to a great degree. The well-known sound changes which define a set of changes from the reconstructed protolanguage into Germanic known as "Grimm's Law" provide an excellent example of such regularity. The exceptions to Grimm's Law, which are covered by Verner's Law[1] and other associated regular sound changes, provide the original cornerstone for what has proven to be a well-validated principle.

3) The regularity of systematic correspondences between related languages makes possible the application of the comparative method, a procedure for postulating reconstructed proto-forms on the basis of the attested evidence of the descendant languages. The comparative method is based on the principle that sets of recurring sound correspondences between two related languages continue blocks of positionally determined sounds from the mother language (Hoenigswald 1960: 132). The comparative method requires data from at least two languages, though many more can be placed into the reconstruction equation. The method is supplemented by the ancillary procedure of internal reconstruction, which generates hypotheses concerning the earliest recoverable evidence from within a single language by investigating the internal alternation of linguistic elements.

Reconstructions based on the application of the comparative method can be verified by reference to independently established structural principles (typology).

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1 Grimm's and Verner's Laws are discussed in chap. 2. A useful summary of these and other "laws" in IE linguistics is Collinge (1985).

These principles, which in part define linguistic universals and establish parameters for structural configurations, provide an external check on the empirical validity of a reconstruction.

4) Historical processes of various sorts—phonological, morphological, lexical/semantic—can compromise sound changes, concealing shared features between languages. Auxiliary explanatory devices such as analogy (grammatical change), borrowing, or areal contact strengthen the notion of regular sound change by providing mechanisms to explain some kinds of irregularity, thereby accounting for the absence of firm correspondences. For example, the recognition that analogy can confound the operation of a regular sound change by either causing it not to apply, or by obscuring its results, has played an important role in the formulation of the comparative method. The rich array of analogical processes which work sometimes in conjunction, and sometimes at odds, with phonological processes has resulted in a strengthening of the notion of regular sound change. And while the unpredictable and non-formalizable nature of analogy, as well as its sometimes unrestricted explanatory power, have been points of interest and debate among historical linguists, its dominant role in language change, at least in the IE family, is undeniable.

Of course, it is reasonable to ask why it is that phonological systems remain full of irregularity when normal sound change is regular (excluding so-called sporadic changes, which can apply to some words and not others). The answer is a paradox. On the one hand, sound change is regular but often creates irregularity, especially in paradigms where one form may not fit the environment of the sound change at work. On the other hand, analogy, which is irregular and unpredictable in its operation, establishes regularity by eliminating allomorphy within paradigms. Take the example of Latin rhotacism, whereby (roughly) *s* becomes *r* between vowels, using the word *honor* 'honor' for illustration.[2] The Old Latin form of the nominative of this word is *honōs*. By the normal application of the rhotacism rule, the paradigm of *honōs* looks as follows (singular only).

nom. *honōs*
gen. *honōris*
dat. *honōrī*
acc. *honōrem*
abl. *honōre*

This paradigm is irregular in that there is an allomorphic variation between the nominative form *honōs* and the oblique stem *honōr-*. The irregularity is resolved by the analogical restructuring of the nominative form to *honor* (with regular shortening of the *ō* before final *-r*), thereby re-establishing a monomorphemic stem *honōr-* and restoring paradigmatic regularity. Despite the regularity that it creates, the ana-

2 This example is deliberately oversimplified. A more detailed discussion of rhotacism is provided in chap. 6.

logical restructuring of the stem to *honōr-* throughout the paradigm appears to be unpredictable. Other candidates for such a restructuring process like *corpus, corporis* 'body' never developed a nominative form **corpor*,[3] and there is really no way to know in this case why *honōs* was affected while *corpus* was not.

5) The relatability of irregular forms, especially irregular morphological forms, is an index of genetic affinity among languages and an important tool in the recovery of proto-stages. Implicit in this notion is the assumption that language change in general is not only regular in its operation, but that it leads to greater regularity in the resulting linguistic system (though it is certainly true that regular sound change can create irregular outputs). Such regularity is consistent with the notion that speakers must be able to preserve communication across generations, and that the system which results from a change or series of changes must be internally consistent. Irregular forms (i.e. those not derivable by general rule) are for the most part historical residue and are relatively limited in a language system; they are not generally introduced in the process of language change. Furthermore, when such irregularities, especially morphological irregularities, are found to correspond across languages, they provide a clear index of genetic relatedness. For example, the widespread irregularity of the verb 'to be' in IE languages indicates quite clearly that the various languages in which this verb is represented must be related to each other. Not only is 'to be' irregular, but it is consistent in its irregularity across languages. See table 2.18 on p. 76 for a few sample paradigms of this verb.

6) In language families with traditions of literacy, sound changes can often be recovered from written data. Because of the lengthy literary histories of many of the IE languages, there is considerable orthographic evidence of changes in individual languages as they are recorded through time. The interpretation and understanding of these orthographic representations requires a thorough philological understanding of the texts themselves and a sensitivity to the writing habits and traditions of diverse groups, from illiterate stonecutters inscribing monuments, to everyday citizens scribbling graffiti, to semi-educated scribes recording documents, to skilled language users. Such expertise enables investigators to plot changes in the physical linguistic record, to interpret them, and to integrate them into the theory of sound change.

The six criteria just discussed, as well as the many additional subcriteria and associated methodologies, are based on a conception of language change which is for the most part phonologically based. That is, the techniques of linguistic reconstruc-

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3 An * before a segment or morph indicates that the form is reconstructed. Most often in this volume the * will indicate that the form is reconstructed PIE, e.g. **h₁ekuo-* 'horse'. Frequently, however, the * is used to represent an unattested form of pre-Latin, pre-Greek, etc. (e.g. *generis* 'of the race' < **geneses*, Osc. *factud* 'do' < **fakitōd*), or a possible but unattested form (e.g. Lat. **corpor* 'body'). A ** indicates that a word-form is not only unattested, but impossible. Ungrammatical syntactic constructions are indicated by a †, e.g. Lat. †*cum mē* for *mēcum* 'with me'.

tion which have proven especially useful in the recovery of ancestral stages in the IE languages are most appropriately characterized in terms of phonological processes (see Kiparsky 1995). The "ripple effect" of phonological change as it reshapes morphs, and ultimately can result in a reorientation of grammatical categories and processes, is a characteristic feature of change in the IE family. This is not to say, of course, that there are no independent morphological or syntactic changes, or that there is no independently established comparative morphology or comparative syntax. In general, however, the regularity principle is a principle of phonology.

The foregoing notions concerning linguistic change and reconstruction have led to fruitful results in the understanding of the IE family and have set the methodological standard for research on language change in studying non-IE languages as well.

The claim that two or more languages are genetically related carries with it the associated claim that the two share common ancestry. Methods of historical investigation should provide a means of recovering the ancestral system, attested or not. The initial demonstration of relatedness is in many ways the easy part; establishing well-motivated intermediate and ancestral forms is quite another matter. Among the difficulties are the following: How many shared similarities are enough to prove relatedness conclusively, and what sort of similarities must they be? Which features in which of the languages being compared are older? Which are innovations? Which are borrowed? How are similarities and differences evaluated for significance? What assumptions are made about the relative importance of lexical, morphological, syntactic, and phonological characteristics, and about directions of language change?

Though all of these questions come into play in any reconstruction effort, there is an initial assumption: if two or more languages share a feature which is unlikely to have arisen by accident, borrowing, or as the result of some typological tendency or language universal, then it is assumed to have arisen only once and to have been transmitted to the two or more languages from a common source. The greater the number of shared features that are discovered and securely identified, the sounder the relationship. One "rule of thumb" in IE reconstruction is that for a morph to be projected back to PIE, it should be represented in at least three descendant language groups, and if only three, they should not all be geographically contiguous. Another stipulates that at least one member of the European and one member of the Asian sides of the family be represented before the form can be securely postulated for the parent language.

In determining genetic relationship and reconstructing proto-forms using the comparative method, it is customary to start with vocabulary. A list of possible cognates which is likely to produce a maximum number of common inheritance items, known as the basic vocabulary list, provides many of the words to be investigated, such as first-order kinship terms, pronouns, body parts, lower numerals, and others.

Table 1.1. Some basic Indo-European terms

A. Numerals from 1–10

	one	two	three	four
Skt.	ékaḥ	dvá(u)	tráyaḥ	catvắraḥ
Gk.	οἶνη 'ace'[a]	δύ(ϝ)ο δύω	τρεῖς	(Att.) τέτταρες, (Hom.) τέσσαρες
Lat.	ūnus	duo	trēs	quattuor
Hitt.		dā-	teri-	
Toch. A		wu	tre	śtwar
B		wi	trai	śtwer
OIr.	óen	dáu, dó	tri	ceth(a)ir
Goth.	ains	twai	þreis	fidwōr
OCS	(jed-)inŭ	dŭva	trĭje	četyre
Lith.	víenas	dù	trỹs	keturì
Arm.	mi[b]	erku	erek'	č'ork'
Alb.	një, nji	dy	tre, tri	katër

	five	six	seven	eight
Skt.	páñca	ṣáṭ-	saptá	aṣṭắ(u)
Gk.	πέντε, πέμπε	ἕξ	ἑπτά	ὀκτώ
Lat.	quīnque	sex	septem	octō
Hitt.			šipta-	
Toch. A	päñ	ṣäk	ṣpät	okät
B	piś	ṣkas	ṣukt	okt
OIr.	cóic	sé	secht n-	ocht n-
Goth.	fimf	saíhs	sibun	ahtau
OCS	pętĭ	šestĭ	sedmĭ	osmĭ
Lith.	penkì	šešì	septynì	aštuonì
Arm.	hing	vec'	ewt'n	ut'
Alb.	pesë	gjashtë	shtatë	tetë

	nine	ten
Skt.	náva	dáśa
Gk.	ἐννέ(ϝ)α	δέκα
Lat.	novem	decem
Hitt.		
Toch. A	ñu	śäk
B	ñu	śak
OIr.	nói n-	deich n-
Goth.	niun	taíhun
OCS	devętĭ	desętĭ
Lith.	devynì	dẽšimt
Arm.	inn	tasn
Alb.	nëndë	dhjetë

Table 1.1. Some basic Indo-European terms *(continued)*

B. Animal names

	mouse	wolf	cow	sheep
Skt.	mū́ṣ-	vṛ́kaḥ	gáuḥ	áviḥ
Gk.	μῦς	λύκος	βοῦς, Dor. βῶς	ὄ(Ϝ)ις
Lat.	mūs	lupus	bōs	ovis
Hitt.				ḫawi- (Hier. Luw.)
Toch. A			ko	
B	maścītsi (pl.)	walkwe	keu	(pl.) āwi(?)
OIr.		olc 'evil'	bó	ói
Goth.	mūs (OHG)	wulfs	kýr (OIc.)	ouwi (OHG)
OCS	myšĭ	vlĭkŭ	gumĭno 'threshing floor'	ovĭca
Lith.		vìlkas	gùovs (Latv.)	avìs
Arm.	mukn	gayl	kov	hoviw 'shepherd'
Alb.	mi	ulk	ka	

	pig	dog	horse
Skt.	sūkaráḥ	śvá	áśvaḥ
Gk.	ὗς	κύων	ἵππος, Myc. i-qo
Lat.	sūs	canis	equus
Hitt.			azu(wa) (Hier. Luw.)
Toch. A		ku	yuk
B	suwo	ku	yakwe
OIr.		cú	ech
Goth.	swein	hunds	eoh (OE)
OCS	svinija	súka (Russ.) 'bitch'	
Latv.	su/ivēns 'young pig'	šuõ (Lith.)	ešvà, ašvà (OLith.) 'mare'
Arm.		šun	ēš 'donkey'
Alb.	thi		

C. Body parts

	foot	heart	eye	tongue
Skt.	pā́t		ákṣi	jihvā́
Gk.	Att. πούς (gen. ποδός)	καρδίᾱ	ὄμμα, ὄψομαι 'I will see'	
Lat.	pēs (gen. pedis)	cor (gen. cordis)	oculus	lingua (OLat. dingua)
Hitt.	pata- (Hier. Luw.)	kard-		
Toch. A	pe	kri	ak	käntu
B	paiyye	käryäñi (pl.)	ek	kantwo
OIr.	ís 'below'	cride	enech	teng
Goth.	fōtus	haírtō	augō	tuggō
OCS	pĕšĭ 'on foot'	srŭdĭce	oko	językŭ
Lith.	pādas 'sole'	širdìs	akìs	liežùvis
Arm.	otn	sirt	akn	lezu
Alb.	(për)posh 'under'		sy	

Table 1.1. Some basic Indo-European terms *(continued)*

D. Kinship terms

	mother	father	sister	brother
Skt.	mātā́	pitā́	svásā	bhrā́tā
Gk.	(non-Att.) μᾱ́τηρ	πατήρ	ἔορ (voc.) 'daughter'	φρᾱ́τηρ 'member of a phratry'
Lat.	māter	pater	soror	frāter
Hitt.				
Toch. A	mācar	pācar	ṣar	pracar
B	mācer	pācer	ṣer	procer
OIr.	máthir	athir	siur	bráth(a)ir
Goth.	mōðir (Olc.)	fadar	swistar	brōþar
OCS	mati		sestra	bratrŭ, bratŭ
Lith.	mótė 'woman'		sesuõ	brólis
Arm.	mayr	hayr	k'oyr	elbayr
Alb.	motrë 'sister'			

E. General terms

	full	family, race	month	dead, death
Skt.	pūrṇáḥ	jánaḥ 'person'	mā́saḥ	mṛtáḥ
Gk.	πλήρης	γένος	μήν	ἄμβροτος 'immortal'
Lat.	plēnus	genus	mēnsis	mortuus
Hitt.				mer-, mir- 'to die, disappear'
Toch. A			mañ	
B	pällew (full, of moon)		meñe	
OIr.	lán	gein 'birth'	mí	marb
Goth.	fulls	kuni	mēna, mēnōþs	maúrþr 'murder'
OCS	plŭnŭ		měsęcĭ	mĭrǫ, mrěti
Lith.	pìlnas		mėnuo	miřti
Arm.	li	cin 'birth'	amis	
Alb.	plot		muaj	

a Gk. οἶνη 'ace', as on dice, is the appropriate cognate for comparison in this chart. However, it does not exist as part of the counting system. Greek makes use of the other PIE form designating 'one', viz. **sem-*, seen in εἷς, μία, ἕν.

b Arm. *mi* is related to Gk. εἷς, μία, ἕν 'one' (< **sem-*).

From these and other data, sets of equations (correspondences) are established. Correspondence statements stipulate that in a given environment, phoneme X of one language will correspond to phoneme Y of another language consistently and systematically if the two languages are descended from a common ancestor. See table 1.1 for some examples.

The comparative method can be illustrated through the examination of a few lexi-

Table 1.2. Selected lexical items illustrating the comparative method

	'mouse'	'mother'	'nine'
Skt.	mū́ṣ-	mātā́	návaḥ
Gk.	μῦς	μάτηρ	ἐννέ(Ϝ)α
Lat.	mūs	māter	novem
OHG	mūs	mōðir (Olc.)	niun (Goth.)
	'dead'	'dog'	'family, race'
Skt.	mṛtáḥ	śvá	jánaḥ
Gk.	ἄμβροτος	κύων	γένος
Lat.	mortuus	canis	genus
Goth.	maúrþr	hunds	kuni
	'I am'	'I vomit'	'old'
Skt.	ásmi	vámiti 'X vomits'	sánaḥ
Gk.	εἰμί	ἐμέω	ἔνος 'last year's'
Lat.	sum	vomō	senex
Goth.	im	vāma (Olc.) 'sickness'	sineigs

Table 1.3. Nasals aligned for comparison

	'mouse'	'mother'	'nine'	'dead'	'dog'	'family, race'	'I am'	'vomit'	'old'
Skt.	m-	m-	-n-	m-	-n	-n-	-m-	-m-	-n-
Gk.	m-	m-	-nn-	-m(b)-	-n	-n-	-m-	-m-	-n-
Lat.	m-	m-	-n-	m-	-n-	-n-	-m	-m-	-n-
Gmc.	m-	m-	-n-	m-	-n-	-n-	-m	-m-	-n-

cal items from IE sister languages,[4] restricting the data to fairly clear cases (table 1.2).[5] The discussion will be restricted to the nasals *m* and *n*, arranged for comparison in table 1.3.

Reconstruction can only be undertaken with appropriately compared segments. It is clear that nasal segments match in 'mouse', 'mother', 'dog', 'family, race', 'I am', 'vomit', and 'old', but this is less clear in 'nine' and 'dead'. What of the double νν in Gk. ἐννέ(Ϝ)α? One possibility is that εν- is a prefix, placing the first ν outside the equation.[6] Similarly with ἄμβροτος 'immortal': the α- is a prefix meaning

4 The two most complete etymological accounts of the PIE lexicon are Pokorny (1951–1959) and Watkins (1985). A semantically organized dictionary of the IE languages is Buck (1951). Unless otherwise specified, words in this and the following tables can be assumed to be cognates.

5 In the interest of avoiding gender-bias in glosses, third person verb forms will be glossed with X instead of 'he', 'she', 'it', or some combination of these forms.

6 It is more likely that the difference in the initial segments of Greek and the other languag-

'not' (= Lat. *in-*, Goth. *un-*, etc.), and the β results from a tendency in Greek to break up sonorant clusters like -μρ- (also -μλ-) through the insertion of -β-, resulting in -μβρ- (cf. the parallel process in Lat. *camera* > Fr. *chambre* 'room'). So the *m*'s do indeed align, leaving a consistent set of *m* and *n* correspondences (figure 1.1).

m : m : m : m n : n : n : n

Figure 1.1. Comparative alignment of nasal segments

These alignments represent the horizontal or comparative dimension. Now the segments are "triangulated", adding the vertical, or historical, dimension (figure 1.2).

Figure 1.2. Triangulation of nasal segments

After all the relevant data have been checked and their distributional patterns investigated, a hypothesis can be made concerning the proto-sound. In these two cases the most immediately evident hypothesis is that the proto-sounds were **m* and **n* (figure 1.3).

Figure 1.3. Reconstruction of **m* and **n*

This analysis leads to the statement that **m* > ('develops into') *m* and **n* > *n* in the various daughter languages.

Invariable correspondences such as these are more the exception than the rule in historical-comparative linguistics. It is far more common to find sets in which only a few of the members have identical segments. But the method of comparative reconstruction, when supplemented with sufficient information about the internal structure of the languages in question, can still yield strong results, as illustrated in table 1.4.

At issue are the correspondences which include *s*, *h*, *ḫ*, and *r*. In 'stand' the correspondence set is *s* : *s* : *s* : *s*, with the initial *h* of Gk. ἵστᾱμι the result of reduplication of the root initial *s* and its replacement by *h* (i.e. < **sistāmi*). This replacement

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es is due to the fact that the word for 'nine' began with a "laryngeal" consonant (**h*$_1$) in the protolanguage which is recoverable as ε(ν)- in Greek, but was lost in the other languages. Laryngeals are discussed in chaps. 2 and 6.

Table 1.4. Selected Indo-European cognates

	'stand'	'old'	'tooth' (gen.sg.)	'be' (various forms)
Skt.	sthā- 'stand'	sánaḥ	datáḥ	ástu 'let X be!'
Gk. (Dor.)	ἵστᾱμι 'I stand'	ἕνος	ὀδόντος	ἔω (ᾶ) 'if, whenever I am'
Lat.	stāre 'to stand'	senex	dentis	erō 'I will be'
Goth.	standan 'to stand'	sineigs	(OCS slovese 'word's')	ist 'X is'

reproduces the pattern found in the initial sound of the set 'old', namely *s* : *h* : *s* : *s*. In final position there is the correspondence *ḥ* : *s* : *s* : *s* in 'old' and 'tooth', and in medial position *s* : ∅ : *r* : *s* in 'be' (figure 1.4). What is or are the proto-sound(s)?

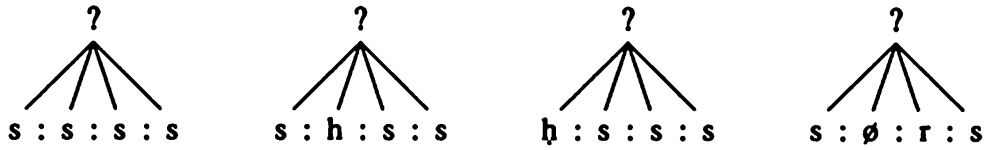

Figure 1.4. Reconstructing **s*

An analysis of these data leads straight to **s* for all four correspondences. For the first set 'stand' there is complete agreement of correspondences, and **s* seems a reasonable reconstruction in the absence of evidence to the contrary. For the second set, a pattern can be discerned by postulating that **s* > *h* in Greek initially (ἵστᾱμι, ἕνος), a lenition (weakening) process found in a number of languages. Such weakening is further evidenced in the forms γένεος and ἔω, where medial **s* > ∅, in which the process has completely obliterated the original **s*. The final *ḥ* of Sanskrit *sánaḥ* and *datáḥ* results from a specific rule of Sanskrit by which final *s* after vowels becomes *ḥ*. And the medial Latin *r* in *erō* is the result of rhotacism, whereby Latin converts intervocalic *s* to *r* (cf. *flōs* 'flower', (gen.) *flōris*). These hypotheses can be verified with countless similar examples.

From these few, admittedly simplified, illustrations it can be seen that the comparative method, when supplemented by adequate information about the internal structure and phonetic processes of the languages in question, and by a consideration of other relevant data, can produce consistent reconstructions of ancestral forms. It is with such methods that PIE is being reconstructed. For a review of comparative reconstruction methodology, see Fox (1995).

Research on a wide variety of the world's languages has shown that there are many strict phonological correspondences of the type found in IE languages. For example, some Native American languages allow for the orthodox application of the comparative method of reconstruction with consistent results. Similar results in both grouping and reconstruction have been achieved in the Austronesian, Dravidian, Finno-Ugric, and many other families. The end product has been a continuous

vindication of the comparative method and the repeated demonstration that its applicability extends beyond its original (Indo-European) domain.

But doubt about the method persists in some quarters. First, it has been asked whether the method is both circular and too powerful, in effect guaranteeing its own success. Critics claim that in the actual application of the comparative method, linguists do something like the following:

a. Make an informed guess about the relatedness of the languages to be compared;
b. Decide what forms are cognate on the basis of gross structural similarity and loose semantic relatability;
c. Reconstruct proto-forms by applying internal and comparative reconstruction methods;
d. Explain away exceptions and irregularities by appeal to analogy and other auxiliary notions;
e. Build "semantic bridges" which adjust results in order to arrive at a more or less unique form with a consistent sound–meaning correspondence.

Critics of the traditional comparative method consistently point to the relatively small number of "good cognates" (i.e. those in which appeal to explanatory devices outside the comparative method is unnecessary), as well as to the often wide disagreement among scholars on the reconstructions themselves, especially those involving polymorphemic structures. But these objections ignore the essential soundness of the method and the continuous fund of confirmed results that it yields when properly applied. The comparative method, despite its restrictions and limitations, provides the most reliable method for reconstructing linguistic history. The method may have some built-in circularity, but the consistent results of the past century make this circularity a reasonable price to pay.

1.3.1. Challenges to the comparative method and the regularity principle

The strongest theoretical challenge to the regularity doctrine is the theory of lexical diffusion, as originally developed by Wang (1969). Wang's claim is that sound changes spread gradually across the lexicon ("words change"), and that phonemes frequently are not the minimal units of historical phonological change. This contrasts with the classic (Neogrammarian) regularity position that change affects all words which include the sound in the appropriate phonetic environment ("sounds change"), and that change proceeds mechanically. Wang points to lexical doublets present in the speech of individuals as evidence for the gradual drift of some words. Such coexisting forms as [kǽtəlag] vs. [kǽtəlɔg] 'catalog' and [sərprájz] vs. [səprájz] 'surprise' seem to indicate that at least some phonological changes are not abrupt and can leave behind variant forms in individual words which may persist for some time, even in the speech of a single person.

Labov (1981, 1994) has argued against the strong form of lexical diffusion in which all change is carried out lexically, without phonetically motivated sound changes. Through a reexamination of some of the principal test cases for lexical diffusion, plus an instrumental analysis of data from urban American changes in progress, Labov has concluded that "there appear to be far more substantially documented cases of Neogrammarian sound change than of lexical diffusion" (1994: 471), confirming the status of mechanical sound change as the dominant mechanism. Labov's conclusions strengthen the operational principle that historical linguists should carry out their research as if all change were regular. See further Wang and Lien (1993), who argue for an interaction between contact-induced change and internal change, and Kiparsky (1995), who defends the Neogrammarian position.

In addition to the disagreement over the integrity of the comparative method itself, questions have been raised for decades over its applicability to languages of widely divergent typologies, or to languages with social, cultural, and geographical characteristics different from those of the IE languages. Doubt seems to flow along several different lines.

First is the matter of the phonological basis of linguistic change which is so much in evidence in the IE languages. The comparative method relies on sound correspondences. Can it be applied to language families in which sound correspondences are irregular and inconsistent? Boretzky (1984), for example, has argued that change in the Arandic languages of central Australia seems to proceed more by abrupt lexical replacement through borrowing than by gradual phonological change. Moreover, these lexical replacements are frequent and cut deep into the core vocabulary commonly held to be resistant to borrowing. Furthermore, the conditions according to which these replacements take place are difficult to imagine in large language families with many speakers, considerable geographical spread, and complex stratified societies. These conditions include borrowing/replacement because of death taboos, which proscribe the use of common nouns contained in the names of tribe members who have died. Also at work are such phenomena as secret languages, mother-in-law languages, and language loyalty and shift according to marriage patterns, all of which reflect social processes in this highly unusual linguistic setting.

A second area of disagreement over the comparative method concerns its usefulness in the establishment of long-distance linguistic relationships and remote protolanguages. Whether linguists can reliably reconstruct distant genetic relationships and establish phylum-level protolanguages is a matter not only of method, but of philosophy of science. At issue are such questions as the following: What counts as data? What are the requirements on semantic relatability? What are the ultimate determinants of cognacy? How much strict regularity is required in phonological equations? How much internal reconstruction should be done prior to comparative reconstruction? What is an acceptable time-depth? Is it legitimate to use a reconstructed protolanguage as an intermediate stage in the reconstruction of an even

Table 1.5. Multilateral comparison[a]

	'one'	'two'	'three'	'hand'	'eye'	'ear'	'mouth'
1	sang	•su	soti	yung	•sing		•a
2	wate	◊iba	•tati	ju(le)	no(do)	•to(go)	yabodo
3	•toro	•ču	agozo	•daho	•samo	◊sumo	◊či
4	ili	◊iwa	•ita	ilɔ	ewu	•ɔtɔ	♦enu
5	mwe	bali	•tato	◊(li-)to	(le-)iso	•(ku-)toi	♦(mu-)nywa
6	•tilo	ndi	yasko	kela	•sim	◊sumo	◊či
7	kiet	◊iba	•ita	◊ete	enyin	•utong	♦inua
8	lakoi	•swe	we	•taha	i	kebbe	•a

a Languages 1, 3, 6, 8 = Saharan; 2, 4, 5, 7 = Niger-Congo. From Greenberg (1954: 408).

more remote protolanguage?

Greenberg has claimed (1987) that the native languages of the Americas can be classified into three main genetic groups, with ninety percent of them in what he calls "Amerind" and other ten percent in the groups he calls "Na-Dene" and "Eskimo-Aleut". Though most specialists agree on the isolation of Na-Dene and Eskimo-Aleut as separate families, the postulation of one super-group (Amerind) containing all the rest contrasts with the more general view, which holds that perhaps as many as one hundred fifty or even two hundred independent families can be established, and according to which deeper relationships are so far poorly demonstrated. Greenberg's method is the same one he used for his classification of the languages of Africa (Greenberg 1963a). His classification methodology is based not on the application of the orthodox comparative method, but rather on the technique of "multilateral comparison". The multilateral approach considers a relatively small number of words across a relatively large number of languages and attempts to expose similarities in form and meaning which reveal genetic relatedness among the languages. The technique of multilateral comparison is illustrated in table 1.5, where eight languages are compared (the vertical column) across seven core lexical items (the horizontal column). Purported cognates, based on superficial phonetic similarities, are marked in each column by the identifying symbols •, ◊, and ♦. Words without identifying marks are considered to be non-cognate forms. The resulting overall pattern is claimed to reveal a distribution of cognate forms such that languages 1, 3, 6, and 8 form one group, while languages 2, 4, 5, and 7 form another.

The large number of languages used in the comparison (though not in this illustration) typically increases the chance for similarities, and the lack of a phonological correspondence requirement across cognate forms makes the procedure considerably more flexible than the comparative method as described earlier. Of course, it is significant that the goal of multilateral comparison is not reconstruction, but rather classification. Greenberg rejects the traditional idea that regular phonological correspondences are the only certain way to establish linguistic relationships. For a dis-

Table 1.6. Examples of reconstructed Proto-Nostratic[a]

1.	PN **bur-/bor-* 'to bore, to pierce'	PAA **bər-/bər-* 'to bore, to pierce'; PIE **b^{h}or-/b^{h}ɾ-* 'to bore, to pierce'; PU **pura* 'borer, auger'; PD **pur-* 'gimlet, borer, to bore, to perforate'; PA **bur-* 'to bore a hole'; S *bùr* 'to bore through, to pierce'.
2.	PN **t'ar-/t'er-* 'to tear, to rend, to cut, to sever'	PIE **t'er-/t'or-/t'ɾ-* 'to tear, to rend, to flay'; PD **tar-* 'to cut, to cut off, to lop off, to strip off', **ter-* 'to burst asunder, to split, to cut, to cut off'; S *dar* 'to split'.
3.	PN **tl^{h}unk^h-/tl^{h}onk^h-* 'to hook up, to hang, hanging, dangling, peg, hook'	PAA **tl^{h}ənk^h-/tl^{h}ank^h-* 'to hook up, to hang, peg, hook'; PIE **k^{h}onk^h-* 'to hook up, to hang, peg, hook'; PD **cuṅk-* 'piece hanging out or dangling'.
4.	PN **wig^y-/weg^y-* 'to carry, to convey'	PAA **wəg^y-/wag^y-* 'to carry, to weigh'; PIE **ueg^h-/uog^h-* 'to carry, to convey, to weigh'; PFU **weɣe-/wiɣe-* 'to bring, to carry, to convey'.

a Abbreviations: PN = Proto-Nostratic; PA = Proto-Altaic; PAA = Proto-Afro-Asiatic; PD = Proto-Dravidian; PFU = Proto-Finno-Ugric; PIE = Proto-Indo-European; S = Sumerian. From Bomhard (1990: 346–353).

cussion of the method, see now Ringe (1995), who argues that the predictions of multilateral comparison are successful only at the level of chance. For a defense of the Greenbergian approach, see Ruhlen (1994a, 1994b). For one of the few analyses of the issues which works from primary data on the remote relations of some languages (Nostratic, Sino-Caucasian, and Dene-Caucasian), see Shevoroshkin and Manaster Ramer (1991). For a review of Greenberg's classification of the languages of the Americas, see the reviews by Chafe, Darnell, Goddard, Golla, Hymes, Rogers, and Sapir in *Current Anthropology* 28 (1987): 647–667, as well as Campbell (1988), and the extensive discussion in McMahon and McMahon (1995).

There are reconstructions in other long-distance work, however. Of particular note are efforts to reconstruct (one version of) Proto-Nostratic as a parent language of the Afroasiatic, Kartvelian, Indo-European, Uralic, Dravidian, and Altaic language families, and possibly Sumerian as well. Though no less controversial than Greenberg's classification of the Americas,[7] the reconstruction of Proto-Nostratic has proceeded along more traditional methodological lines, including the use of sound correspondences. The Nostratic issue has attracted much attention, not only in the scholarly community (see Bomhard and Kerns 1994, Ringe 1995, Bomhard

7 Greenberg himself (to appear) has proposed an even more inclusive membership for Nostratic. In Greenberg's view, the Nostratic macrofamily comprises the following language families: Afroasiatic, Kartvelian, Sumerian, Elamo-Dravidian, Indo-European, Uralic-Yukaghir, Altaic, Chukchi-Kamchatkan, Gilyak, and Eskimo-Aleut. The latter six (from Indo-European to Eskimo-Aleut) are members of the Eurasiatic subgroup of Nostratic.

1996, Joseph and Salmons to appear), but also in the general press.[8] A few examples of Nostratic reconstructions appear in table 1.6.

Most scholars of traditional IE linguistics reject the method of multilateral comparison, as well as the concept of Nostratic. No particular side on the issue is taken in this book, though it is clear that for the reconstruction of PIE proper a method like that of multilateral comparison is superfluous.

Two other issues are frequently raised in connection with the goals and integrity of the comparative method and the reconstructions which result from its application. The first of these concerns the linguistic reality to be assigned to the reconstructed proto-units, while the second concerns the uniformity of protolanguages. On the matter of reality, one school of thought (Pulgram 1959) holds that a reconstruction is little more than an abstract fiction, algebraically constructed, which does not reflect any linguistic reality. On this view, a reconstruction is a formula which logically, not perceptually, embodies a collection of proto-sounds (phonemes) which are assembled into meaning units (morphemes), and then into grammatical constructions (syntax). There is no claim that the reconstructions which result actually represent elements of a real language. Opposing this position (Hall 1960, 1974) are those who claim that a reconstructed form bears a strict phonetic relation to actually occurring historical forms, so much of a relation, in fact, that vanished speakers of the language in question might be able to understand it if they were somehow brought back to hear the reconstructed forms uttered.

The resolution of the reality question depends on two principal factors, namely time-depth and the nature of the evidence. It goes without saying that the potential reality of a reconstruction decreases as the time-depth increases. Thus reconstructed classical PIE has a greater chance of being phonetically real than does early PIE, which in turn has more potential reality than Proto-Nostratic. Indeed, Schleicher even went so far as to reconstruct a Proto-Indo-European fairy tale in 1868. As for the evidence, Hall's realist position is surely more reasonable for the reconstruction of Proto-Romance, a system which is not only chronologically closer to the oldest Romance language documents than even the older IE languages are to PIE, but also one which can be "checked" against the evidence of attested Latin.[9]

As is usually the case in such debates, the best approach lies somewhere between the two extremes (see Lass 1993 for discussion). Some aspects of PIE phonology, for example laryngeal consonants, seem beyond phonetic perceptibility, while others, for example the voiceless stops, seem phonetically secure. A similar state of affairs holds in the reconstruction of Proto-Romance. The consonants, for example,

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8 For example, popular articles have appeared in such sources in the US as *The Atlantic Monthly* and *Scientific American*, both in April 1991, in *Scientific American* in January 1994, and in the *New York Times* on June 27, 1995; in France, in *Le Monde* on January 23, 1997, and in *Le Nouvel Observateur*, also in January, 1997.

9 As Hall states clearly (see his chart 1974: 14–15), the data provided by the written classical language can be used as a template to verify reconstructions of Proto-Romance.

are relatively straightforward, while the vocalic systems are quite unstable in reconstructions and cannot be posited with any phonetic guarantees.[10] In the final analysis, phonetic information has surely figured in PIE reconstructions, though verifiability remains elusive.

The second issue concerns the status of protolanguages as uniform, dialect-free entities without recoverable synchronic variation. This is a particularly troublesome question which defies simple resolution. It is easily demonstrated that natural languages always exhibit dialect differences. These differences may result from an intersection of social and geographical factors, with consequent variation in the speech community. Generally speaking, the more social stratification and geographical spread, the more variation. In the reconstruction of a protolanguage it is difficult to capture synchronic variation. This is because the data from language to language are not consistent, are often from widely divergent geographical areas with different cultural and external influences, and often exhibit considerable chronological disparities. These factors alone make the postulation of a single dialect-free system somewhat hazardous. At the same time, the comparative method demands a certain homogenization and idealization of the data in order to achieve proper matchings and defensible reconstructions. The result is typically the reconstruction of a dialect-free proto-system which may bear up to methodological scrutiny but probably does not reflect the linguistic realities of any given period. It appears to be an unavoidable problem. For discussion see Anttila (1989: 282–284).

For the present it can be said that among scholars of historical-comparative linguistics, there is a common opinion: the comparative method works (see the papers in Baldi 1990, Fox 1995). While it is true that the method has flaws, it nonetheless allows for a general replicability which validates its internal integrity. Furthermore, the comparative method has a wide applicability, not only to IE languages and languages of similar typological structure, but to languages and language families which differ markedly from these. This includes the languages of Australia, in contrast to what Boretzky has claimed (Dixon 1990). Finally, on the matter of the limits of the method, there is less agreement, but still consensus. The comparative method has limits, both practical and methodological. The people who use this method are restricted by human constraints, and the limitations on availability and accessibility of all the data required to make remote speculations are severe.

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10 Comrie (1993: 96 n. 2) asserts that reconstructions in Pulgram's sense, namely convenient formulaic summaries of the relations among the attested genetically related languages, are without theoretical interest. Inasmuch as reconstructions are based on phonetic and phonological observations about the behavior of sounds in known languages, he is surely right. However, the postulation of abstract segments like laryngeals will not withstand close phonetic scrutiny; their analysis depends purely on logical distributions.

1.4. The method of internal reconstruction

After the comparative method, the method of internal reconstruction provides the most powerful procedure of historical analysis, supplementing comparative analysis to achieve reliable reconstructions. While the comparative method relies on patterned relations across different languages, the method of internal reconstruction relies on the patterned relations of linguistic units within a single language which point the way to earlier structures of the language in question. The principle behind the method of internal reconstruction is that individual languages contain within themselves evidence of their own history. This evidence takes several shapes, namely language-internal alternations and exceptions.

The primary source of internal evidence is found in alternations between linguistic units in recognizable distributions. In phonology, complementary correspondences of a given phoneme within a language can be taken to represent reflexes of a single proto-phoneme (Fox 1995: 146–147). The alternations often arise from historical sound changes which resulted in phonological splits, creating different surface realizations of the same proto-unit. Consider the following Latin data.

	'flock'	'king'
nom.	grex	rēx
gen.	gregis	rēgis

At issue is the status of the final consonant of the base form. It can be seen that the nominative of these two words shows *x*, i.e. [k] followed by the ending [s], while the genitives contain *g*, i.e. [g] followed by the ending [is]. This suggests a phonological rule of Latin by which voiceless consonants are voiced intervocalically, i.e. [k] → [g], making the unitary form of the bases /grek-/ and /rēk-/. Now consider the following two partial paradigms.

	'leader'	'wild'
nom.	dux	ferōx
gen.	ducis	ferōcis

If the proposed voicing rule were in effect, the expected genitive forms of 'leader' and 'wild' would be **dugis* and **ferōgis*, respectively. In fact the opposite distribution is in effect, namely that voiced sounds like *g* are devoiced before voiceless consonants like *s*, viz. [g] → [k], indicating the base forms /greg-/, /rēg-/, /duk-/, and /ferōk-/. The original voiceless [k] of 'leader' and 'wild' is left unaffected by this rule. The existence of the verbal forms *(con)gregō* 'I gather', *regō* 'I rule', and especially *dūcō* 'I lead' supports at least the first three internally reconstructed root forms.

A second source of evidence which can be utilized in internal reconstruction is found in exceptional structures, especially morphological structures. For example, the irregular, non-productive alternation of the vowels in such words as Eng.

steal/stealth, *creep/crept*, and *sleep/slept* results from a process which was productive at one time in English but which has ceased to operate. In Latin, perfect forms such as reduplicated *cecidī* 'I fell' (pres. *cadō*) and *tetigī* 'I touched' (pres. *tangō*) represent archaic morphological processes which are marginal in the synchronic system. Such forms represent historical residue which for one reason or another failed to be remodeled analogically to the productive patterns, making them morphological anomalies and affording them historical primacy (Fox 1995: 150).

The results of internal and comparative reconstruction are frequently the same, reflecting the unity of reconstruction methodology. What is different are the data employed by each. The two methods are typically combined in the process of reconstruction, with internal reconstruction being used before or after the comparative method, and in a variety of combinations. Together these two methods constitute the most powerful tools available for the reconstruction of ancestral systems.

1.5. Genetic classifications and family trees

In the family tree representation of the IE language family (figure 1.5), languages are grouped under branching nodes according to the degree of similarity which they exhibit. The protolanguages from which they stem are reconstructed, hypothetical entities based on the compilation, analysis, and evaluation of shared features and differences among attested daughter languages. A Common or Proto-Germanic is quite easily defended, since Germanic shows a clearly defined set of features which distinguish it from the other IE subgroups. Similar sets of commonalities are found to one degree or another in Italic, Slavic, Baltic, and Indo-Iranian, all groups with complex internal subdivisions, and all of which make the family tree an attractive mode of representation for a group of genetically related languages. However, the family-tree illustration can sometimes lead to misleading representations of language relationships and change. Branching schemes do not properly show geographical contiguity, dialect mixing, bilingualism, or interaction with speakers of non-related languages. They represent language development in discrete divisions with abrupt splits, not allowing for dual or multiple parentage (creoles). Furthermore, they typically do not represent time-depth, such as the more-than-3,000-year difference in the attestation of documents from Hittite and Lithuanian. In short, what the family tree model does is to display metaphorically the results of linguistic change, not change itself, as though languages are born of one parent and move through history in cultural and linguistic isolation. Thus, it cannot be held to be a universally adequate model of linguistic change.[11] Despite these deficiencies, how-

11 The standard alternative to the family tree model is the "wave theory", which allows for a spatially more realistic representation of genetic relationships on the basis of shared features among different language groups. See Anttila (1989: 300–309) for theoretical discussion, illustration, and bibliography.

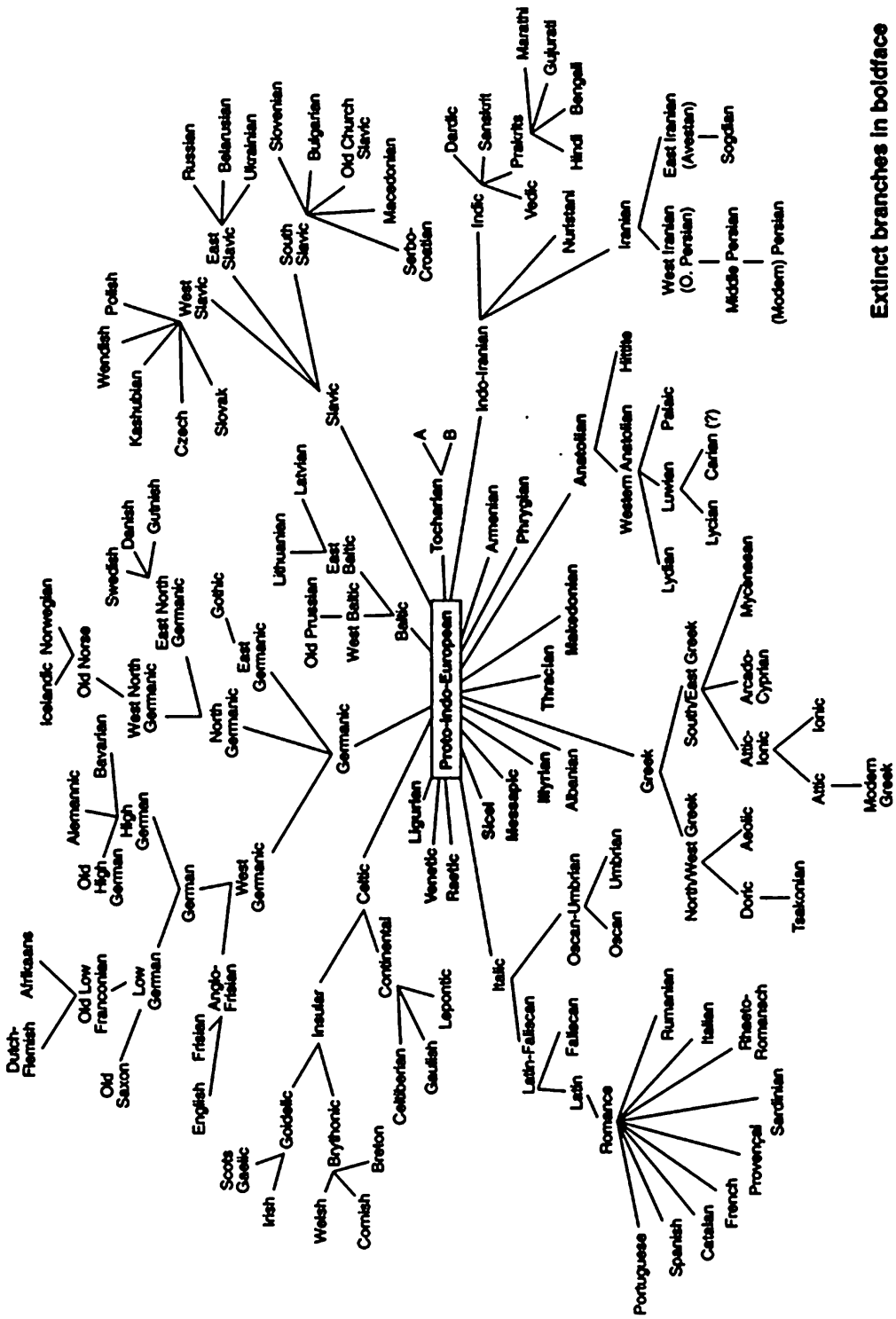


Figure 1.5. A family tree of the Indo-European languages

ever, the family tree model still has great value in that it provides a useful way of representing linguistic relationships, though not language change itself. It remains the most graphically consistent means of depicting bundles of commonalities among related languages. The family tree is not a model of linguistic change; it is a model of its results.

1.6. The Indo-European language family

The term Indo-European (Fr. "indogermanique", Germ. "indogermanisch") refers to a family of languages which by about 1000 B.C.E. were spoken over a large part of Europe and parts of southwestern and southern Asia. "Indogermanique" was first used by Conrad Malte-Brun, a Danish geographer living in Paris, in 1810. The English counterpart "Indo-European" was apparently coined by the Englishman Thomas Young in 1813. Though the concept of Indo-European is essentially linguistic, the term is originally a geographical one. It refers to the easternmost (India) and westernmost (Iceland) known expansion of the family (excluding post-colonial developments) at the time it was proven to be a historical entity by scholars of the eighteenth and nineteenth centuries. Post-colonial growth which has taken IE languages to the Americas, Africa, Hawaii, Australia, Hong Kong, and elsewhere around the world might now suggest another name for the family, but the term "Indo-European" is well rooted in the scholarly tradition.

The IE languages are classified into eleven major groups (ten if Baltic and Slavic are considered together as Balto-Slavic). Some of these groups have many members, while some others have only one. Of the eleven major groups, nine have modern spoken representatives while two, Anatolian and Tocharian, have no modern descendants. Additionally, there is a significant number of extinct "minor" branches of the IE family, most of which are fragmentarily known. A summary review follows, in which a sample of the languages of each group is mentioned. For further information, see Lockwood (1972), Baldi (1983), and especially the papers in Giacalone Ramat and Ramat (1998). For written specimens of a number of IE languages, see Beekes (1995: 318–347).

1.6.1. Indo-Iranian

After the Aryan migrations into India in the second millennium B.C.E., the earlier Indo-Iranian linguistic community was split into two main subdivisions, Indic (Indo-Aryan) and Iranian. The similarities between the two subdivisions are so consistent that there is no question about the status of Indo-Iranian as an intermediate unity between PIE and the Indic and Iranian subgroups. According to Payne (1987: 519), Indic and Iranian share fifty-seven isoglosses which link the two, a convinc-

ingly large number of shared characteristics to justify the Indo-Iranian unity. Indo-Iranian dominates the IE family numerically: of the 144 IE languages listed in Ruhlen (1987: 325), 93 are Indo-Iranian.

1.6.1.1. Indic (or Indo-Aryan)

The Indic languages are classified into three historical periods. They are Old Indic (1500–600 B.C.E.), Middle Indic (600 B.C.E. – 1000 C.E.), and New or Modern Indic (1000 C.E.–); see Masica (1991). Within the Old Indic group the most ancient language is Vedic. The oldest Vedic material is the *Ṛgveda* (*ṛg-* 'song'), a set of ten books of religious hymns which is usually dated to 1200–1000 B.C.E., though not in written form until much later. Subsequent Vedic texts include the *Atharvaveda* and the *Brāhmanas*. The later language is called (classical) Sanskrit (*saṁskṛta* 'adorned, elaborated, refined'), a literary language codified in the grammar of Pāṇini known as the *Aṣṭādhyāyī* written ca. 500 B.C.E. Its two most prominent literary texts are the epics called the *Mahābhārata* and the *Rāmāyana*. Sanskrit is distinguished from the vernaculars commonly known as Prakrits (*prākṛta* 'unrefined'), which evolved into the later Indic dialects.

The oldest of the Middle Indic Prakrits is Pāli, with Buddhist religious texts datable to the sixth to fifth century, and the inscriptions of Aśoka (ca. 250 B.C.E.). There are also some Jainist religious writings in Jaina-Prakrit, and lyric and epic poetry in Mahārāṣṭrī from the Maharashtra region of Western India, all from roughly the same period.

Modern Indic is one of the most diffuse subgroups of the IE family, with scores of languages spread over the Indian subcontinent. Among the best known are Hindi, Urdu, Marathi, Panjabi, Gujarati, and Bengali. Also contained within the Modern Indic subgroup are the so-called "Dardic" languages (e.g. Shina, Khowar) spoken in the Upper Indus region in northern Pakistan and northwestern India. The exact relation of the Dardic languages to the other Modern Indic languages is unclear. Beekes (1995: 41–42) reports the existence of an IE language known as Bangani from the north of India in the foothills of the Himalayas which was first thought to be Indo-European, but not Indo-Iranian. Subsequent investigation has however established that this language is not only Indo-Iranian, but is specifically from the Indic subgroup. For general information on Indic languages, see Cardona (1987) and Lazzeroni (1998).

1.6.1.2. Iranian

The Iranians spread out perhaps as early as 1500 B.C.E. over a wide area, reaching not only the Iranian plateau, but also parts of China (Xinjiang) and Southern Russia. There are two principal representatives of Ancient Iranian, namely Eastern Iranian

and Western Iranian. Eastern Iranian is represented by Avestan, the language of the Avesta, a collection of sacred Zoroastrian texts. Avestan is comparable to Vedic in structure and has two recognizable dialects. The first of these is Old Avestan (Gathic), which records the writings of the prophet Zarathuštra. The Old Avestan materials are at least as old as 600 B.C.E. and are possibly much older (the first manuscripts, however, are from the thirteenth and fourteenth centuries C.E.). Somewhat later is the dialect known as Late or Younger Avestan.

Western Iranian is represented primarily by Old Persian, which is dated as far back as 500 B.C.E., mostly in cuneiform inscriptions of the Achaemenid emperors, in particular Darius the Great (521–486 B.C.E.) and Xerxes (486–465 B.C.E.).

While Avestan and Old Persian are the main linguistic sources of Ancient Iranian, there are some proper names and toponyms which provide information on Median, the language of the Median Empire in the province of Media in northwest Iran (eighth to sixth centuries B.C.E.), and on the languages of the Scythian and Sarmatian tribes of the south Russian steppes. Modern Ossetic is the only extant representative of these languages.

Western Middle Iranian (ca. 200 B.C.E. – 900 C.E.) is represented by Middle Persian and Parthian. Middle Persian (also known as Pahlavi) is the direct descendant of Old Persian. The earliest Middle Persian monuments, inscriptions on coins, date from the second century B.C.E., but the bulk of the corpus is from the Sassanid Empire (third–seventh centuries C.E.; see Back 1978). The Parthian corpus dates from the Arsacid dynasty (third century C.E.). The Eastern Middle Iranian languages are Sogdian (eighth century C.E. texts from Central Asia), Khotanese (texts from the fifth to tenth centuries C.E. from Chinese Turkestan), Khorasmian, and Bactrian, an Eastern Iranian language written in a Greek script.

Some modern descendants of the Iranian subgroup are Modern Persian, with a great deal of Arabic vocabulary; Pashto; Baluchi; Ossetic; Yaghnobi (the modern descendant of Sogdian); Judeo-Persian, with beginnings in the Middle Persian period; and Kurdish. For general information on Iranian languages, see Payne (1987), Schmitt (1989), and N. Sims-Williams (1998).

1.6.1.3. Nuristani

Also included in the Indo-Iranian subgroup is Nūristānī (formerly called Kafir), a group of dialects from eastern Afghanistan, represented by Ashkun and Kati. Nūristānī may be a subgroup of Iranian rather than a third branch of Indo-Iranian.

1.6.2. Greek (Hellenic)

One of the best known and documented of the ancient IE languages is Greek or Hellenic, which has been continuously spoken in the southern Balkan peninsula since

approximately 2000 B.C.E. The oldest literary monuments in Greek are the *Iliad* and *Odyssey*, traditionally ascribed to Homer and thought by some to have been written down as early as 800 B.C.E. Even older than these are the tablets found at Knossos on the island of Crete and at Mycenae, Pylos, Thebes, Tiryns, and Khania. The inscriptions on these tablets have been shown to be written in an archaic form of Greek known as Mycenaean, the oldest of which have been dated to the fourteenth and thirteenth centuries B.C.E., making it the second oldest representative of the IE languages, after Hittite.

Although Greek does not evidence the same degree of internal dialect divisions as, say, the Italic or Germanic languages, there are already considerable differences from the earliest documentation. Greek has two major dialect divisions, South/East Greek and North/West Greek. In the South/East dialect are Attic-Ionic, Arcado-Cyprian, and Mycenaean. In the North/West dialect are Aeolic and Doric. A major phonological isogloss separating these two divisions is their treatment of PIE *-*ti*, which in North/West Greek is preserved as -τι (cf. δίδωτι 'X gives') but in South/East Greek is changed to -σι (cf. δίδωσι), a distinction also evident in the 3rd pl. verbal endings -οντι/-ουσι, as seen in Dor. δίδοντι 'they give', Ion. διδοῦσι.

1.6.2.1. South/East Greek

Within South/East Greek the principal dialect is Attic, the literary language of fifth century B.C.E. Athens which represents the classical standard of Greek literature. This is the dialect of the great tragedians such as Aeschylus and Sophocles, comic writers such as Aristophanes, historians such as Thucydides, and philosophers such as Plato and Aristotle. The oldest Attic is an eighth century B.C.E. inscription, and the continuous literature in this dialect begins in the sixth century. Ionic is the dialect of the oldest continuous compositions in Greek, Homer's *Iliad* and *Odyssey*. There are three major dialect divisions within Ionic: West Ionic, represented by early inscriptions from Oropos and Euboea, some reaching into the eighth century; Central Ionic, found in the Cyclades and attested in seventh century inscriptions; and East Ionic, which is found in early inscriptions from Asia Minor.

In Arcado-Cyprian there are three principal representatives: Arcadian, from Arcadia in the Peloponnesus, attested in texts as old as the sixth century; Cypriote, from Cyprus, with one inscription from the eleventh century B.C.E. and others from the eighth century; and Pamphylian, which is generally classified as Arcado-Cyprian despite late attestation and a scant corpus from the fourth to first century B.C.E., which makes secure classification difficult. See Brixhe (1976).

Mycenaean is the name of the dialect ascribed to texts written by scribes on clay tablets in Mycenaean palaces at Knossos, Thebes, Pylos, Mycenae, Tiryns, and Khania which were ravaged by fire, baking the tablets and preserving them for posterity. They are written in a syllabic script called Linear B. Linear B appears to be descended from Linear A, one of two syllabic scripts (the other being Cretan Hiero-

glyphic) invented by the Minoans in the third millennium B.C.E. Linear B consists of 87 syllabic signs, about 40 of which are used as logograms, about 150 logograms (only 50 of which are used frequently), 11 symbols for weights and measures, and five numeral symbols. The oldest of the Linear B materials are those from Knossos, dated to 1375 B.C.E.

Most of the Linear B tablets are from Knossos and Pylos. They are primarily bookkeeping and other bureaucratic records dealing with the administration of the Mycenaean palaces. The Linear B script was deciphered in 1952 by the architect and amateur philologist Michael Ventris and the philologist John Chadwick. See Chadwick (1990).

1.6.2.2. North/West Greek

The Aeolic subgroup of North/West Greek (also known as North Achaean) has two major divisions. The first of these is Boeotian, which is attested in a large number of inscriptions and texts from as early as the seventh century B.C.E. from around the region of Boeotia. The second major division of Aeolic is North Aeolic, which is also known as Thessalo-Lesbian. North Aeolic comprises Thessalian, with numerous late texts from Thessaly stemming from the fourth century B.C.E., and Lesbian, from the island of Lesbos, in which the oldest usable inscriptions date from the sixth century B.C.E., though most others are later.

The Doric subgroup of North/West Greek evidences a number of geographically separated dialects. Miller (ms.) postulates a Proto-Doric with four subdivisions: Western Doric, Northern Doric, Elean, and Southeastern Doric.

Western Doric is represented mainly by Laconian, from parts of the Peloponnesus and Sicily, with texts from the late seventh century B.C.E.; and by Messenian, from Messenia, with inscriptions no earlier than the fourth century B.C.E.

Northern Doric splits into a number of historically attested dialects, including Aetolian, West Locrian, Phocian, East Locrian, Corinthian, Megarian, and East Argolic. The oldest material from this group comes in the form of inscriptions from the sixth century B.C.E.

Elean, from the northwest corner of the Peloponnesus, shows fragmentary textual material from the seventh and sixth centuries B.C.E., mostly from Olympia.

Southeastern Doric is divided into West Argolic, Cretan, and the East Aegean dialects of Cyrenaean, Theran, Coan, and Rhodian. West Argolic shows seventh century B.C.E. inscriptions from Argos, Mycenae, and Heraeum. Cretan, from the island of Crete, evidences a trove of materials from as early as the seventh century B.C.E., mostly from Knossos, Dreros, and Gortyn. Of the East Aegean dialects, Theran provides name lists and some graffiti from the eighth to seventh centuries B.C.E., and Cyrenian has inscriptions which can be dated to the seventh century. Rhodian inscriptions are generally late (fourth century), though there is one graffito which may be as old as the eighth century. In Coan, from Cos, most usable inscriptional

material is not earlier than the fifth century.

The extensive and continuous early documentation of Greek, as well as its complex structure, not only in texts but in thousands of inscriptions and loanwords into other languages, make it an invaluable resource in the understanding of PIE and the IE family of languages.

Standard Modern Greek and the other modern dialects arose from the Hellenistic Koine (ca. 300 B.C.E. to 300 C.E.), which is considered to be an Atticized Ionic at its core, with an admixture from other dialects. Thus Standard Modern Greek fits under the Attic-Ionic branch of South/East Greek. One exception to the Attic-Ionic lineage among the varieties of Modern Greek is the Tsakonian dialect, spoken in the eastern part of the Peloponnesus, which derives from the ancient Doric dialect. For details on Greek and its dialects, see Buck (1955), Palmer (1980), Joseph (1987), Hoenigswald (1998), and Miller (ms.).

1.6.3. Italic

The Italic group is constituted of IE languages of ancient Italy which are genetically linked by a large number of shared characteristics inherited from Proto-Indo-European. Around the turn of the first millennium B.C.E., ancient Italy was occupied by many Indo-European- and non-Indo-European-speaking peoples. Among the non-IE speakers, the most important are the Etruscans, who occupied central and later southern Italy; another group of non-IE speakers are the Iapygians in the southeast. Certain IE speakers include Veneti in the northeast, Lepontians and Ligurians in the northwest, Latinians, Umbrians, and South Picenes in the center, and Greeks, Messapians, Oscans, and Sicels in the south. There is some uncertainty over the linguistic status of the Raetians in the north and the North Picenes in the center, though it is most likely that they were IE speakers. Of the IE languages of ancient Italy, the principal ones are Venetic, Latin, Umbrian, and Oscan.

There are two main subdivisions within the Italic group. The first, Latin-Faliscan, is represented chiefly by Latin, by far the most important member. Apart from some early inscriptions (the oldest, short inscriptions incised on wine containers, have been dated to 620–600 B.C.E.; see Wallace 1989: 124), the first continuous Latin texts of any length are from the third century B.C.E. Faliscan, which is the language most closely related to Latin in the Italic group, is attested in about one hundred fifty inscriptional fragments and is imperfectly known. The oldest inscriptions in Faliscan are from the early seventh and sixth centuries B.C.E.

The second Italic subdivision is the Oscan–Umbrian (also known as Sabellic or Sabellian), whose chief members are Oscan and Umbrian. Oscan, the linguistically more conservative of the two, is attested in some coin legends from as early as the fifth century B.C.E., though most of the literature and other material is much later. The total Oscan corpus is about 200 inscriptions, the longest being the Tabula Ban-

tina (ca. 80 B.C.E.) from Lucania. Umbrian is contained largely in a single source, the Iguvine Tables from ancient Iguvium in Umbria, which have been dated to the period of approximately 300 or 200–90 B.C.E. and altogether contain about 5,000 words. There are also a few short inscriptions from north central Italy, near Bologna. Minor languages such as South Picene, Paelignian, Marrucinian, Vestinian, Marsian, Aequian, Sabine, and Volscian all share certain affinities with Oscan or Umbrian.

The Italic group of IE languages survives in the modern Romance languages (French, Italian, Portuguese, Spanish, Catalan, Rumanian, Sardinian, Rhaeto-Romansch, and the extinct Dalmatian). These languages descend from many geographical and social varieties of spoken Latin and cannot be traced directly back to the classical language. For details of the Italic group, see Coleman (1987) and Silvestri (1998). For Latin in particular, see Vineis (1998).

1.6.4. Anatolian

Now extinct, the Anatolian group comprises Hittite, Luwian, Lycian, Palaic, Lydian, and Carian, the last four surviving only in fragments. The Anatolian languages were unknown to modern scholars until archaeological excavations during the first part of this century in Boğazköy, Turkey, uncovered the royal archives of Hattušaš, the capital city of the Hittites. These excavations yielded about 10,000 texts written on clay tablets (continued excavation has brought the number to about 25,000, though not all have been published). The texts, which date from approximately the seventeenth to the thirteenth centuries B.C.E., were composed in a cuneiform script known from the study of Akkadian. They were written primarily in Hittite, but also contained material in Akkadian, Palaic, Luwian, Sumerian, Hattic, Hurrian, and Mitanni, a language related to Hurrian with some Indic loans. Decipherment proceeded quickly, and as the material from Boğazköy became plentiful, an Assyriologist called Bedřich Hrozný asserted in 1917 that the Hittite in the texts represented an IE language, an assertion that could not be denied. The Hittite empire fell around 1200 B.C.E., though the Anatolian family survived in the form of Luwian and Lycian into the last centuries B.C.E. until they were overrun by Greek colonists (Mallory 1989: 25).

From a philological analysis, three periods can be identified in the Hittite materials: Archaic Hittite (ca. 1700–1500 B.C.E.), Middle Hittite (ca. 1500–1350 B.C.E.), and Neo- or Late Hittite (ca. 1350–1200 B.C.E.). It was demonstrated soon after decipherment that Hittite contained a large number of apparently archaic features not found in other IE languages. Among the archaisms found in Hittite which are now considered by many to be features of the protolanguage are laryngeal consonants (also in Palaic); the two-gender system of animate and inanimate as opposed to the three-gender system of masculine/feminine/neuter common in the "classical"

IE languages like Latin, Greek, and Sanskrit; simple verb inflection based on past/non-past temporal distinctions; an opposition between active and middle, without a separate syntactic passive; the attestation of a large number of archaic neuter nouns with stems in *r/n*; and many others (see Puhvel 1991). The analysis of these archaisms has prompted revised reconstructions of the IE protolanguage itself. The closely related Palaic is attested by several hundred words in Hittite texts from the seventeenth to sixteenth centuries B.C.E.

Luwian is attested in two different scripts, one cuneiform and one hieroglyphic. Cuneiform Luwian survives in the form of about 900 words which are preserved in Hittite texts, some from as early as ca. 1400 B.C.E., but most from five or six centuries later. Hieroglyphic Luwian (formerly called Hieroglyphic Hittite) is attested in about 500–600 inscriptions, coins, and seals, the oldest being from as early as 1800–1700 B.C.E. Of all the Anatolian languages, Luwian is closest to Hittite. Lycian is first attested in the late sixth century; most of the 150 Lycian inscriptions are later, probably late fifth and fourth centuries. Lycian is probably a variety of late Luwian.

Lydian is known mainly from about 100 sepulchral inscriptions and votive texts from Sardis. The oldest stem mainly from the seventh and sixth centuries B.C.E., though several, including the more substantial ones, are from the second half of the fourth century.

The last Anatolian language to be mentioned here, Carian, is attested in several hundred inscriptions and graffiti from Caria and Egypt, with most dating from the seventh and sixth centuries B.C.E.

For general information on Anatolian see Neu—Meid (1979) and Luraghi (1998).

1.6.5. Tocharian

Around the turn of the twentieth century, a large amount of material was discovered in the Chinese Turkestan (Tarim Basin) region of Central Asia by Prussian, French, and Anglo-Indian archaeological expeditions. Four previously unknown languages were found in these excavations: two Iranian languages, Khotanese (Saka) and the Saka of Tumshuq, and two other languages which came to be known as Tocharian (A and B). Also found were extensive documents in Sogdian, Middle Parthian, and Middle Persian. The documents of the two Tocharian languages are chiefly of a religious nature (Buddhist manuscripts) but also include commercial documents, caravan passes, and medical and magical texts. The two varieties of Tocharian evident in the texts are known as Tocharian A (also called East Tocharian or Turfan), from the Qarashahr-Turfan region in the center of Chinese Turkestan; and Tocharian B (also called West Tocharian or Kuchean), from the same area and also farther west, around Kucha. They were securely identified as Indo-European by 1907. The Tocharian texts are comparatively late, stemming from the period of 500 to 700 C.E.,

so this language has not played the same role as other twentieth-century discoveries like Hittite and Mycenaean Greek in the shaping of reconstructed PIE. It is generally agreed that, despite its eastern location, Tocharian has more in common with older IE languages from Europe, especially Italic, Celtic, Germanic, and Balto-Slavic, than with Asian members like Indo-Iranian. For discussion of the place of Tocharian within IE, see D. Adams (1984), Tischler (1990), and Ringe (1990). For Tocharian generally, see W. Thomas (1985), D. Adams (1988), and Winter (1998).

1.6.6. Celtic

It is clear from inscriptional information and place and river names that the Celts and their languages were once spread over a fairly wide section of Europe in the pre-Christian era, with the original Celtic homeland being situated in what is now southern Germany and Austria. The archaeological and historical records suggest that the Celts, whom the Romans called *Gallī* and the Greeks Κελτοί, were a warlike people who eventually settled in what is now Lombardy in northern Italy. From there they attacked the Etruscans and eventually sacked Rome in 390 B.C.E. During the course of the fourth and third centuries B.C.E., the Celts established themselves from the British Isles to Asia Minor (Fife 1993: 4). But they gradually came under Roman control. Judging from the inscriptional evidence, which shows considerable influence from Latin, the assimilation of the Gauls into the Latin-speaking population began with the Roman conquest of Gaul before the end of the second century B.C.E. and was accomplished at different times in different parts of the Empire: in Central Spain and Central Gaul not before 50 C.E., and in the Danubian countries considerably later.

The Celtic languages are typically divided into two main geographical groups, namely Insular Celtic and Continental Celtic. A third group, Pictish, is sparsely attested (mostly in the form of place and proper names), and is difficult to classify. If Celtic, it is probably affiliated with the Brythonic group (see below).

1.6.6.1. Insular Celtic

Insular Celtic has two subdivisions. The first is Gaelic (Goidelic), which includes Irish, with the earliest documents some Ogham Irish sepulchral inscriptions from about 300 C.E. and a rich literature from the period of about 725–900; Scots Gaelic, which was introduced by Irish settlers in the sixth century C.E.; and the extinct Manx, which was spoken on the Isle of Man. The second is Brittanic (Brythonic), which includes Welsh, whose oldest documents in Old Welsh date to the eighth century C.E.; Breton, spoken in northwest France, first attested in the fifth to seventh centuries C.E. by a large number of glosses and charters; and the extinct Cornish, whose first documents are from the tenth century C.E. The oldest materials of Insu-

lar Celtic are the Ogham sepulchral inscriptions and Old Irish marginal notes to Latin manuscripts which date from the late seventh to early eighth century C.E.

1.6.6.2. Continental Celtic

Continental Celtic comprises the languages of the Celtic tribes of the two Gauls from ancient times (Cisalpine Gaul and Transalpine Gaul), Central Europe, the Iberian peninsula, Britain, and Galatia in Asia Minor. None of the Continental Celtic languages have survived intact, though the corpus has increased significantly in recent years. Beside personal, place, and tribal names, and a handful of short inscriptions and glosses, a number of substantial Gaulish texts have been recently discovered, as well as several Lepontic texts and a considerable Celtic text from Botorrita which is currently being restored.

The languages of the Continental Celtic group are Celtiberian (also known as Hispano-Celtic), the primary evidence of which is contained in a 200-word text found in Botorrita; Lepontic, with a significant corpus of inscriptions and graffiti and some very old personal names; Gaulish, of which the oldest text is dated to about 225 B.C.E., with a number of shorter inscriptions and texts which run as late as the third or fourth centuries C.E.; and Galatian, with a slight corpus of local, ethnic, and personal names. The oldest records of Continental Celtic are from the sixth century B.C.E. (Lepontic), with many others (in Celtiberian, Lepontic, and Gaulish) ranging from the fifth and fourth centuries B.C.E. However, the Celtiberian materials, which are attested ca. 150 B.C.E. to 200 C.E., are generally the more archaic linguistically.

Many specialists believe that the Celtic and Italic languages have a remote relationship intermediate between the disintegration of PIE and the establishment of the separate Celtic and Italic groups. This intermediate group is known as Italo-Celtic. For the Celtic languages generally, see Jackson (1953), and the papers in Ball (1993), especially Fife (1993), Eska—Evans (1993); also Meid—Anreiter (1996) and P. Sims-Williams (1998). For Italo-Celtic, see Schmidt (1992).

1.6.7. Germanic

The Germanic group of IE constitutes one of the most geographically dispersed subdivisions of the family. With the oldest continuous documents (in Gothic) dating back to the mid to late fourth century C.E., Germanic has a long and well-documented history. The oldest extant material written in a Germanic language is several hundred Runic inscriptions from Scandinavia from the first to sixth centuries C.E., though most contain little usable material. Germanic has three principal subdivisions, East Germanic (Gothic), West Germanic, and North Germanic.

1.6.7.1. East Germanic

The sole member of East Germanic is Gothic, which is represented chiefly in Wulfila's translation of parts of the Bible from around the second half of the fourth century, though the manuscripts (chiefly the *Codex Argenteus*) are from the sixth century. Besides Wulfila's translation, Gothic is attested in a commentary on the Gospel of John called the *Skeireins*, a papyrus from the sixth century C.E., and a few other fragmentary sources. Gothic provides the oldest serviceable material from the Germanic family.

1.6.7.2. West Germanic

The second subdivision of Germanic is West Germanic, the least unified and most widely dispersed subgroup in the family. There is a fundamental split in West Germanic between the northern dialects of the lowland areas (known as Ingvaeonic or North Sea Germanic) and those of the southern or highland areas. (For discussion of the differences between highland and lowland West Germanic, see Vennemann 1994a). There are two principal lowland representatives of West Germanic. One group, the Low German group, comprises Old Saxon (attested in texts as early as 850 C.E.) and Old Low Franconian, the ancestor of modern Dutch, Flemish, and Afrikaans, which is attested in a few ninth-century documents. The second group, the Anglo-Frisian group, includes Old Low Frisian (attested from about the beginning of the ninth century C.E.), from which modern Frisian derives, and Anglo-Saxon, attested from about the same period, the language from which Old English evolved. Old English is identifiable in literature from the beginning of the eighth century C.E. and in a number of earlier Runic inscriptions going back to probably the fifth century. Literary remains such as *Beowulf* are generally dated to somewhat before 750 (Lehmann 1992: 81). The Old English period is traditionally considered to run from 700 to 1100 C.E. After the Norman Conquest (1066), when English came under the profound influence of French, the Middle English period begins, running roughly from 1100 to 1500 C.E. Modern English, with several chronological subdivisions, is said to begin around 1500 C.E.

The highland representative of West Germanic is High German, widely represented in several varieties and dialects such as Alemannic in the southwest and Bavarian in the southeast. Old High German is attested mostly in proper names from the end of the seventh century; after that there are glosses and religious texts from the eighth and ninth centuries. Traditionally, Old High German is said to run from about 750 to 1050 C.E., followed by Middle High German (1050–1500) and Modern German, since about 1500.

1.6.7.3. North Germanic

The final subdivision of Germanic is North Germanic, whose principal older representative is Old Icelandic or Old Norse. The earliest North Germanic materials are the early Runic inscriptions from Norway and Denmark. After that, literature in the form of poetry, sagas, and legal texts begins in the ninth century, with the bulk from the twelfth to fourteenth centuries C.E., first from Norway and Iceland, and somewhat later (ca. 1250) from Denmark and Sweden. Modern North Germanic languages with extensive records are Swedish, Norwegian, Danish, Faroese, and Modern Icelandic. For general information on the Germanic languages, see Van Coetsem—Kufner (1972), Hawkins (1987), König—van der Auwera (1994), and Ramat (1998).

1.6.8. Slavic

The Slavic (Slavonic) languages are traditionally divided into three main groups: South Slavic, which includes Bulgarian, Macedonian, Serbian and Croatian (usually grouped together as Serbo-Croatian), Slovenian, and the extinct Old Church Slavic (Old Bulgarian); West Slavic, which includes Czech, Slovak, Polish, Kashubian, Upper and Lower Sorbian (Lusatian), and the extinct Polabian; and East Slavic, which is made up of Russian (Great Russian), Ukrainian (Little Russian), and Belarusian (White Russian).

The earliest dated Slavic text is an inscription on the gravestone of Czar Samuel, found in a village in Macedonia and dated to 993 C.E. Apart from this and a manuscript from 1056 C.E. called the *Ostromirovo Evangelie* written in Old Russian, the oldest Slavic texts are in Old Church Slavic. The term Old Church Slavic refers to a small group of South Slavic or Macedonian-Bulgarian and Moravian manuscripts dating from the tenth and eleventh centuries C.E. (Schmalstieg 1982: 1). The two most archaic of these are the *Codex Zographensis* and the *Codex Marianus*, while the largest is the *Codex Suprasliensis*. Considered to be the closest extant language to Proto-Slavic, Old Church Slavic has many distinctive South Slavic characteristics. It was written in two alphabets: the older Glagolitic, in which most of the early Old Church Slavic materials were written, and the Cyrillic, which is closely modeled on Greek and which ultimately survived in use among Slavic people who follow the traditional Orthodox liturgy. For a general outline of the Slavic languages, see Comrie (1987a) and Andersen (1998).

1.6.9. Baltic

Only two Baltic languages are spoken today, Lithuanian and Latvian (Lettish). Many others are extinct, including Semigallian, Selonian, Curonian, Yatvingian,

and Old Prussian, which ceased to be spoken in the early eighteenth century.

The oldest text in which Baltic material is found is the Old Prussian Basel Epigram, a two-line text which may be datable to 1369 C.E. and is no later than the last third of the fourteenth century. Next is the Elbing Vocabulary, the first copy of which has been dated to ca. 1400 C.E. This is a Middle Low German–Old Prussian glossary which contains about 800 Old Prussian words. Though perhaps a bit later, the Elbing Vocabulary seems to represent an older stage of Old Prussian than does the Basel Epigram (see McCloskey—Schmalstieg—Zeps 1975). Another early document containing Old Prussian material is Simon Grunau's Vocabulary, written between 1517 and 1526 as part of his *Preussische Chronik*, which contains about 100 Old Prussian words. The oldest continuous text in Old Prussian are translations of Luther's catechism from the sixteenth century.

Lithuanian has a number of old texts. The earliest contains prayers and has been dated to the early sixteenth century. As with Old Prussian, the oldest continuous text in Lithuanian is a translation of Luther's catechism by Mažvydas (the Lithuanian spelling) dated explicitly to 1547.

The oldest Latvian material, a Catholic catechism, is traditionally dated to 1585. It is possible, however, that an earlier document (Simon Grunau's *Paternoster*), traditionally thought to be in Old Prussian, is in fact in a variety of Latvian known as Curonian. If this is the case, then the oldest Latvian documents can be pushed back to the 1520s. See Schmalstieg (1976: 76–83) for discussion.

Despite the fact that its earliest continuous recorded material dates from the mid fourteenth century C.E., Baltic has preserved many archaic features, especially in morphology, which are believed to have existed in PIE. The Baltic languages are considered by many specialists to be connected historically in a special relationship with the Slavic languages. Those who follow such a scheme posit a stage intermediate between PIE and Baltic and Slavic called Balto-Slavic. For discussion see Szemerényi (1957), Senn (1966), and Schmalstieg (1974). For general information on the Baltic languages, see Endzelīns (1971) and Schmalstieg (1998).

1.6.10. Armenian

Spoken predominantly in Armenia, Armenian was probably established by the sixth century B.C.E. in the area of the southern Caucasus and western Turkey. The first records of Armenian, a wealth of religious texts and a Bible translation, are considerably later, from the fifth century C.E. The language of the old texts is referred to as classical Armenian, which is usually dated from the fifth to the tenth centuries C.E., Middle Armenian (tenth to fifteenth), and Modern Armenian (fifteenth to present). Old Armenian was preserved in written form into the nineteenth century.

Armenian shows considerable influence from Greek, Arabic, Syriac, and especially Persian. In fact, so extreme is the foreign influence on Armenian that it was at

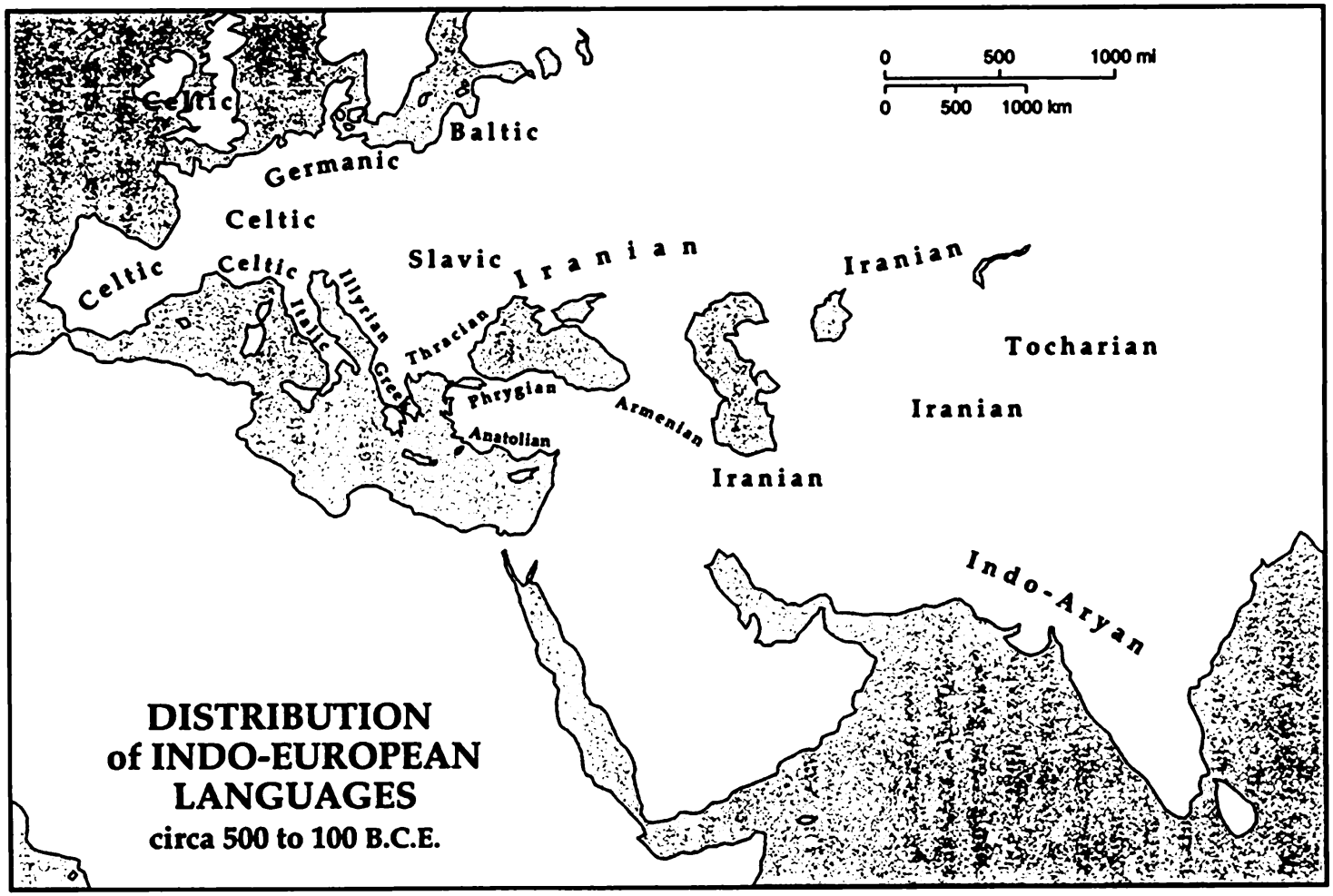
first thought to be a radical dialect of Iranian. Written in an alphabet developed in the early fifth century C.E. by St. Mesrop, Armenian is quite conservative in many of its structural features, especially inflectional morphology and, in some recent views, consonantal phonology. It is sometimes grouped genetically with Phrygian, Greek, and Indo-Iranian, primarily because of the shared use of the preverbal augment used as a marker of past time: cf. Arm. *e-ber* 'X carried', Gk. ἔ-φερε, Skt. *á-bharat*, Phry. ε-δαες 'X placed'. For general information, see Meillet (1936), Winter (1966), and Ajello (1998).

1.6.11. Albanian

The remote history of Albanian is unknown, and although there are references to Albanians by Greek historians in the first century C.E., there is no record of the language until the fifteenth century, a baptismal formula. The first continuous documents of systematic linguistic value are a Latin–Albanian dictionary from 1685 and religious translations and folktales from the nineteenth century. Albanian has been much influenced by neighboring languages, especially Latin, Greek, Slavic, and Turkish. There are two principal dialects of Albanian: Gheg, spoken in the north and in parts of the former Yugoslavia; and Tosk, spoken in southern Albania and various colonies in Greece and southern Italy. Some scholars see Albanian as a modern descendant of ancient Illyrian, others as a representative of Thracian, both fragmentarily known early IE languages. Such connections are as yet poorly demonstrated. See Hamp (1966) and Demiraj (1998).

1.6.12. Fragmentary languages

In addition to the eleven major groups (see map 1), there remain a number of "minor" IE languages which are known only in fragments, glosses, inscriptions, and other unpredictable sources. Though there has been dispute about the genetic background of some of these languages in the past, scholars generally agree, except where noted, on the following as IE: in Italy, Ligurian (northwestern Italy, south of the Celtic languages), with certain Celtic affiliations; Messapic (southern Adriatic coast), with uncertain Illyrian connections, existing in somewhat more than two hundred fifty short inscriptions; North Picene, from the northern part of the Picene territory on the Adriatic coast, tentatively but not securely IE; Raetic (from Lake Garda to the Alpine region), probably IE, but maybe with Etruscan connections; Sicel and Sicanian (eastern and central Sicily), with a remote connection to Messapic possible; Elymian (western Sicily), barely known and possibly even Italic (Lejeune 1969); and Venetic (from northeastern Italy), with Italic and Celtic affinities, known from several hundred short inscriptions which have been dated to



Map 1. Distribution of Indo-European languages, ca. 500–100 B.C.E.

somewhere between the sixth and first centuries B.C.E.

Outside of Italy are Thracian (from the area of modern Bulgaria and southern Romania), existing in two unintelligible inscriptions and some glosses and names; Phrygian (from the area of modern Central Turkey), existing in several hundred early inscriptions (eighth to fourth centuries B.C.E.) and several hundred more from six to seven centuries later. Phrygian was erroneously connected with Armenian and Albanian in past scholarship but is now considered a separate IE language with some recognizable affinities with Greek and Anatolian; Makedonian, from which only a few glosses and names survive, with possible affinities to Greek; and finally Illyrian (especially prevalent along the Dalmatian coast of the Adriatic), existing only in names and glosses, and possibly to be grouped with Messapic. None of these fragmentary languages exists in sufficient material detail to be of systematic value in the reconstruction of PIE.

1.6.13. The centum–satem dialect distinction

The IE languages can be classified into two large subdivisions. The basis for this classification is a correspondence between the sibilants (e.g. *s*, *ś*) of one group and the velars (e.g. *k*, k^{μ}) of the other. Note the contrasts in the highlighted segments of the following words for 'ten' and 'one hundred'.

'10'
Lat. *decem*, Gk. δέκα, OIr. *deich n-*, Goth. *taíhun*, Toch. A *śäk*, B *śak*
Skt. *dáśa*, Av. *dasa*, Arm. *tasn*, OCS *desętĭ*, Lith. *dẽšimt*

'100'
Lat. *centum*, Gk. ἑκατόν, OIr. *cét*, Goth. *hund*, Toch. A *känt*, B *kante*
Skt. *śatám*, Av. *satəm*, OCS *sŭto*, Lith. *šimtas*

The languages in the first line of each example (Latin, Greek, Old Irish, Gothic, and Tocharian) are called "centum" languages, after the Latin word for '100', while those in the second line (Sanskrit, Avestan, Armenian, Old Church Slavic, and Lithuanian) are called "satem" languages, after the Avestan word for '100'. The phonological basis for this contrast has to do with the outcome of reconstructed PIE velars in the two groups. In the centum languages, velars are preserved, while in the satem languages, they develop into sibilants. As it happens, this correspondence follows some general geographic lines, with the satem languages occurring mainly in the east and the centum languages occurring mainly in the west. When this classification was first proposed, it was assumed that there had been an early split of eastern and western languages, and that the eastern languages had undergone a sound change which differentiated it from the western group.

However, despite the general east–west split, the distinction between centum and satem languages is not absolute, since a few languages seem to show both centum and satem reflexes. Furthermore, the split is compromised by the centum Hittite and Tocharian in the east, neither of which was known when the distinction was first proposed. Finally, an early dialect split of the type indicated by the centum–satem contrast should be expected to be reflected in other high-order dialect distinctions as well, a pattern which is not evident from an analysis of shared features among eastern and western languages. Given the complex internal phonological histories of the languages of the IE family, specifically with respect to these sounds, it would be inappropriate to draw too many conclusions about early dialect distribution from the centum–satem division.

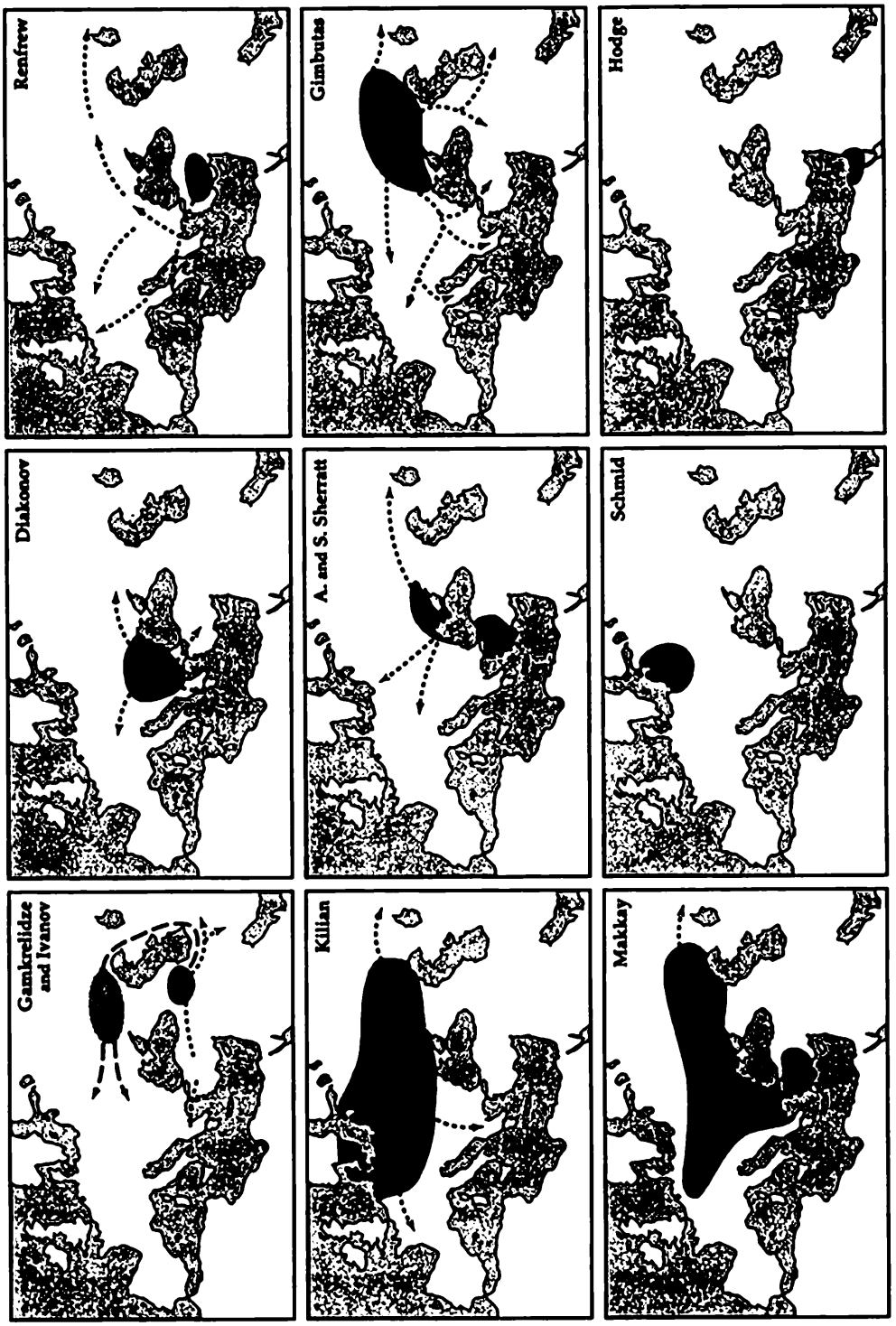
1.7. Aspects of Proto-Indo-European culture and civilization

The reconstruction of a protolanguage implies at least the partial reconstruction of a proto-culture and civilization. But linguistic evidence alone is not sufficient to provide a complete picture of a proto-culture. It must be supplemented by information from archaeology, history, folklore, institutions, and other sources. The question "Who were the Proto-Indo-Europeans?" has been studied ever since the IE family was established. Where was their homeland, when if at all were they an organized unit, and what was the nature of their culture?

1.7.1. The homeland

"Any attempt to grapple with a problem as intractable as that of Indo-European origins must essentially be an essay in controlled speculation" (Sheratt and Sheratt 1988: 593).

Many different areas of the world have been suggested for the PIE homeland (map 2). Central Asia, the Baltic region, Scandinavia, the Finnic area, Western Europe, the Babylonian Empire, southern Russia, the Mediterranean region, and a number of other places have been advanced as possibilities. The reason such a wide variety of views exists lies not only in the complexity and ambiguity of the issues, but also in the trends of the times and the prejudices of individual investigators, many of whom have been motivated by national, racial, or ethnic considerations rather than scientific method. For example, many early researchers, lacking the insights of modern anthropology, believed that the apparently strong and warlike IE people could only have been blond, blue-eyed Aryans who must have originated in northern Europe, and not Asia or the Near East. Such a confusion of the matters of race, culture, and language produced much unfounded speculation on the homeland issue.



Map 2. Proposals for the Indo-European homeland

A well-known argument about the homeland was made by Thieme (1953, summarized 1958). Using the word for 'salmon' **lokso-* (Eng. *lox* < Yiddish *laks*), Thieme argued that this fish fed only in the streams of northern Europe in the Germano-Baltic region during IE times. Since **lokso-* is recoverable with the specific meaning 'salmon' in Germanic and Baltic and the more general meaning 'fish' in Tocharian, this distribution is said to suggest a northern homeland. Furthermore, Skt. *lakṣá* 'one hundred thousand' (cf. also *lakṣmī́* 'prosperity') is interpreted as an extension of the uncountable nature of a school of salmon. Thieme concludes that the existence of this root in Indo-Iranian- and Tocharian-speaking regions, where salmon are unknown, confirms the north European Germano-Baltic region as the original homeland. But as Diebold has shown (1976; see also Mallory 1983), the word **lokso-* probably does not mean 'salmon'. Diebold argues that **lokso-* probably refers to the 'salmon trout' (*Salmo trutta*), which is found throughout the IE-speaking region, and not the Atlantic salmon (*Salmo salar*), which has a restricted distribution in northern Europe. Diebold argues further that only the salmon trout and speckled trout can be reconstructed for PIE, and that there is only one region, the Pontic-Caspian region, in which these two salmonids are found to the exclusion of all others. Thus the argument for a north European homeland based on the name for 'salmon' cannot be supported.

Thieme uses similar argumentation with the reconstructed words for 'turtle' and 'beech tree'. It is claimed that there is a botanical line where the beech flourished about 5,000 years ago, as well as an area which defines the limits of the turtle at that time. Finding roots for these words in a number of IE languages where the physical objects are unknown suggests the north European region again.

One problem with this line of reasoning is that the botanical evidence for the beech line of 5,000 years ago is not conclusive. The main issue is that the root **b^{h}eh$_{2}$g-* 'beech' only exists in the European branch of IE, with no Asian cognates, casting doubt on its status as a PIE word. In addition, the root may have come to be used to designate trees other than the beech in some dialects. Furthermore a different variety of 'beech' extends eastward toward the Caspian. See Mallory (1989) for a review; for further discussion of flora and fauna in IE, see Mallory (1982, 1983, 1991).

Using hydronyms as a means of accessing prehistory, Schmid has argued (1972, see also 1987) that the distribution of river names in the Baltic languages indicates that the original Baltic-speaking area once included regions far to the east and south (map in Mallory 1989: 82). Based on this distribution and some cognates in other languages, Schmid proposes the Baltic area as the location of the homeland. Schmid offers no scheme for the later diffusion of the IE languages. For a different application of hydronymic evidence, see Vennemann (1994b), and for a critique of the use of hydronyms in establishing prehistoric linguistic connections, see Mallory (1989: 276 n. 30). Mańczak (1990) has reopened arguments for a central European homeland area in the region of the Oder and Vistula rivers. His claim is based on the fact

that there is more of the original IE vocabulary preserved in the European branches of the family (e.g. Slavic, Germanic, Baltic, Italic, Celtic, and Greek) than is preserved in the Asian members (e.g. Armenian and Indo-Iranian).

Sheratt and Sheratt (1988) postulate a coastal koine or common language of compromise around the shores of the Black Sea in the fourth and third millennia, bringing together Pre-Proto-Indo-European languages already existing in Anatolia and perhaps in the Balkan and Pontic area as well. Other recent proposals include that of Diakonov (1985), who reopens arguments for a Balkan homeland for the Indo-Europeans, and Kilian (1983), who posits a vast linguistic continuum between the North Sea and the Volga. Kilian's proposal, which is not supported by either linguistic or archaeological evidence and argumentation, groups together a number of disparate settled agriculturist and steppe cultures. They encompass a geographic area between 2,000 and 3,000 kilometers long, which he lumps together without historical justification. In a similar vein is the proposal of Makkay (1992), who argues that various cultures associated with the northwest Indo-Europeans and perhaps with the Balts and Slavs and the Yamna cultures of the Eurasiatic steppe might be associated with the Indo-Iranians in the east and perhaps the forebears of the Greeks and Hittites in the west in the fourth millennium. On this view the homeland covers a much larger area than most others that have been proposed. Because of the large areas which they postulate as original, neither Kilian's nor Makkay's proposal really addresses the issue of "homeland", since as Anthony (1995) has argued, the PIE homeland could not have covered an area of more than 500,000 to 750,000 square kilometers.

One widely held view is that of Gimbutas, who has argued (e.g. 1970) that the original PIE speakers were the bearers of the so-called Kurgan or Barrow culture found in the Pontic and Volga steppes of southern Russia, east of the Dnieper River, north of the Caucasus, and west of the Ural mountains. The Kurgan culture (from Russ. *kurgan* 'burial mound') is typified by tumuli, round barrows or "kurgans", which are raised grave structures from the Chalcolithic and Early Bronze Age periods. Evidence from the Kurgan archaeological excavations provides clear evidence of animal breeding.

Kurgan culture is divided into several periods, beginning in the fifth millennium B.C.E., when the Indo-Europeans started out from the Pontic-Caspian region in about 4500 B.C.E. The Indo-Europeanization of the Kurgan culture took place during the Kurgan II period, roughly 4000–3500 B.C.E. Kurgan sites from the period have been found in the north Pontic region, west of the Black Sea in the Ukraine, Rumania, the former Yugoslavia, and Eastern Hungary. During the Kurgan III period (ca. 3500–3000 B.C.E.), Kurgan culture spread out across Central Europe, the entire Balkan area, and into Transcaucasia, Anatolia, and northern Iran. Eventually, it also spread into northern Europe and the upper Danube region. During the final period, Kurgan IV, waves of expansion carried the culture into Greece, western Anatolia, and the eastern Mediterranean, the process being complete by about 2000

B.C.E. See further Mallory (1989: 262–265).

According to Gimbutas, the archaeological evidence attesting to the domesticated horse, the vehicle, habitation patterns, social structure, and religion of the Kurgans is in accord with the reconstruction of PIE, which reflects a linguistic community from about 3500–3000 B.C.E., a position which has been reaffirmed by H. Thomas (1992) and is also in general agreement with the ideas of Anthony (1991, 1995), who postulates the period of the initial expansion of the IE languages from the Ukrainian steppes along the Dniepr at about 3500 B.C.E.

Gimbutas has argued (1970) that the period of ca. 6500 to 3500 B.C.E. represents what she called "Old Europe". She claims that the early Neolithic agriculturists constituted a non-IE substratum for the invading IE speakers who would later come from the Pontic-Caspian region. Evidence for her position comes from a variety of areas. First is the fact that some basic Indo-European agricultural terms cannot be given IE etymologies; second is the fact that Neolithic religious practices found in Europe are of a notable non-IE character; still further evidence comes from the large number of non-IE names for domesticated animals (which often exist side by side with IE names), as well as names for cereals and legumes. There are also clear non-IE traditions in technology, architecture, sculpture, ceramics, copper metallurgy, and textiles. What Gimbutas sees as the beginnings of IE culture is a blending of the substratal non-IE culture and the intrusive superstratal culture of the migratory Indo-Europeans. This blending, she claims, is the ultimate source of "Western Civilization".

A different view of the homeland is offered by Renfrew (1987). According to Renfrew, the PIE homeland was located in central Anatolia extending to the Northern Zagros mountains at about 6500 B.C.E. In a "wave of advance", generations of Indo-European agriculturists moved out of this region and spread across what were to become the documented homes of speakers of IE languages. According to this model, which is based primarily on the archaeological record and a demographic model of "processual spread", movement would have proceeded at about 18 kilometers per generation. It was in this way that the farming economy spread across Europe. For a critique of Renfrew's proposals, see Mallory (1989).

Renfrew's account fits with the independently formulated linguistic speculations of Gamkrelidze—Ivanov (1995), who place the original Indo-Europeans in the same general region, though a few millennia later. Gamkrelidze and Ivanov propose that the original homeland of the IE-speaking peoples can be pushed back beyond its third-millennium home north of the Black Sea to an earlier location near Lake Urmia at the juncture of modern Iraq, Syria, and Turkey, and that the majority of the IE-speaking peoples made their way to Europe from there. In their view, the Pontic area was simply the point from which the final incursion of IE speakers into Europe was launched. According to Gamkrelidze and Ivanov, the Eastern location of the earliest IE speakers is a pre-Pontic "staging area" from which Slavs, Balts, Celts, and Germanic and Italic people left to head northward to the Pontic region, and

from which others, later Indic and Iranian peoples, moved to their current homelands. Greeks moved westward across Anatolia and eventually into their historic home across the Hellespont. Armenians and Anatolians stayed where they were. See Mallory (1989) for discussion. Some support for the idea of an expansion of the IE peoples from Turkey and the Middle East has come from the recent discovery of the desiccated remains of several humans in the Xinjiang province of Northwest China. The Caucasian features of the corpses, aged about 3,200 years, suggests a relationship with the Tocharians, an IE group that lived in the region in historical times. This discovery could provide a significant contribution to the question of the spread of the IE languages.[12]

Much of Gamkrelidze and Ivanov's hypothesis is based on linguistic and not archaeological evidence, and it cannot be separated from their views of the reconstructed protolanguage, which will be discussed in the following chapter (see Diakonov 1985 for a critique). Their argument hinges in part on substratal Afroasiatic, most specifically Semitic, vocabulary found in IE which had been previously explained as later loanwords into individual languages, but which they claim is part of the oldest recoverable vocabulary layers in PIE. Among these vocabulary items are the word 'horn' (Lat. *cornū*, Goth. *haúrn*, Skt. *śṛ́ṅga-*), to which corresponds the Semitic root **qrn*. Similarly, there is Hebrew *gdī*, Akkadian *gadū*, corresponding to Lat. *haedus* and Eng. *goat*. But the linguistic evidence for an Asian beginning for the IE-speaking peoples is far from irrefutable and is surely not helped by the fact that there are no IE languages spoken at all in the region of the purported homeland. In fact, lexical and grammatical correspondences between IE and Afroasiatic languages could signal a remote genetic relationship rather than borrowing during the migratory period, as Bomhard (1990) and, more speculatively, Bomhard—Kerns (1994) have argued. Arguments for an even more distant homeland in the Nostratic context have been advanced by Hodge (1981). Basing his argument primarily on the presence of IE (Anatolian) languages in the Near East from a very early period, Hodge argues for a Near Eastern location for the Indo-European homeland in the neighborhood of the Egyptian Delta and the Sinai, without, however, any explicit suggestions for the diffusion of the IE languages.[13]

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12 See the papers in *Journal of Indo-European Studies* 23, 3/4 (1995).

13 Working from the Nostratic point of view, Bomhard (1996: chap. 6, esp. 119) presents the following scenario. The unified Nostratic parent language may be dated to between 15,000 and 12,000 B.C.E. and was located in the Fertile Crescent just south of the Caucasus. It began to expand geographically around 12,000 and split into several distinct dialects, one of which was to become Proto-Indo-European. The early Indo-Europeans were in central Asia by about 7000, from which they spread westward across the steppes to the northeastern shores of the Black Sea, where they were established by about 5000.

1.7.2. Lexical reflections of PIE culture

Salient lexical concepts which give insight into PIE culture are noted in what follows, though for ease of exposition reconstructed data are not included.

Physical environment. Words for day, night, the seasons, dawn, stars, sun, moon, earth, sky, snow, and rain are recoverable. A number of arboreal units have been identified and successfully reconstructed. Words for horse, mouse, bear, wolf, eagle, turtle, salmon trout, beaver, otter, dog, wasp, bee, and louse can also be reliably postulated. It is interesting that no single word for island, river, or ocean can be established.

Family organization and social structure. The matter of PIE family and social structure is debated. Some scholars (e.g. P. Friedrich 1966: 29; see also Szemerényi 1977) view PIE culture in terms of patriarchal, patrilocal families that probably lived in small (wooden) houses with hearths. In this view, villages were small, distant, and exogamous. There is evidence for patriliny, and cross-cousin marriage was probably not permitted. Kinship terms are securely reconstructible for father, mother, brother, sister, son, daughter, son-in-law, husband's family members, grandson (descendant generally), grand-relatives (especially grandfather), and widow. Evidence for PIE patriarchal kinship comes not only from the lexicon but also from epic songs, legal tracts, and ethnological sources from the various ancient IE languages. There is a word for people in the sense of tribe, and also words for village, house, doorpost, and hearth.

Technology. The IE languages confirm the technological advancements of the proto-culture, though it is possible that some of these concepts and the accompanying terminology are borrowed or absorbed from substratal sources. Evidence from farming and agricultural terms indicates small-scale farmers and husbandmen who raised pigs, sheep, and cows, used horses, knew barley, and had words for grain, sowing, ploughing, grinding, settlement, milk, field or pasture, and probably wine. There are reconstructible words for arrow, axe, wagon, axle, hub, yoke, ship, oar, and copper or bronze, as well as a root for 'to build', showing a rather advanced people with knowledge of worked metals, construction, and agriculture.

Religion and law. There are indications of a religious system among the PIE people discernible from lexical, legal, and other sources. Some scholars see evidence of an early goddess-worship culture in lexical and formulaic residue, especially in Greek. There is a word for god (related to the word for day), and a designation for a priest; words for worship, prayer, praise, prophesy, and holy give clear indications of organized religion. There is lexical evidence and evidence from ancient institutions for legal concepts such as thief and stealing, religious law, pledge, justice, and compensation. For further discussion see Benveniste (1969) and Campanile (1998); a large-scale cultural lexicon is Buck (1951); Schrader—Nehring (1917–1929) and Mallory—Adams (1997) are encyclopedic in their coverage.

1.8. Summary

This chapter has surveyed the methodologies employed by specialists to determine genetic groupings among languages and to reconstruct earlier stages of linguistic systems (protolanguages). Through the use of these methods, linguists have identified the Indo-European (IE) family of languages and have established the existence of an ancestral protolanguage, Proto-Indo-European (PIE). The languages which make up this family have been identified, and their internal groupings and dependencies have been discussed. Various proposals concerning the prehistoric homeland of the speakers of PIE and the spread of the IE languages have been reviewed, and it has been proposed that the earliest speakers of IE languages and their culture can be traced back to the steppe region of what is now southern Russia, dating in several phases from the fifth millennium B.C.E. The culture of the speakers of PIE has also been discussed, and it has been shown through an analysis of salient lexical items that the early speakers of PIE were technologically advanced, with a knowledge of agriculture, worked metals, and animal husbandry.

Chapter 2
An outline of Proto-Indo-European

The discoveries of Mycenaean Greek, Tocharian, and especially Hittite in the twentieth century have substantially modified the database of IE studies. The addition of the data provided by these languages, some of which have challenged long-held positions concerning the structure of the protolanguage, has produced inevitable differences between modern investigators and their predecessors in their conceptualization and reconstruction of PIE. However, the archaic or innovative status of data provided by these new discoveries is not always clear, so that current investigators often disagree among themselves on aspects of the reconstructed system. While such differences are occasionally based on matters of foundational significance (such as whether PIE was of a structure more like Hittite than Greek or Sanskrit), more often than not they revolve around individual details of the protolanguage.

Historical methodology provides no convenient algorithm for feeding data in and getting reconstructions to come out in a purely mechanical way.[1] Among the difficulties are the following: What stage of the protolanguage is being reconstructed? Which features in which of the languages being compared are older, and therefore of more potential value for recovering the ancestral form? Which features are innovations? Which features are borrowed, when were they borrowed, and how widely are they spread throughout the system?[2] How are the features weighted for significance? Where have analogies applied? What assumptions can be made about the relative importance of lexical, morphological, syntactic, and phonological characteristics of individual languages, and about directions of language change?

The most intractable is the issue of chronology. PIE cannot be considered a static entity which existed at a certain time and place, without a past of its own and without the kinds of linguistic influences which are known to affect natural languages. Millennia of internal evolution and external influences contributed to the shaping of the PIE system, including influences from non-IE languages which were present in the area where PIE is thought to have developed. This makes it difficult to write a synchronic description of PIE because the various ages of the language are blended together in evolution, resulting in a multi-layered system with traces of earlier struc-

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1 It is suggestive that no serious computerized reconstruction of standard PIE phonological or lexical structure has ever been produced in any framework.

2 Borrowing is a common phenomenon in the lexicon but is considerably less common in the structural core. Nonetheless, it does happen. Among the older IE languages, one example of a structurally incorporated borrowing involves the retroflexed obstruents of Sanskrit (*ṭ, ḍ, ṭh, ḍh, ṇ, ṣ*), which derive from the Dravidian languages of Southern India and are not traceable to PIE. Among modern IE languages, English is saturated with borrowings from French, Latin and Greek, providing many morphemes which have extended beyond their etymological domain, e.g. Gk. *-ize*, as in *popularize, capitalize, Americanize*, and so on.

tures emerging in later ones. Unfortunately, these earlier stages appear unpredictably in the descendant languages, as accent in Slavic, as gender in Hittite, as verb tense in Germanic, and so on.

The reconstruction of a protolanguage from the evidence of many descendant languages requires that certain a priori decisions be made. A critical one is the weight to be assigned to the evidence of particular languages, and their relative value for reconstruction.[3] It is clear, for example, that Latin is of more value than French in discerning older features which are relevant to the reconstruction of PIE. But what about Latin vs. Sanskrit? Sanskrit is older than Latin in the sense that its written records can be traced back further in time. But does that make the evidence provided by Sanskrit automatically more valuable than that provided by Latin?[4] Merely because the evidence provided by one language is older than that provided by another does not necessarily privilege that evidence in reconstruction. For example, Hittite has a morphological structure that is simpler in some respects than that of Latin, Greek, and Sanskrit. Such simplicity has traditionally been held to be typical of much later stages in the evolution of the IE languages. Yet Hittite provides the oldest evidence in IE linguistics, predating Latin, for example, by more than 1,000 years. The opposite situation is provided by Lithuanian, by all accounts a conservative language which apparently preserves a number of features from late PIE, but whose first documents of any length stem from well into the sixteenth century, more than 3,000 years later than the oldest Hittite materials. Should Lithuanian be ignored because it is so young, and, conversely, should Hittite always be highly valued because it is so old? It is clear that the "archaic" features of Lithuanian represent one evolutionary path of PIE, while the "archaic" features of Hittite represent another, showing among other things that time itself is not a reliable indicator of archaism.

There are also theoretical matters which guide the adoption of a particular version of the proto-system. For example, many linguists subscribe to the Neogrammarian principle of phonological regularity, placing analogy and the effects of language contact in secondary roles. Others argue, and not without justification, that sound change is often less than regular, and that such processes as analogy and borrowing should not be called up as needed only when sound laws provide no account for unexplained residue. There is no reason, for example, why analogy should not apply independently of sound laws in reshaping some morph, obscuring its position in the system and making the application of the traditional comparative method futile. In real situations, investigators holding to these opposing views can produce different

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3 In a critical review of the word-order issue in IE studies, Watkins (1976: 310) referred to this selection process as "Teeter's Law": "... the language of the family you know the best always turns out to be the most archaic."

4 In early IE studies, before the discovery of Hittite, Sanskrit was usually considered to be the most archaic of the IE languages, practically a dialect of PIE. The data provided by Hittite showed this to be unwarranted as a general principle.

reconstructions.[5]

Another area in which investigators may hold different theoretical opinions which affect the nature of reconstructions is in the significance to be assigned to typological evidence. Many historical linguists dismiss typological evidence as irrelevant, preferring an inductive "bottom-up" approach to reconstruction in which the data alone guide the investigation. Those admitting typological evidence are more inclined to favor a deductive "top-down" reconstruction, following a set of pre-established structural norms. The glottalic theory of PIE phonology discussed below is based in large part on such typological principles.

In this chapter, past and present thinking on PIE phonology will be reviewed, as will commonly held positions on the morphological and syntactic structure of the protolanguage. The purpose of this sketch of PIE structure is to provide a background against which to discuss the specific Italic and Latin developments in the subsequent chapters.

2.1. Phonology

2.1.1. Segmental phonology

The first systematic attempt to reconstruct the sound system of PIE was by A. Schleicher in 1861. Using the sound correspondences worked out by his predecessors, Schleicher proposed the system in table 2.1 (from the 1876 ed., pp. 10, 11).[6]

Schleicher's vowel system was based primarily on the pattern found in Sanskrit whereby "basic vowels" such as *a*, *i*, *u*, and *ṛ* are modified by morphologically governed strengthening processes which the Indian grammarians called *guṇa* 'secondary quality' and *vṛddhi* 'growth, increment'. A *guṇa* vowel arises when an *a*-element is prefixed to a simple vowel, with which it then combines. A *vṛddhi* vowel arises by the further prefixation of *a* to the *guṇa* vowel. The complete series is as follows (Whitney 1889 [1964]: 81–82).

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5 An example of such differences can be found in approaches to the etymologies of the words for 'god', *deus* in Latin and θεός in Greek. Despite their close semantic and morphological resemblances, the two words cannot be taken as cognates according to the strict application of the comparative method. Regular sound developments would predict either **feus* for Latin or *δεός for Greek if the two were derived from a common etymon. In order to reconcile the two an analogy would have to be proposed, say, for example, that the initial *d-* of Latin *deus* is analogical to the initial *d-* of *Diespiter* 'Jupiter'. But in fact the two are clearly completely separate entities.

6 This and the tables that follow use the original terminology for the reconstructed sounds. However, in the interest of consistency, certain typographical variants have been standardized, such as the use of *ḱ* and *ǵ* to show palatals (not *ḱ*, *ǵ*), the use of *u̯* and *i̯* to mark glides (not *w* and *y*), the use of $k^{u̯}$, $g^{u̯}$ to mark labiovelars (not k^{w}, g^{w}), the use of *k* to mark voiceless velars (not *q*), and the use of a raised ^{h} (e.g. p^{h}) to indicate aspiration (not *ph*).

Table 2.1. Schleicher's reconstructed system

	unaspirated vclss.	vcd.	aspirated vcd.	spirants vclss.	vcd.	nasals vcd.	r vcd.
guttural	k	g	g^h				
palatal					j		
lingual							r
dental	t	d	d^h	s		n	
labial	p	b	b^h		v	m	

Vowels	
a	a, aa, āa
i	i, ai, āi
u	u, au, āu

Table 2.2. Vowel strengthening in Sanskrit

Root	*stu-* 'praise'	Root	*kṛ-* 'make'
Past part. (basic vowel)	*stutá*	Past part.	*kṛtá-*
Inf. (*guṇa*)	*stótum* (*a* + *u*)	Inf.	*kártum* (*a* + *r*)
Pres. indic. (*vṛddhi*)	*staúti* (*a* + *o*)	Perf. indic.	*cakára* (*a* + *ar*)

Simple vowel	a, ā	i, ī	u, ū	ṛ	ḷ
Guṇa	a, ā	e	o	ar	al
Vṛddhi	ā	āi	āu	ār	

These alternations in Sanskrit are illustrated in table 2.2 (Allen 1953: 12–13).

Schleicher's system soon gave way to the model proposed by the Neogrammarians, a group of younger scholars with quite different views about PIE, and about language change generally, from their predecessors. The Neogrammarian system is embodied in the classic work of K. Brugmann, as in table 2.3 (1904: 52); see also the detailed treatment in Meillet (1937: 82–145).

Brugmann's system is much more elaborate than Schleicher's, with more occlusives, more fricatives, diphthongs, etc. But probably the most significant difference is in the system of simple vowels. Brugmann proposes a six-short-, five-long-vowel system which is much more like that of Greek or Latin than that of Sanskrit. This change in thinking was brought about by the proposal that a change had taken place whereby the PIE vowels **ĕ*, **ŏ*, **ă*, as they were reconstructed at the time, had merged in Sanskrit into *ă*: cf. Lat. *sequor* 'I follow',[7] Gk. ἕπομαι, Skt. *sáce* (**e*);

7 When sets of cognates are cited, the first member of the set is provided with an English gloss. All cognates which follow can be assumed to have the same meaning until another English gloss is given. For example, in Skt. *áśvaḥ* 'horse', OLat. *equos*, Toch. B *yakwe*, OLith. *ešvà*, *ašvà* 'mare', the Old Latin and Tocharian B forms mean 'horse'.

Table 2.3. Brugmann's reconstructed system

Consonants									
Occlusives	p	p^h	b	b^h	(labial)				
	t	t^h	d	d^h	(dental)				
	ḱ	$ḱ^h$	ǵ	$ǵ^h$	(palatal)				
	k	k^h	g	g^h	(velar)				
	k^u	k^{uh}	g^u	g^{uh}	(labiovelar)				
Fricatives	s	s^h	z	z^h	þ	$þ^h$	đ	$đ^h$	(j)
Nasals	m	n	ñ	ŋ					
Liquids	r	l							
Semivowels	i̯	u̯							
Vowels (Brugmann 1904: 67, 89, 122–138)									
Vowels	e	o	a	i	u	ə			
	ē	ō	ā	ī	ū				
Diphthongs	ei̯	oi̯	ai̯	əi̯		eu̯	ou̯	au̯	əu̯
	ēi̯	ōi̯	āi̯			ēu̯	ōu̯	āu̯	
Syllabic Liquids and Nasals	l̥	r̥	m̥	n̥	o̯	o̯			

Lat. *ovis* 'sheep', Gk. ὄ(Ϝ)ις, Skt. *ávih* (**o*); Lat. *ager* 'field, plain', Gk. ἀγρός, Skt. *ájrah* (**a*). Thus it was shown that Sanskrit was not to be considered closest to the protolanguage in all respects.[8]

The Neogrammarian system, which in modified form still finds adherents today, was put to the test by the theories of Saussure (1879) and the findings of Kuryłowicz (1927) and others. Based in part on the irregular behavior of certain sounds in the daughter languages, Saussure proposed that PIE had contained sounds of uncertain phonetic value which he called "coefficients sonantiques". According to Saussure, these sounds were lost in the daughter languages, but not before they left traces of their former presence on the sounds which had surrounded them. For example, there is no regular explanation for the difference in vowel length between the two forms of Gk. ἵστημι (Dor. ἵστᾱμι) 'I stand', which contains *ā*, and στατός 'placed, standing', which contains *ă*. Saussure theorized that originally the root had been **steA*- (*A* = a "coefficient sonantique")[9] in which *A* had been lost. Thus the

8 The vocalic changes in pre-Sanskrit are recoverable from the behavior of velar consonants. These changes are covered under the "Law of Palatals" (see Collinge 1985).

9 *A* is a symbol which is currently out of use. It is more common to find *H* as a general symbol to represent Saussure's lost consonants (with the specific variants h_1, h_2, and h_3), but the original *A* is maintained in this discussion in the interest of historical continuity. The root **steA*- is now reconstructed as **steh*$_2$-. Henceforth, *H* stands for any laryngeal and h_1, h_2, h_3 represent the three different laryngeal consonants postulated for PIE.

alternation of *ā/a* seen not only in ἵστᾱμι/στατός, but also in such forms as Gk. φησί (< *φᾱ-τι), φαμέν 'X speaks, we speak', could be considered of the same type as that found in such well-known *e/ø* alternations as the one seen in Gk. ἐσ-τί, εἰσί (< *σ-εντι) 'X is, they are', and in Gk. λείπ-ων, λιπ-ών 'leaving, left'. Saussure's claim was that the **A* had changed the **e* to **a* and had lengthened it to *ā* in ἵστᾱμι before disappearing. The major changes ascribed to the action of these sounds include changing **e* to **o*, **e* to **a*, and lengthening preceding vowels (cf. also τίθημι, τίθεμεν 'I, we place', δίδωμι, δίδομεν 'I, we give', and many other alternating pairs).

This new theory, based on abstract principles and the method of internal reconstruction, was put to use to explain a wide range of phonological and morphological phenomena in various IE languages. It came to be called the "laryngeal theory", since it is thought that the "coefficients sonantiques" may have had a laryngeal articulation. Theories utilizing laryngeals were developed to explain facts of PIE root configuration (which Benveniste had claimed (1935) was of the structure CeC), ablaut relations, and other phenomena. Many proposals concerning the exact number of laryngeals, and their effects, were made, with proposals ranging from one to twelve different laryngeal sounds. The theory remained unverified until 1927, when Kuryłowicz demonstrated that the recently discovered Hittite preserved laryngeal-like sounds (written as *ḫ* or *ḫḫ*) precisely in those positions where Saussure had theorized their existence in PIE. Some examples: Hitt. *ḫanti* 'front': Lat. *ante* 'before'; Hitt. *ḫarkiš-* 'white': Gk. ἀργής 'bright'; Hier. Luw. *ḫawi-* 'sheepherder': Lat. *ovis* 'sheep'; Hitt. *palḫi-* 'broad': Lat. *plānus* 'level'; Hitt. *meḫur* 'time': Goth. *mēl*; Hitt. *waḫanzi* 'they turn': Skt. *váyati* 'X weaves'; Hitt. *newaḫḫ-* 'renew': Lat. *novāre*.[10]

The empirical confirmation that Hittite provided for Saussure's theories led to a reworking of the PIE sound system into what is now generally known as "the traditional system". The proposals of Lehmann (table 2.4) can be taken as representative of these developments (1952: 99); see also Cowgill—Mayrhofer (1986).

Another system (table 2.5) has been proposed by Szemerényi (1996: 150). This system reestablishes the voiceless aspirates and, tentatively, the palatal stops. Because it is designed for a late stage in the evolution of PIE, the vowel system reflects the later developments from which "classical" systems such as those found in Latin, Greek, Baltic, Slavic, and Sanskrit are directly derived.

2.1.2. The glottalic theory

According to Gamkrelidze—Ivanov (1995: xcv), reconstructions only have validity if they are consistent with two criteria. First, they must conform to synchronic typo-

10 See Polomé (1965), Bammesberger (1988), and Beekes (1995) for PIE; for the treatment of laryngeal effects in Latin see Watkins (1965), Monteil (1986), Mayrhofer (1987), and most recently Schrijver (1991).

Table 2.4. Lehmann's reconstructed system[a]

Stops	p	t	k	$k^{\underline{u}}$			
	b	d	g	$g^{\underline{u}}$			
	b^h	d^h	g^h	$g^{\underline{u}h}$			
		s					
Resonants	m	n					
	$\underline{u}$	r	l	$\underline{i}$			
Vowels		e	a	o	$\underline{e}$		
	ī	ē	ā	ō	ū		
Laryngeals			x	ɣ	h	ʔ	

a The symbol /̲/ represents an unaccented vowel.

Table 2.5. Szemerényi's reconstructed system

Obstruents	p		p^h		b		b^h						
	t		t^h		d		d^h						
	(k̑		k̑^{h}		ĝ		ĝ^h)	ʔ					
	k		k^h		g		g^h						
	$k^{\underline{u}}$		$k^{\underline{u}h}$		$g^{\underline{u}}$		$g^{\underline{u}h}$						
	s		h										
Resonants	$\underline{i}$		$\underline{u}$										
	m		n										
	l												
	r												
Syllabic liquids and nasals	ṇ		ṃ				ṉ		ṃ̄				
	l̥		r̥				l̥̄		r̥̄				
Vowels and diphthongs	i				u					ī			ū
		e	ə	o							ē	ō	
			a								ā		
		ei		oi							eu	ou	
			ai								au		

logical universals, that is, principles governing the structure of languages; and second, they must agree with diachronic typological universals, that is, conventional schemas for the change and transformations of languages. In light of these principles there has been an effort to revise the reconstruction of the PIE system, in particular the system of stop consonants, in such a way as to conform to general principles of typology. Among the many issues being discussed, the following are the most significant:

a. The traditional system (e.g. that of Lehmann 1952) without phonemic voiceless aspirates is said to be in violation of a principle of markedness (Jakobson 1957) which states that the presence of the marked member of a

Table 2.6. "Grimm's Law" and the Armenian consonant shift

PIE				Gmc.		
p	t	k	>	f	þ	χ
b	d	g	>	p	t	k
b^h	d^h	g^h	>	b	d	g
PIE				**Arm.**		
p	t	k	>	h/p'	t'	k'/č'
b	d	g	>	p	t	k
b^h	d^h	g^h	>	b/v	d	g/ǰ

correlative series (in this case the voiced aspirated series, e.g. $*d^h$) implies the presence of the less marked series (in this case the voiceless aspirates, e.g. $*t^h$).

b. There is a discrepancy in the freedom of occurrence of **b* in comparison with the other members of the plain voiced series, **d* and **g*. The phoneme **b* is rare in non-initial position, and those few examples which may point to **b* are not secure. The first of these is the set represented by Lith. *dubùs* 'deep', Goth. *diups*, OCS *dŭbrĭ* 'canyon, gorge', Gaul. *Dubno-rīx* 'king of the world', OIr. *domun* 'world'; the second set attesting to PIE **b* is Icel., Norw. *slapa* 'limp, slack', OCS *slabŭ* 'weak', Lith. *slõbti* 'become weak', and possibly Lat. *labor* 'slip, slide'. Despite many attempts to account for the rarity or absence of this alleged phoneme in PIE, it has resisted satisfactory explanation.

c. There are restrictions on the structure of PIE roots which are only imperfectly handled with traditional reconstructions. These restrictions state that a root cannot begin and end with a plain voiced stop (***deb*-), and a root cannot begin with a plain voiceless stop and end with a voiced aspirate, or vice versa (***ped*^{h}-, ***b*^{h}*et*-).[11]

d. Plain voiced stops as traditionally reconstructed rarely occur in reconstructed inflectional affixes, in which PIE was rich. Indeed, the only clearly recoverable final voiced consonant is **d*. These are distributional oddities for which there is no motivated explanation.

e. It has long been a curiosity that both Germanic and Armenian underwent similar consonant shifts, requiring a parallel set of innovative sound changes. The Germanic one came to be celebrated as "Grimm's Law", and forms the backbone of much pre- and post-Neogrammarian thinking on sound change. In the traditional view of PIE phonology, Grimm's Law and the Armenian shift run as in table 2.6.[12]

11 McCarthy (1988: 91) analyzes these restrictions in terms of feature geometry.

12 Swiggers (1989: 189–191) rejects the parallel between these two shifts.

Table 2.7. The glottalic model of PIE stop consonants

	Voiceless	Glottalized (Ejective)	Voiced
Labials	p[ʰ]	p'	b[ʰ]
Dentals	t[ʰ]	t'	d[ʰ]
(Palatals	ḱ[ʰ]	ḱ'	ǵ[ʰ])
Velars	k[ʰ]	k'	g[ʰ]
Labiovelars	kʷ[ʰ]	kʷ'	gʷ[ʰ]

In light of these issues and the unsatisfactory solutions which have been proposed, a revised reconstruction of the stop system of PIE has been offered which is consistent with the requirements of typological verification. The most fully developed version of the "glottalic theory/model" (Gamkrelidze—Ivanov 1995) is characterized by the following:

a. The postulation of aspiration as phonetically but not phonologically relevant, making the opposition between non-glottalized stops one which is based entirely on the feature of voice. According to Gamkrelidze and Ivanov, the distribution of aspirated and unaspirated allophones in daughter languages depends on their position in the word (cf. Normier 1977, Back 1979).
b. The inclusion of a series of glottalized stops (ejectives) in place of the plain voiced stops of traditional models.
c. A refinement of the root structure constraints.

The model presented in table 2.7 is from Gamkrelidze—Ivanov (1995, chap. 1). According to some proponents of the glottalic model, a three-way system of voiceless, glottalized, and voiced stops such as that in table 2.7 provides phonologically acceptable solutions to the five problems posed above:[13]

a. It violates no naturalness condition or typological universal. In fact, accord-

13 There are several versions of the typological or glottalic model, and while the larger issues are agreed upon by proponents of the different versions, details remain under discussion. The following solutions to the five problems presented by the traditional systems have several different executions and some different results. See, for example, Miller (1977a). The most phonologically specific account of the structure and development of the stop system is to be found in Vennemann (1984), who accounts for features of the Second Germanic Consonant Shift working with an opposition in PIE of voiceless aspirated stops, glottalized stops, and lenis stops; and Shevoroshkin—Manaster Ramer (1991), who, working within the Nostratic context, provide specific derivations for PIE stops from Proto-Nostratic. It should be noted that empirical investigations of the world's languages have yielded exceptions to a number of the universalist claims which are commonly made in the glottalic model, such as the presence of glottalics in Aymara in word-final morphemes, and the existence of labial gaps in a number of the world's languages, including Old Irish, Hausa, and Arabic. For the glottalic theory in general, see initially Pedersen (1951); more specifically Hopper (1973, 1981), Bomhard (1981), Gamkrelidze (1981), Gamkrelidze—Ivanov (1995), Vennemann (1989b), and Salmons (1993). For an opposing view, see Garrett (1991), Joseph—Wallace (1994), Job (1995), and Woodhouse (1995).

ing to Gamkrelidze and Ivanov, it reflects a system found in some modern Armenian dialects. Under this view Indo-Iranian, for example, is considered to be innovating, not conservative as in earlier models, since it has created distinctions between aspirated and non-aspirated stops, and between voiced and voiceless aspirates, rather than preserved original differences from PIE.

b. In languages employing glottalized stops, the labial member (*p'*), which is equivalent to traditional **b*, is the most marked, and hence the least frequently occurring member of the glottalized series. Thus the rarity of **b*, unsatisfactorily explained by traditional views, is said to derive from a general typological principle.
c. The morpheme structure rules reflect a different set of conditions, namely that each root must contain at least one non-glottalized consonant, and that when both obstruents in a root are non-glottalic, they must agree in voicing value.[14]
d. The general absence of plain voiced stops in inflections and word-finally reflects an absence of glottalized consonants. Such a pattern is characteristic of highly marked phonemes such as glottalics.
e. Under the new system, the parallel Germanic and Armenian consonant "shifts" are said to reflect archaic retentions rather than innovations. All the other groups are thought to have undergone fairly regular phonologizations which can be derived from the system utilizing glottalics.

In the glottalic model the voiced and voiceless stops are held to have aspirated and non-aspirated allophones which are determined by their phonological position in the stem, and by a phonotactic principle which states that one and only one aspirated consonant can occur in a given stem. This constraint, which was phonologized in different ways in individual languages, has far-reaching implications for the reconstruction of PIE. For example, Sanskrit and Greek show the distribution CVC^h (e.g. **deig^h*-: cf. Gk. τεῖχος 'wall', Skt. *déhmi* 'I fashion with clay'), while Italic shows the opposite distribution C^{h}VC (**d^{h}eig-*: cf. Lat. *fingō* 'I fashion') for traditionally reconstructed **d^{h}eig^h*-. This constraint on root structure allows Gamkrelidze and Ivanov to push "Grassmann's Law", which is normally held to govern only the dissimilation of aspirates in Greek and Indic, back into PIE, an intriguing though controversial proposal.[15]

The distribution of aspiration in the voiceless stops (e.g. **p*, **p^h*) generates a variety of outcomes in the descendant languages. For example, in Latin the distinction between the aspirated and non-aspirated allophones is neutralized, yielding plain voiceless stops; in Sanskrit the two develop independently into e.g. *p* and *p^h*, creat-

14 See Gamkrelidze—Ivanov (1995: 17–19) for additional ramifications of these constraints on root structure.

15 Miller (1977b) has argued that Grassmann's Law must have applied late in Greek, since early dialect inscriptions show forms like θυφλός for τυφλός 'blind'. See further Iverson (1985), Joseph—Wallace (1995).

ing two separate series.[16] In Germanic, the outcome of the voiceless stop series is voiceless fricatives. The statement of these patterns is quite complicated.

Despite initial enthusiasm for the glottalic theory,[17] evidence against it has mounted, and the amount of research being done in this framework has dwindled steadily since the mid 1980s. Among the most serious criticisms of the theory, at least the variety propounded by Gamkrelidze and Ivanov, several seem to stand out as especially damaging. The first concerns the suggestion by Gamkrelidze and Ivanov that PIE stops had phonetically but not phonemically relevant aspiration, especially in the voiced series. If this suggestion has any analytical validity at all, it forces a dialectal distribution of aspiration in the descendant groups (e.g. in Greek and Indo-Iranian) which does not strongly parallel other dialectal isoglosses. Projecting Grassmann's Law back into PIE, with dialectally determined distribution of allophones, entails serious methodological consequences for the theory, and for the form of PIE. As Joseph and Wallace point out (1994), Gamkrelidze and Ivanov's rule for dissimilating aspirates predicts phonological developments in the Italic languages which are not borne out by the evidence. The traditional model, with voiced aspirates and plain voiceless stops, avoids this problem entirely by restricting Grassmann's Law to Greek and Indic.

A second area in which the glottalic theory fails in comparison to the traditional theory is in the complexity required to establish the development of the PIE system into the daughter languages. This is a serious problem in the sense that economy of description plays such an important role in the establishment of a superior theory. The traditional model views Germanic and Armenian as phonological outliers with their own special sound shifts (parallel or not), and the remaining nine branches as fairly regular in their development from PIE. The glottalic model, on the other hand, forces detailed sound shifts in all IE branches other than Germanic and Armenian.

A third, particularly difficult problem for this framework is accounting for the widespread change of glottalic consonant to plain voiced stop, a controversial phonetic claim (see however Vennemann 1984).

Finally, the typological advantages of the glottalic system over the traditional system, especially as concerns the proto-segment **b* (**p'*) have been carefully scrutinized by Woodhouse (1995), who concludes, for example, that there are many languages in the world in which *b* is a rare phoneme, and that the difficulties encountered in reconstructing a **b* for PIE are insufficient to force the postulation of the glottalic **p'* in its place. See also Ringe (1996): 3, who after an incisive review condemns the theory as "a monumental error".

Despite these difficulties, some aspects of the glottalic theory have certain theo-

16 The development of a separate series of voiceless aspirates in Sanskrit is facilitated by the borrowing of a large number of words with voiceless stops, as well as the development of voiceless aspirates when plain voiceless stops come in contact with a following laryngeal.

17 Including that of the present author—see Baldi—Johnson-Staver (1989), Baldi (1991).

retical advantages over the traditional theory and have generated several strong solutions to specific problems, such as Vennemann's (1984) account of the Germanic consonant shift, Kortlandt's account of Balto-Slavic accentuation (1988), and Kortlandt's (1989) and Baldi's (1991) accounts of Lachmann's Law in Latin. And the fact remains that the traditional theory has some unresolved problems, especially the issue of **b*,[18] for which the glottalic theory has provided a reasonable solution. However, despite these and a few other problem areas for which this theory seems to provide a sensible account, the conclusion at this point is that the traditional theory still provides the strongest account of the most data.

For a discussion of many of the wider issues surrounding PIE phonological structure, see Szemerényi (1985, 1996), Cowgill—Mayrhofer (1986), Lehmann (1993), Watkins (1993), Beekes (1995), and Sihler (1995).

2.1.3. The phonological system of PIE

Table 2.8 represents the reconstructed system adopted in this volume. It is characteristic of late or "classical" PIE.

Notes

1. The actual phonetics of the voiced aspirates is a matter of controversy. There is some reason to believe that they were not aspirated, but were rather murmured. See Hopper (1973), McCarthy (1988).

2. Voiceless aspirated stops (**p*^{h}, **t*^{h}, **k*^{h}) functioned marginally as "ideophones" in PIE, that is, as expressive sounds which marked certain emotive words; they are not included in the PIE phonemic inventory. Examples such as **k*^{h}*ak*^{h}*a-* 'laugh' (Skt. *kákhati* 'X laughs' < **khákhati*, Gk. καχάζω 'I laugh' < **χαχάζω*, Lat. *cachinnō*), **p*^{h}*u-* 'blow' (Skt. *phŭt-karóti* 'X blows', Gk. φῦσα 'bellows'), and **sp*^{h}*ereg-* 'swell, burst, scatter' (Gk. σφριγάω 'I am full to bursting') illustrate this phenomenon. Apart from these few, most examples of voiceless aspirated stops in the various descendant languages can be shown to have developed from one or more of the following sources: original voiced aspirated stops (as in Greek); the combination of plain voiceless stop followed by a laryngeal (as in Sanskrit); borrowing (as in Latin).

3. It is debated whether both palatals (palatovelars) and plain velars existed in PIE alongside the labiovelars. Arguments for the three-velar series of plain velar (e.g. **k*), palatal (e.g. **ḱ*), and labiovelar (e.g. **k*$^{\mu}$) are based on the distribution of these sounds in the IE languages. (Voiceless **ḱ*, **k*, and **k*$^{\mu}$ represent all velars in what follows.) Normally, plain velars (e.g. *k*) in one group, the so-called "centum" languages, are in a systematic correspondence with sibilant sounds (e.g. *ś*) in another group, the so-called "satem" languages. And there is another correspondence, namely that labiovelars (e.g. *k*$^{\mu}$) in the centum group correspond to plain

18 Sihler (1995: 146–147) provides arguments that pre-PIE **b* merged with **μ*.

Table 2.8. The phonological system of PIE

Consonants				
Stops	Voiceless		Voiced	Voiced Aspirated
Labials	p		(b)	b^h
Dentals	t		d	d^h
Velars	k		g	g^h
Labiovelars	k^w		g^w	g^{wh}
Fricative	s			
Laryngeals	h_1	h_2	h_3	
Resonants				
Semivowels	i̯/i	u̯/u		
Nasals	m/m̥	n/n̥		
Liquids	l/l̥	r/r̥		
Vowels and Diphthongs				
	e		o	ē ō
		a		ā
	ei		oi	eu ou
		ai		au

velars (e.g. *k*) in the satem group. If this were all there was to it, it would be simple to reconstruct a two-way velar series for PIE, namely **k* and **k*^{w}, and to postulate a shift in which plain velars became sibilants and labiovelars became plain velars in the satem languages, while plain velars and labiovelars remained in the centum languages, resulting in the "centum–satem" division (see below and 1.6.13). This picture is disturbed, however, by occasional correspondences of plain velar to plain velar sounds in both groups where plain velar to sibilant would be expected: cf. Lat. *cruor* 'blood': Lith. *kraũjas* (not **šraũjas*), Skt. *kravís-* 'gore' (not **śravís-*) < **kreuh*$_2$-, as opposed to Lat. *centum* '100': Lith. *šimtas* (not **kimtas*), Skt. *śatám* (not **katám*) < traditionally reconstructed **(d)ḱm̥tom*. This third set of correspondences suggests the existence of three series in the protolanguage, viz. **ḱ*, **k*, and **k*^{w}, with the following development: the PIE palatals and plain velars merge in the centum languages, and the PIE plain velars and labiovelars merge in the satem languages. By this account, the PIE plain velar **k* is statistically and linguistically marked in relation to the other two.

PIE	Centum	Satem
*ḱ	k	š
*k	k	k
*k^{w}	k^{w}	k

The only languages which show strong evidence for all three velar series are Luwian and Lycian (see Melchert 1987, 1994), though there have been similar claims about Albanian as well (reviewed in D. Adams 1995). But there are several arguments against a three-way stop series for PIE. First is the typological oddity of a system with a marginalized plain velar **k*, when *k* is by all accounts a frequent and well-integrated phoneme in the languages of the world. Second, a three-way stop series would be rare among the languages of the world, the evidence of Albanian, Luwian, and Lycian notwithstanding. Third, a phonetic account which argues for a fronting of the PIE series **k* (> *ś*) and **k^{w}* (> *k*) in the satem languages except in a few phonetic environments (before **r* and **a* and after **u*) will generate most of the correspondences which occur. The existence of a handful of further exceptions cannot outweigh the structural and phonetic evidence against a three-way series and in favor of a two-way series, namely plain velar (**k*) and labiovelar (**k^{w}*). Thus a separate series of palatals is not included in PIE reconstructions in this volume. For further discussion, see Meillet (1937), Lehmann (1993: 100–101), Beekes (1995: 109–113), and Sihler (1995: 151–156).

4. Three laryngeals **h$_1$*, **h$_2$*, **h$_3$* are adopted (cf. Beekes 1995), though reconstructions with more, fewer, or even no laryngeals have been proposed.[19] The symbol *H* in a reconstruction represents any unspecified laryngeal.

5. It is traditional to separate the resonants in terms of their consonantal variants (**l*, **r*, **m*, **n*, **i̯*, and **u̯*) and their syllabic or vocalic variants (**l̥*, **m̥*, **n̥*, **r̥*, **i*, and **u*). Such a separation seems to imply independent phonemic status for each. This is not the case, however. The consonantal and syllabic realizations of the resonants in PIE are in a complementary distribution according to which the occurrence of one or the other can be predicted by phonetic environment. Thus each pair constitutes a phoneme with allophonic variants. The distribution is determined mainly by Sievers' Law, which has been explicitly worked out by Edgerton (1934, 1943, 1962); see also the discussion in Seebold (1972), Collinge (1985: 159–174), Lehmann 1993: 103–107, Beekes (1995: 136–137), and Sihler (1995: 90–101). Basically, the consonantal variant (**l*, **r*, **m*, **n*, **i̯*, and **u̯*) occurs adjacent to a vowel and as a result of ablaut, while the syllabic variant (**l̥*, **m̥*, **n̥*, **r̥*, **i*, and **u*) occurs elsewhere. The reconstructed word for '100' **(d)km̥tom* illustrates the distribution, with **m̥* between the **k* and **t*, and **m* after the vowel **o*.

Given their distributional status as allophones, and to avoid visual confusion, **i/i̯* and **u/u̯* are represented in this volume in their vocalic forms **i* and **u*, though they can be just as easily considered as consonants; and **m/m̥*, **n/n̥*, **l/l̥*, and **r/r̥* are represented in their consonantal forms **m*, **n*, **l*, and **r*, though they can be just as easily considered as vowels. Further marking is unnecessary unless phonetic detail is being highlighted. PIE can thus be thought of as a system with three qualitatively different vowels (**e*, **o*, **a*) and two other vowels which are variants of semivowel phonemes (**i*, **u*).

6. The status of the phoneme **a* in PIE is a matter of some debate. There have

19 The issues are reviewed extensively in Bammesberger (1988). See Schmalstieg (1989) for suggestions that a series of monophthongizations led to the lengthened vowels which are usually ascribed to the action of laryngeals.

been analyses of the phonological system of PIE in which **a* has been eliminated as an independently occurring segment (see Kuryłowicz 1956, Lubotsky 1989, Beekes 1995). In these accounts most instances of what have been traditionally reconstructed as **a* and **ā* have been reanalyzed as instances of laryngeal or laryngeal plus **e*, i.e. **h_2* > **a* and **eh_2* > **ā*. But both typological and comparative evidence suggest that **a* and **ā* had at least some independent status in the protolanguage, even if many of the attested *a*'s in the descendant languages can be shown on comparative grounds to have had a laryngeal source (for various arguments pro and con, see Schmitt-Brandt 1967, Wyatt 1970, Cowgill—Mayrhofer 1986: 170, Sihler 1995). There is good evidence that this vowel functioned independently, although marginally, in the proto-system, appearing in such roots as **g^hans-* 'goose', **kap-* 'grasp', **sal-* 'salt'; **gār-* 'make noise', and perhaps **mātēr* 'mother'. But its distribution was restricted: it did not occur in endings and suffixes, showed little ablaut, and generally is not found in the core IE vocabulary, 'mother' notwithstanding. It also appears sporadically as an "expressive vowel" which substituted for **e* and **o* under certain phonological conditions, in emotive words such as **k^hak^ha-* 'laugh' (Gk. καχάζω 'I laugh', Lat. *cachinnō*, Skt. *kákhati* 'X laughs'), in interjections such as **ā* 'ah' and **ai* 'ah', occasionally in words indicating frailty or infirmity, as seen in Lat. *cascus* 'old' (borrowed from Oscan), *flaccus* 'flabby', *mancus* 'lame', and elsewhere. Statistically, the vowel *a* occurs more commonly among the languages of the world than does either *e* or *o* (Maddieson 1984), making an **a*-less PIE unlikely. Nonetheless, its rarity in PIE is a typological oddity in itself.[20]

7. The long vowels **ē*, **ō*, and **ā* are marginal in the vocalic system, with a relatively small number of directly traceable examples. Most instances of long PIE vowels can be shown to result from the combination of short vowel **e*, **o*, and **a* plus a laryngeal. Furthermore, there are but a few examples of the PIE long vocalic allophones **ī* and **ū* which cannot be traced back to PIE short vowel plus laryngeal, i.e. **iH* or **uH*. If **ī* and **ū* existed at all, they generally merged with **iH* and **uH*, respectively. The status of the long vocalic segments **ī* and **ū* in PIE is related to the existence of long syllabic resonants such as **m̄*, **n̄*, **r̄*, and **l̄*, most of which can be analyzed as instances of short syllabic resonants which have been lengthened compensatorily by the loss of some following segment, typically a laryngeal: cf. **Hul̄$h_2$no-* 'wool' instead of **Hul̄no-*. Long syllabic **m̄*, **n̄*, **r̄*, and **l̄* are not included in reconstructions in this volume.

8. Some accounts of PIE phonological structure include a series of long diphthongs (**ēi*, **ōi*, **ēu*, **ōu*, **āi*, **āu*), for which the strongest evidence comes from Indo-Iranian, where **āi* and **āu* were kept distinct from **ai* and **au*. In most other IE languages, the long diphthongs were shortened and merged with the ordinary diphthongs (Osthoff's Law). Since most instances of long diphthongs can be shown to be of secondary origin, resulting from combinations in PIE of long vowel plus **i* or **u* (e.g. **ēi*), and since they play no role in the history of Latin, where they would have been shortened by regular rule in any case, long diphthongs are not included in the reconstruction of PIE adopted here.

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20 For a detailed discussion of Indo-European **a* from the perspective of Pre-IE hydronomy, see Vennemann 1994b, esp. 248–252.

Table 2.9. The development of the PIE phonological system in selected languages

PIE	Lat.	Gk.	Skt.	Goth.	Lith.
Voiceless stops					
p	p	p	p	f, b	p
t	t	t	t	þ, d	t
k	k	k	ś	h, g	š
k^{w}	qu, c	p, t, k	k, c	hw	k
Plain voiced stops					
b	b	b	b	p	b
d	d	d	d	t	d
g	g	g	j	k	ž
g^{w}	gu, g, v	b, d, g	g, j	q	g
Voiced aspirated stops					
b^{h}	f, b	ph	bh	b	b
d^{h}	f, d, b	th	dh	d	d
g^{h}	h, g	kh	h	g	ž
g^{wh}	gu, g, v, f	ph, th, kh	gh, h	g, gw, w	g
Fricative					
s	s, r	s, h, ø	s	s, z	s
Liquids and nasals (consonantal outcomes)					
r	r	r	r, l	r	r
l	l	l	l, r	l	l
m	m	m	m	m	m
n	n	n	n	n	n
Semivowels (consonantal outcomes)					
u̯	u (v)	w, h, ø	v	w	v
i̯	i (j)	z, h, ø	y	j	j
Short vowels					
e	e	e	a	i	e
o	o	o	a	a	a
a	a	a	a	a	a
Long vowels					
ē	ē	ē	ā	ē	ė
ō	ō	ō	ā	ō	uo, õ
ā	ā	ā, ē	ā	o	õ

Table 2.9. The development of the PIE phonological system in selected languages *(cont.)*

PIE	Lat.	Gk.	Skt.	Goth.	Lith.
Diphthongs					
ei	(ei), ī	ei	(ai), ē	ei (= ī)	ei, ie
oi	(oi, oe), ū	oi	(ai), ē	ai (prob. = ē)	ai, ie
ai	(ai), ae	ai	(ai), ē	ai (prob. = ē)	ai, ie
eu	(ou), ū	eu	(au), ō	iu	au
ou	(ou), ū	ou	(au), ō	au (prob. = ō)	au
au	au	au	(au), ō	au (prob. = ō)	au
Semivowels (Vocalic Outcomes)					
u	u	u	u	u	u
i	i	i	i	i	i
Liquids and Nasals (Syllabic Outcomes)					
r̥	or	ra	r̥	aur	ir, ur
l̥	ol	la	r̥	ul	il, ul
m̥	em	a	a	um	im, um
n̥	en	a	a	un	in, un
Laryngeals					
CHC	a	e, a, o	i	a, ø	ø
HC	ø	e, a, o	ø	ø	ø
h_1e	e	e	a	i	e
h_2e	a	a	a	a	a
h_3e	o	o	a	a	a
eh_1	ē	ē	ā	ē	ė
eh_2	ā	ā, ē	ā	ō	ō
eh_3	ō	ō	ā	ō	uo
iHC	ī	ī	ī	ei (= ī)	y
uHC	ū	ū	ū	ū	ū

The accompanying summary charts (table 2.9) show the canonical development of the PIE phonemes into several IE languages.

Notes

1. Secondary modifications obscure the development of the diphthongs and long vowels in Latin, making the outcomes noted in the table something of an idealization. In Latin, changes affecting short vowels generally involve quality, whereas those affecting long vowels and diphthongs typically involve quantity.

2. Diphthongal forms in parentheses in Latin indicate Old Latin representations, all of which can be found in the epigraphical record. The diphthongs show strong development toward monophthongs by the classical period.

3. Sanskrit diphthongal forms in parentheses represent a general Indo-Iranian

stage, still preserved in the Iranian branch. In Sanskrit, inherited diphthongs and those arising synchronically through the contact of initial and final vowels of adjacent words show a monophthongizing tendency: cf. *hitopadeśaḥ* 'welfare instruction' (the name of a collection of fables called the *Hitopadeśa*) < *hita* 'welfare' plus *upadeśa* 'instruction').

4. PIE *$\underline{i}$ has a $\emptyset$ realization in Latin between vowels. PIE *$\underline{i}$ develops as *z* or *h* in Greek initially before a vowel, and has a $\emptyset$ realization intervocalically. PIE *$\underline{u}$ is preserved in Mycenaean and some first-millennium dialects, is lost prehistorically in Attic-Ionic and Homer, and is lost gradually in many other dialects.

2.1.4. Accent

Because of the widely different accentual patterns found in the daughter languages, reconstructing the accent of PIE has proven difficult. Developments in all the descendant groups except possibly Baltic (especially Lithuanian) and Slavic (especially Russian and Serbo-Croatian) may be taken as innovative, with Sanskrit also providing critical evidence. Most modern accounts of PIE accent rely heavily on interpretations of accent in these languages.

The traditional view of PIE accent is that it is a pitch (musical) accent system. Every word (except clitics, which were unaccented) has one and only one accented syllable which receives high pitch accent. The accent is "free" in that it can fall on any syllable in a word, its specific position being conditioned by lexical and morphological considerations. Thus accent is one means of marking grammatical categories in PIE. For a parallel, cf. Eng. *rébel* (n.), *rebél* (v.); *cónflict* (n.), *conflíct* (v.).

Another view holds that PIE must have had a stress accent because of some effects that it has in PIE, such as zero-grade ablaut, as well as in various descendant languages, such as Germanic, where it is held to be responsible for Verner's Law, and Italic, where it apparently conditioned the widespread reduction of unstressed vowels.

According to Halle (1997), the PIE accent was much like that of modern Russian or Lithuanian in that the accent was a distinctive property of morphemes, and words without accent received initial stress. This "mobile" stress system is reflected in Baltic, Slavic, and Sanskrit and is further supported by "Verner's Law" (see below), which shows that at some point Germanic must have had the same mobile stress system as Sanskrit, Baltic, and Slavic.

Nouns can be organized into several different classes according to mobile accent patterns between the stem, a following suffix, and the ending, with accompanying vowel gradation. For example, some nouns (called "proterodynamic") occur in paradigms in which accent moves between the stem and the suffix, with the stem stressed in the strong cases (the nominative and accusative) and the suffix stressed in the weak cases; in another group ("hysterodynamic"), accent moves between the suffix and the ending (table 2.10); in "acrostatic" nouns, accent is inherent (lexical),

Table 2.10. A root/inflectional accent (hysterodynamic) noun ('foot')

	Gk.	Skt.
nom.	πούς	pā́t
acc.	πόδα	pā́dam
gen.	ποδός	padás (gen./abl.)
dat.	ποδί	padé
		padí (loc.)

Table 2.11. A root/inflectional accent verb ('turn')

Pres.	Perf.	Perf. Pl.	Part.	
Skt. 'turn'	vártāmi	vavárta	vavṛtimá	vṛtanáḥ
OE 'become'	weorþe	wearþ	wurdon	worden

with stress occurring on the stem in all cases. Other combinations are also possible (see Schindler 1975, Rix 1976a: 122–124, Sihler 1995: 278–279, Beekes 1995: 174–192, Halle 1997 for summaries). These patterns indicate an interaction between accent and case to mark grammatical function.

Similarly, some verbal forms are accented on roots, some on inflections (table 2.11). The Sanskrit pattern in 'turn' is thought to reflect the location of the accent in PIE. Germanic confirms this: though it has root-initial accent throughout, Germanic treated certain obstruent forms differently depending on whether the PIE accent originally preceded the sound in question, in which case it was realized as the voiceless *þ* in *weorþe*, *wearþ*; or whether it followed the sound in question, in which case it was realized as the voiced *ð* ⟨d⟩ in *wurdon*, *worden*. This Germanic pattern is codified in IE studies as "Verner's Law". The phonological evidence of Verner's Law confirms the reconstruction of the accent in accordance with the Sanskrit mobile pattern, as well as its morphological function of marking the singular and plural forms of the perfect.

2.1.5. Summary

The conflicting views on the phonological system of PIE are often notational, and the various systems generally make the same predictions. The differences may in fact reflect distinct chronological layers in the evolution of PIE (Ivanov 1965, Bomhard 1984). A uniform reconstruction of PIE may be impossible because some of the languages split off from PIE before others and consequently reflect different periods of PIE. This is especially true with Hittite, and possibly Germanic as well. The archaism of Hittite suggests that if not a "sister" of PIE, it is at least a "daughter" that split off from the parent language long before the latter started to disintegrate. (See Sturtevant (1962) and Cowgill (1975) for extended discussion of

archaism in Hittite, and its implications for the IE family tree.) The reconstructed system of table 2.8 with three series of stops, laryngeals, and a vowel system with contrastive length is probably characteristic of a later stage in the development of PIE, while systems with glottalics and a two- or three-vowel system may reflect an earlier stage of the protolanguage.

2.2. Morphology

The unevenness of historical records and huge chronological gaps among many of the IE languages (e.g. around 3,000 years between Hittite and Lithuanian) pose special problems for the reconstruction of the morphology of PIE. Given the large inventory of morphological (as opposed to phonological) elements in the reconstructed language, these problems are particularly acute. Many of the older, well-documented IE languages are marked by very complex morphologies. They have highly developed case systems in nouns, adjectives, and pronouns, as well as overtly marked person, gender, and number categories and fixed concord relations. In the verb they have elaborate systems of tense, voice, mood, and aspect, as well as number markers, morphologically marked agreement with subjects, and gender concord in some forms, all indicated by a variety of morphological formatives.

Many IE languages and language groups reflect such complex morphology to one degree or another, especially Italic, Greek, Indo-Iranian, Baltic, Slavic, Celtic, Armenian, and, in part, Tocharian, though much of the complexity of Tocharian morphology can be shown to be innovative. But some of the other languages for which adequate records exist, e.g. Hittite and Germanic (in the form of Gothic), show less morphological complexity, with fewer formal categories and distinctions.

In order to reconcile these different systems in a uniform reconstruction, the traditional strategy has been to reconstruct the largest composite system which the data allow, thereby endowing reconstructed PIE with all the features of the attested languages. Under this approach, when an individual IE language does not show a particular feature, it is assumed that the feature has been lost, or that it has merged with some other feature, that is, the system has been simplified. The resulting over-differentiated proto-systems reflect a methodological preference for rules of loss or deletion from structurally complex forms, as against rules of accretion or addition from simple forms. It is methodologically easier to assume a general tendency toward structural simplification than one in the direction of elaboration. However, the intricate morphological systems of Indo-Iranian, Greek, Italic, Baltic, and Slavic are the result of many structural transformations. There is no reason to assume that PIE emerged in morphologically detailed form without external influences or internal evolution. Reconstructed PIE should not be considered a static entity, uniform and dialect-free, which existed at a certain time in a single place before it began to disintegrate. This language was itself the product of millennia of evolution during

which an uneven pattern of morphological development took place. Reconstruction, however, requires a certain idealization of the data such that attention can be focused on the establishment of a consistent system for some stage of the protolanguage. The PIE which is outlined in the sketch that follows has features which are generally typical of late or "classical" PIE.[21]

2.2.1. Nominal and pronominal morphology

Classical PIE is considered to be an inflectional (fusional) language which uses case markers to indicate grammatical relations between nominal elements and other words in a sentence, and to indicate gender and number agreement among words in phrases. Of all the IE languages, Sanskrit has the most detailed nominal morphology.[22] It has eight cases (nominative, vocative, accusative, genitive, ablative, dative, locative, and instrumental), three genders (masculine, feminine, and neuter), and three numbers (singular, plural, and dual). No other IE language displays such complexity in the nominal system: Old Church Slavic, Lithuanian, and (by some accounts) Old Armenian have seven cases, Latin has six, with residual evidence of a seventh (the locative), and Hittite has six.[23] But Greek, Old Irish, and Albanian have only five, and Gothic has only four. In gender categories, most of the groups have the three mentioned above, but Hittite and a few others have no such system, nor is there conclusive evidence that they ever did (Hittite, for example, distinguishes animate from inanimate objects but does not distinguish masculine from feminine). The same pattern holds with number. Indo-Iranian, Greek, Baltic, Slavic, Tocharian, and Celtic, for example, show a three-way singular/plural/dual distinction, a pattern with identifiable relics in Germanic, Latin, and Armenian. It is an open question whether these categories were lost in the other IE groups in which they are absent (e.g. Hittite), or whether they never developed in those languages at all.

In traditionally reconstructed PIE, nouns and adjectives are inflected in three gen-

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21 Much has been written about the prehistory of PIE morphological structure. The inflectional type represented in this sketch is characteristic of late PIE, but it is most likely not the original morphosyntactic type of the early language. Arguments have been made for an ergative PIE, a nominative/accusative PIE, as well as for a much earlier agglutinative or purely analytical type. For a review of the issues, with different proposals, see Lehmann (1993: 213–215), Kurzová (1993: 15–104), and Gamkrelidze—Ivanov (1995: 233–276).

22 Tocharian actually has more cases than Sanskrit, but many of these cases are not inherited and are easily shown to be the result of morphological splits within Tocharian formed by the addition of affixes or postpositions to an "oblique" stem.

23 Actually, Hittite can be analyzed with as many as eight or as few as four cases, depending on how the distribution and syncretization of singular and plural forms are analyzed (see Lehmann 1993: 210–211).

Table 2.12. Reconstructed case endings

	Sg.	Pl.
nom.	-s, -ø	-es
voc.	-ø	-es
acc.	-m, -ø	-ns, -h_2
gen.	-s, -os, -es, -ī, -osio	-ŏm
dat.	-(e)i	-b^hos, -mos
abl.	-s, -os, -es, -ōt	-b^hos, -mos
loc.	-i, ø	-su
instr.	-(e)h_1, -b^hi, -mi	-b^hi(s), -mĭ(s)

ders, three numbers, and eight cases, though it is now generally agreed that the feminine gender is a late development and was not present in the earlier language. A comparison of the various languages leads to the reconstruction of case endings seen in table 2.12. These endings represent a set of possibilities for the late PIE noun; no single noun or inflectional group reflects them all, and individual languages show variations which are not reflected in this chart (after Beekes 1995: 173, Sihler 1995: 248, with modifications).[24]

The noun in PIE is structured according to the following pattern: a root, which carries the basic lexical meaning; plus a theme vowel (potentially ø) known as a stem marker, which indicates morphological class; plus an ending, which carries information concerning number and syntactic function. Thus a word like Lat. nom. sg. masc. *lupus* (OLat. *lupos*) 'wolf' reflects the morphological configuration *lup* + *o* + *s*. There are consonantal and vocalic stem nouns. Some examples of consonantal stems are: **ped-/pod-* 'foot': Skt. *pā́t*, Gk. (gen.) ποδ-ός, Lat. (gen.) *ped-is*; **$h_1$dont-/$h_1$dent-* 'tooth' (see table 2.13): Skt. *dántaḥ*, Gk. (gen.) ὀδόντ-ος, Lat. (gen.) *dent-is*; **d^heg^hōm* 'terrestrial': Hitt. *tēkan-*, Gk. χθών 'earth'; Lat. *homō* 'human being'; **mātēr* 'mother': Skt. *mātā́*, Gk. μήτηρ, Lat. *māter*; **genh$_1$-es-* 'race': Skt. (gen.) *jánas-aḥ*, Gk. (gen.) γένε-ος, Lat. (gen.) *gener-is*; **g^heim-* 'winter': Av. *zyå*, Arm. *jiwn*, Lat. *hiems*, Gk. χιών; and **potis* 'powerful': Skt. *pátiḥ*, Lat. *potis*, Gk. πόσις 'husband'. Examples of some vocalic stems are the *o*-stems **ulk^{w}os* 'wolf': Skt. *vṛ́kaḥ*, Gk. λύκος, Lat. *lupus*; and **$h_1$ekuo-* 'horse': Skt. *áśvaḥ*, OLat. *equos*, Toch. B *yakwe*, OLith. *ešvà*, *ašvà* 'mare'.

The PIE adjective follows the same declensional pattern as the noun. Adjectives are inflected for gender, number, and case, in concord with the nouns which they modify. Some adjectives are inflected in masculine, feminine, and neuter according to masc. *o*-stem, fem. *eh*$_2$-stem, and neut. *-om* patterns, as in **neuos*, **neueh*$_2$, **neuom* 'new': cf. Skt. *návaḥ*, *návā*, *návam*, Gk. νέ(Ϝ)ος, νέ(Ϝ)α, νέ(Ϝ)ον, Lat.

24 A more detailed account of PIE morphology is provided in chap. 7. Because of the paucity of firm evidence for the dual and the fact that it has no systematic representation in Latin, this category is not presented in table 2.12. For a slightly different view of the reconstructed case system, see Lehmann (1993: 145).

Table 2.13. Examples of noun inflection: *$*h_1dont$-/h_1dent-* 'tooth'

	Skt.	Gk.	Lat.	Goth.	Lith.	PIE
Sg.						
nom.	dán	ὀδών	dēns	*tunþus	dantìs	*$h_1$donts
voc.	dan	ὀδών	dēns	*tunþu	dantiẽ	*$h_1$dont
acc.	dántam	ὀδόντα	dentem	tunþu	dañtį	*$h_1$dontm
gen.	datáḥ	ὀδόντος	dentis	*tunþáus	dantiẽs	*$h_1$dntos
dat.	daté	ὀδόντι	dentī	tunþáu	dañčiui	*$h_1$dntei
abl.	datáḥ		dente			*$h_1$dntos
loc.	datí				dantyjè	*$h_1$dnti
instr.	datấ				dantimì	*$h_1$dnteh$_1$
Pl.						
nom.	dántaḥ	ὀδόντες	dentēs	*tunþjus	dañtys	*$h_1$dontes
voc.	dántaḥ	ὀδόντες	dentēs	*tunþjus	dañtys	*$h_1$dontes
acc.	datáḥ	ὀδόντας	dentēs	tunþuns	dantìs	*$h_1$dontns
gen.	datấm	ὀδόντων	dentium	tunþiwē	dantų̃	*$h_1$dntom
dat.	dadbhyáḥ	ὀδοῦσι	dentibus	tunþum	dantìms	*$h_1$dntb^{h}os
abl.	dadbhyáḥ		dentibus			*$h_1$dntb^{h}os
loc.	datsú				dantysè	*$h_1$dntsu
instr.	dadbhíḥ				dantimìs	*$h_1$dntb^{h}is

novus, nova, novum, OCS *novŭ, novo, nova*. Other adjectival forms have identical masculine and feminine forms, but separate neuter (cf. Lat. *facilis, facile* 'easy'), and still others have all three identical in some cases (cf. Lat. *audāx* 'bold').

Some but not all of the IE languages show a fairly regular pattern of adjectival comparison, with adjectives represented in the three degrees of positive, comparative, and superlative, as in English *tall, taller, tallest*. Comparative forms are most likely originally intensives and are typically derived from positive forms through the suffixation of **-ies-/-ios-*: cf. Lat. *senior* 'older' (*senex*), Skt. *sányaḥ* (*sána-*), and with **-(t)ero-*: cf. Gk. πονηρότερος 'more wicked' (πονηρός). Superlatives (originally absolutives) are often found with the suffixes **-is-to-*, **-so-mo-*, **-to-mo-*, and a few others. Some examples with **-is-to-* are Gk. κάκιστος 'worst' (κακός), Goth. *managists* 'greatest' (*manags*), and Skt. *náviṣṭhaḥ* 'newest' (*náva-*). Examples with **-so-mo-* are Lat. *maximus* 'greatest' (*magnus*) and OIr. *nessam* 'next'. An example with **-to-mo-* is Lat. *pessimus* 'worst' (*peior* 'worse' < **ped-ior*). Adjectival comparison is occasionally carried out with suppletive forms, as evidenced by Lat. *bonus, melior, optimus* 'good, better, best'. The apparent archaism of such suppletive forms has led some scholars to suggest that regular adjectival comparison was not a feature of early PIE, but something that developed later in the classical stage of the language.

PIE distinguishes many different types of pronouns. Pronouns follow the same general inflectional patterns as nouns, though they have their own set of endings for

Table 2.14. Examples of personal pronoun inflection[a]

	Skt.	Gk.	Lat.	Hitt.	Goth.	OCS	PIE
I, me							
nom.	ahám	ἐγώ	ego	uk	ik	azŭ	*$h_1$egoH, *$h_1$egHom
acc.	mā́m (mā)	ἐμέ (με)	mē	ammuk	mik	mene (mę)	*$h_1$me
gen.	máma (me)	ἐμοῦ (μου)	meī	ammēl	meina	mene	*$h_1$mene (*$h_1$mei)
dat.	máhyam (me)	ἐμοί (μοι)	mihī	ammuk	mis	mĭně (mi)	*$h_1$meg^{h}io (*$h_1$mei, *$h_1$moi)
abl.	mat		mē(d)	ammēdaz			*$h_1$met
loc. instr.	máyi máyā			ammuk		mĭně mŭnojǫ	
you (sg.)							
nom.	tvám	σύ	tū	zik	þu	ty	*tuH
acc.	tvā́m (tvā)	σέ (σε)	tē	tuk	þuk	tebe (tę)	*tue (*te)
gen.	táva (te)	σοῦ (σου)	tuī	tuēl	þeina	tebe	*teue (*tei)
dat.	túbhyam (te)	σοί (σοι)	tibī	tuk	þus	tebě (ti)	*teb^{h}io (*tei, *toi)
abl.	tvát		tē(d)	tuēdaz			*tuet
loc. instr.	tvé, tváyi tvā́, tváyā			tuk		tebě tobojǫ	

a Forms in parentheses are enclitic (unaccented) variants.

many of the case forms, except personal pronouns, which are almost entirely different from nouns. In addition to the first and second person personal pronouns (table 2.14) *$h_1$egoH/$h_1$egHom 'I', *uei(s) 'we', *tuH 'you sg.', and *iuH(s), 'you pl.', PIE also has gender-marked demonstrative pronouns with the forms *so, *seh$_2$, *tod and *$h_1$is, *$h_1$ih$_2$, *$h_1$id. These demonstratives also serve the function of third person (anaphoric) pronouns in many of the IE languages, indicating a person or thing previously mentioned or already known from context. The first of these is represented in Skt. (unchanged form) *sás, sā́, tát*, Goth. *sa, sō, þata*, OE *se, sēo, þæt*, and Gk. ὁ, ἡ, τό. The latter PIE demonstrative forms are represented in Lat. *is, ea, id* and in various forms in Sanskrit and Germanic such as Skt. nom./acc. sg. neut. *idám*, acc. sg. masc. *im-ám*, fem. *im-ā́m*, and Goth. acc. sg. *in-a*, nom. pl. masc. *eis*, acc. pl. *ins*. There are also pronouns, the forms of which are difficult to establish for PIE, which indicate objects which are close to the speaker (Hitt. *kaš*, Lith. *šis*, OCS *sĭ*, Arm. *ay-s* 'this one here', Lat. *ci-trā* 'on this side', OIr. *cé*). Additionally, there

Table 2.15. The indefinite/interrogative *$k^{\mu}e$-/$k^{\mu}i$-

	sg. masc./fem.		neut.	pl. masc./fem.		neut.
nom.	$k^{\mu}e$-, $k^{\mu}is$		$k^{\mu}id$	$k^{\mu}eies$		$k^{\mu}ih_2$
acc.	$k^{\mu}im$		$k^{\mu}id$	$k^{\mu}ins$		$k^{\mu}ih_2$
gen.		$k^{\mu}esio$			$k^{\mu}eisom$	
dat.		$k^{\mu}esmei$			$k^{\mu}eib^{h}os$	
abl.		$k^{\mu}et$			$k^{\mu}eib^{h}os$	
loc.		$k^{\mu}esmi$			$k^{\mu}eisu$	
instr.	$k^{\mu}ei$		$k^{\mu}ih_2$		$k^{\mu}eib^{h}is$	

are pronouns indicating objects which are at some distance from the speaker. These come in many different forms in PIE, including Skt. *asāú*, Av. *hāu*, OCS *onŭ*, Arm. *ayn*, OHG *jenēr* 'that one there'; Lat. *ille* 'that one', Lat. *ul-trā* 'beyond', OIr. *t-all*, and various words for 'other' such as Lat. *alius*, Goth. *aljis*, and Arm. *ayl*.

Interrogative and relative pronouns are also well represented, though it is not possible to reconstruct a single, unique form for the relative. From a PIE *$k^{\mu}e$-/$k^{\mu}i$- (table 2.15) and the variant *$k^{\mu}o$-, which have either interrogative or indefinite meaning, come Lat. *quis*, *quid*, and *quod*, Gk. τίς, τί, Hitt. *kuiš*, *kuit*, Skt. (unchanged form) *kás*, *kắ*, *kim*, and a number of variants of this stem. In Italic, Tocharian, Hittite, and Celtic this root also functions as a relative pronoun (as does Eng. *who*, though this is a late innovation). In Indo-Iranian, Greek, and Slavic, a different form **ios*, **ieh₂*, **iod*, originally a demonstrative pronoun, serves the relative function (cf. Skt. (unchanged form) *yás*, *yắ*, *yát*, OCS *je*-, Gk. ὅς, ἥ, ὅ). There is also a recoverable reflexive form **se*- for the later language (e.g. OCS *sę*, Lat. *sē*, Goth. *si-k*) which applies to all persons and numbers, though perhaps not originally (Szemerényi 1977: 45). The functions of this pronoun were carried by the middle voice in earlier stages of PIE.

2.2.2. *Verb morphology*

The analysis and reconstruction of the PIE verb presents many of the same problems as the noun, with the various daughter languages exhibiting wide variation in formal categories and inflectional complexity. Some of the ancient classical languages, especially Greek, Latin, and Sanskrit, have highly diversified formal structure characterized by intricate relations of tense, mood, voice, and aspect. Others, like Hittite and Gothic, have fairly simple systems with relatively few morphological distinctions. Formal complexity is evident from table 2.16.

As with the noun, there are several paths to a reconstructed system. An elaborate PIE system can be proposed, with losses and syncretisms in systems like those of Hittite and Gothic; or a simple PIE system can be proposed, with additive develop-

Table 2.16. Verbal categories in selected IE languages

	Voices	Moods	Tenses
Greek	3	4	7
Sanskrit	3	5	6
Hittite	2	2	2
Gothic	2	3	2
Latin	3	3	6

ments in systems like those of Greek, Sanskrit, and Latin; or it can be argued that the different systems reflect different periods of development and separation from the parent language. The final alternative in effect prohibits the reconstruction of a single, uniform system which underlies all the attested languages.

The reconstruction of the late PIE verbal system posits two voices, active and middle (also called mediopassive), which derive from an earlier active/non-active system (discussed in chap. 7; see Kurzová 1993, Gamkrelidze—Ivanov 1995); four moods, indicative, optative, subjunctive, and imperative, though only the indicative and imperative seem likely for the early language; from two to six tenses, with two, past and non-past, most likely for the early language, the others developing later; and three aspectual distinctions, perfective, imperfective, and aorist. Verbs can be transitive or intransitive. Additionally, there are person and number distinctions marked by suffixes, and a large number of derivational formatives by which further categories are formed.

PIE verbal categories can be characterized as follows:

Voice refers to the relationship of the subject to the activity defined by the verb, i.e. whether the subject is agent, patient, or in some other thematic relationship to the verb such as experiencer, goal, or beneficiary. The conventional view is that late PIE distinguished two voices, active and middle. An active verb is one in which the subject is typically the agent but is not directly affected by the action (e.g. Gk. ὁ παῖς τιμᾷ τόν γέροντα 'the boy honors the old man', Skt. *yájati* 'X makes a sacrifice'). When a verb is in the active voice, the action being identified is external to the subject. The middle is an archaic category from which the passive developed. When the subject of the verb is patient or beneficiary, the verb is in the middle voice (e.g. Gk. ὁ παῖς λούεται 'the boy washes (himself)', Skt. *yájate* 'X makes a sacrifice', with the fruit of the action accruing to the agent). However, when the subject of the verb is the patient or beneficiary, but there is an external agent, the verb is in the passive voice (e.g., Gk. ὁ παῖς λούεται ὑπὸ τῆς μητρός 'the boy is washed by his mother', Lat. *puella amātur ā patre* 'the girl is loved by the father'). In the passive and middle voices, the action identified by the verb is internal to the subject. In general, the various IE languages generalized either the original middle or the later passive function from the PIE middle. For example, in Sanskrit the middle function is unmarked. In Greek the middle and passive are morphologically identical in all but the aorist and the future, with the middle unmarked. Italic and Celtic show

mostly passive use, though there is ample evidence of the middle in deponent verbs like Lat. *sequor* 'I follow', which derives from a root **sek^{u}-* with the original meaning 'to see': cf. Skt. *sáce* 'I follow', Goth. *saíhvan* 'to see', Hitt. *šakuwa* 'eyes' (Baldi 1974). The middle use is discernible as well in morphologically though not semantically middle forms such as Lat. *loquitur* 'X speaks', OIr. *-labrathar* 'who speaks', and in verbs such as Lat. *armantur* 'they arm (themselves)', Lat. *congreguntur* 'they gather (themselves)', and others. Germanic has no productive middle continuing the PIE category but does have a passive, as evidenced by Gothic (cf. *háitada* 'I am named'). In Hittite the middle function is the unmarked one.

Mood refers to the speaker's attitude or position toward the factual content of the utterance, i.e. whether he/she considers it a fact, a possibility, a wish, a command, etc. As mentioned, there were probably four moods in late PIE: indicative, subjunctive, optative, and imperative. With the indicative mood the speaker presents a statement as fact, as an assertion of direct personal knowledge. The indicative is sometimes marked by a vowel suffix (thematic class) and sometimes not (athematic class), e.g. Skt. *rud-á-ti* 'X cries', Lat. *rud-i-t* (thematic); Skt. *ás-ti* 'X is', Lat. *es-t* (athematic). The subjunctive asserts no direct knowledge on the part of the speaker and is commonly used to express doubt, conditionality, exhortation, or futurity. It is formed from the *e*-grade of the root, followed by the regular thematic vowel and some combination of primary and secondary verbal endings.[25] Some examples are the Latin futures *erō* 'I will be' (< **h$_1$esoh$_2$*), *ferēs* 'you will carry' (< **b^{h}erēsi*), which continue the PIE subjunctive. The optative mood is used when the speaker expresses a statement as a wish or desire. It is marked by the suffix **-ieh$_1$/-ih$_1$* seen in OLat. (subj.) *siet* 'let X be', Gk. εἴη, Skt. *syā́t* (< **h$_1$sieh$_1$t*). The imperative is used when the speaker is expressing a desire for someone else to carry out some action, i.e. a command. It is formed from the bare verbal stem, without a mood-marking vowel as with the other three moods. Imperatives are most common in the second person, though they are also found in the first and third. Examples are (2nd pers.) Gk. φέρε, Skt. *bhára*, Lat. *fer* (sg.) from **b^{h}ere*, and φέρετε, *bhárata*, *ferte* (pl.) from **b^{h}erete* 'carry'. There are several other imperative suffixes as well. A fifth modal category, the injunctive, is a category found primarily in Indo-Iranian and in Homeric Greek. The injunctive is an unmarked verbal form (i.e. it was marked for person and voice only, and not for tense or mood) used in general expressions like "the earth is round", or when tense or mood is already understood from context, as with the Sanskrit prohibitive particle *mā* 'don't'. The injunctive has secondary endings but lacks the augment. Noticeably absent in this array of moods is a special interrogative mood in the verb.

Tense is a grammatical category locating a state of affairs in time, usually with respect to the moment of speaking; **Aspect** refers to the duration or type of temporal activity marked by the verb but makes no reference to time itself. Aspect rather

25 Different gradations of roots and distinctions between primary and secondary endings are discussed below.

Table 2.17. Selected verbal endings

	Primary 'carry' (pres.)	Secondary 'was' (imperf.)
1st sg.	*-mi (Skt. bhárāmi)	*-m (Lat. eram)
2nd sg.	*-si (Skt. bhárasi)	*-s (Lat. erās)
3rd sg.	*-ti (Skt. bhárati)	*-t (Lat. erat)
3rd pl.	*-nti (Skt. bháranti)	*-nt (Lat. erant)

refers to the internal structure of situations and actions, e.g. completed, non-completed, momentary, continuous, iterative, etc. The original PIE verb was based on aspectual rather than temporal relations. The aspectual system, however, which is represented by different verbal stems in PIE, developed into a tense-based system in many of the IE languages. Three verbal stems are normally identified, viz. the present, the perfect, and the aorist. The present (imperfective aspect) identifies repeated and continuing actions, or actions going on in the present: Lat. *sum* 'I am', Gk. εἰμί, Skt. *ásmi*, or Lat. *fert* 'X carries', Gk. φέρει, Skt. *bhárati*. The perfect (perfective aspect) stem describes some accomplished process or state pertaining to the subject of the verb. Examples are Skt. *véda* 'I know', Gk. οἶδα, Goth. *wáit*, all attesting the PIE stative verb **uoid-/uid-* 'know'. Finally, the aorist (punctual aspect) stem marks processes without reference to their duration, e.g. Gk. ἔγνων 'I recognized', Skt. *ádāt* 'X gave', Gk. ἔδειξε 'X showed', Skt. *ánāiṣam* 'I led'.

The exact internal structure of the various tense/aspect systems is extremely complicated. A variety of formal types exists, including stems characterized by ablaut, reduplication, prefixation (augment), infixation, and a number of derivational suffixes.

Verbs can be **transitive** or **intransitive**. Transitive verbs are ones in which, ideally, there are two participants, one in a subject-type role and one in an object-type role. Intransitive verbs, on the other hand, have only the subject participant.

In addition to the tense/aspect, voice, and mood categories, the PIE verb carried a set of endings at the end of the verbal structure to index first, second, or third person and singular, plural, or dual number. **Person** refers to the identification of the participants in a verbal activity, whether the speaker (first), the addressee (second), or some other individual (third), while **Number** refers to the number of entities expressed in the subject, namely singular, plural, or dual. There are different sets of endings for different voices, tense stems, and moods. The principal endings, called "primary" and "secondary", are largely identical to each other except for the final *-*i*, which is an earlier temporal particle (table 2.17). The primary and secondary endings were originally used with specific tenses and moods.

In PIE, pronominal subjects are not obligatorily expressed. In this respect PIE contrasts with languages like English or French, in which a subject must be overtly expressed (cf. *he goes*, but †*goes*; Fr. *il va*, but †*va*). Information concerning the person and number of the subject in PIE is expressed through agreement morphology, as represented by Lat. *i-t* 'X goes', Gk. εἶ-σι, Skt. *é-ti*.

The overall structure of the late PIE verb can be schematized as in figure 2.1.[26]

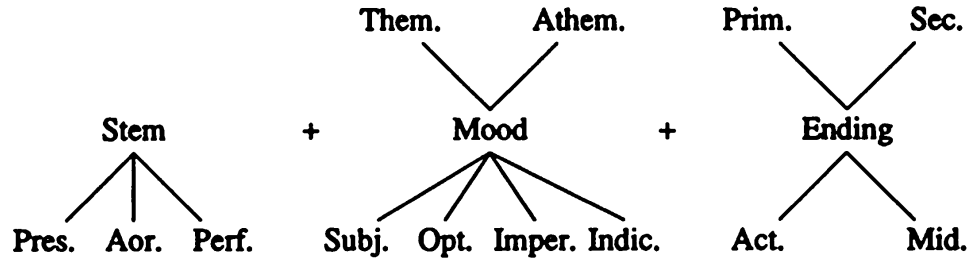

Figure 2.1. The structure of the late Indo-European verb

A few examples; see also tables 2.18, 2.19.

Lat.	am ā s	'you love'	(Pres. indic. 2nd pers. sg. act.)
	am ē s	'you might love'	(Pres. subj. 2nd pers. sg. act.)
	am ā ris	'you are loved'	(Pres. indic. 2nd pers. sg. pass.)
	am ē ris	'you might be loved'	(Pres. subj. 2nd pers. sg. pass.)
Gk.	παιδεύ ει ς	'you teach'	(Pres. indic. 2nd pers. sg. act.)
	παιδεύ η ς	'if, whenever you teach'	(Pres. subj. 2nd pers. sg. act.)
	παιδεύ οι ς	'may you teach'	(Pres. opt. 2nd pers. sg. act.)
Skt.	bhár a ti	'X carries'	(Pres. indic. 3rd pers. sg. act.)
	á neṣ vahi	'we two led ourselves'	(Aor. indic. 1st pers. du. mid.)
	su nu yắma	'we might press out'	(Pres. opt. 1st pers. pl. act.)

Besides the finite verb forms, PIE also makes use of a number of derivative verbal structures which are non-finite, i.e. which do not stand as independent tensed predications. Included in this category are several infinitives, which were originally noun forms in various oblique cases (mostly accusative and dative) and became reanalyzed as part of the verbal system: cf. Skt. *dắtum* (acc.) 'to give', *píbadhyai* (dat.) 'to drink'. There are also participial formations from PIE formations in **-nt-* (e.g. Goth. *baírand-* 'carrying', Skt. *bhárant-*, Lat. *ferent-*); in **-ues-/-uos-* (cf. Skt. *vidván* 'knowing'); and in **-meno-/-mh₁no-* (cf. respectively Gk. φερόμενος 'carrying', Luw. *kišama-* 'combed'). There are also verbal adjectives in **-to-* (cf. Lat. *-ventus* 'having come', Gk. βατός, Skt. *gatáḥ* < **gʷm-to-*). These derivative formations, as well as a number of others such as gerunds, gerundives, supines, and other verbal nouns, are widely represented and used throughout the IE family.

26 The evolutionary stages that led to this system are presented in chap. 7.

Table 2.18. The present of the verb *$*h_1es$-* 'be' in PIE and selected languages

Greek	Latin	Sanskrit	PIE	
εἰμί	sum[a]	ásmi	*$h_1$esmi	'I am'
εἶ(ς), ἐσσί	es	ási	*$h_1$essi/*$h_1$esi	'you are'
ἐστί	est	ásti	*$h_1$esti	'X is'
ἐσμέν	sumus	smás	*$h_1$smes/*$h_1$smos	'we are'
ἐστέ	estis	sthá	*$h_1$ste	'you are'
εἰσί	sunt	sánti	*$h_1$senti/*$h_1$sonti	'they are'

a It has been claimed that the Latin form *sum*, without the final particle *-i*, is in fact the most archaic member of this set and that the others are innovative.

Table 2.19. The present of the verb *$*h_1ei$-* 'go' in PIE and selected languages

Greek	Latin	Sanskrit	PIE	
εἶμι	eō[a]	émi	*$h_1$eimi	'I go'
εἶ	īs	éṣi	*$h_1$eisi	'you go'
εἶσι	it	éti	*$h_1$eiti	'X goes'
ἴμεν	īmus	imás	*$h_1$imos/*$h_1$imes	'we go'
ἴτε	ītis	ithá	*$h_1$ite	'you go'
ἴᾶσι	eunt	yánti	*$h_1$ienti/*$h_1$ionti	'they go'

a The Latin 1st sg. ending *-ō* continues the thematic primary ending *$*-oh_2$*.

2.2.3. Ablaut

In the oldest stages of PIE, verbs and nouns were differentiated in their various morphological realizations by a modification of the root-vowel rather than by the addition of suffixes to invariant bases, the pattern which predominates in later stages of the language. This type of vowel modification or alternation is known as "ablaut" or "vowel gradation".

Vowel gradation patterns are based on the interplay of both vowel quality (qualitative ablaut) and vowel quantity or length (quantitative ablaut). The main alternations in the later language involve the basic root-vowel, usually *e*, called the "normal grade", alternating with *o*, the "*o*-grade" ("deflected grade" in Lehmann 1993: 134), zero (*ø*), the "zero-grade", and the less frequent lengthening plus change ("*ē* or *ō*-grade"), which became prevalent in several of the daughter languages.

2.2.3.1. Qualitative ablaut

The primary qualitative relations are based on an alternation of the vowels *e*, *o*, and *ø* (*ei*, *oi*, *i*; *er*, *or*, *r*; *en*, *on*, *n*; etc.), with different forms of a morpheme often repre-

Table 2.20. Qualitative ablaut

	e-grade		*o*-grade		∅-grade	
Gk.	*πέτ*-ομαι	'I fly'	*ποτ*-ή	'flight'	ἐ-*πτ*-όμην	'I flew'
Gk.	*στείχ*-ω	'I go in order'	*στοῖχ*-ος	'order'	ἔ-*στιχ*-ον	'I went in order'
Lat.	*sequ*-or	'I follow'	*soc*-ius	'associate'		
Lat.	*teg*-ō	'I cover'	*tog*-a	'a covering, hence the name of a garment'		
Gk.	*λείπ*-ω	'I leave'	*λέ-λοιπ*-α	'I have left'	ἔ-*λιπ*-ον	'I left'
Lat.	*fīd*-ō (< **feid*-ō)	'I trust'	*foed*-us	'agreement'	*fid*-ēs	'trust'
Gk.	*πείθ*-ω	'I persuade'	*πέ-ποιθ*-α	'I trust'	ἔ-*πιθ*-ον	'I persuaded'
Gk.	*δέρκ*-ομαι	'I am looking'	*δέ-δορκ*-α	'I see'	ἔ-*δρακ*-ον	'I saw'
Gk.	*πένθ*-ος	'grief'	*πέ-πονθ*-α	'I have suffered'	ἔ-*παθ*-ον	'I suffered'

sented by different ablaut grades. This system is well represented in Greek; cf. (Ϝ)εἶδος, (Ϝ)οἶδα, (Ϝ)ἰδών 'that which is seen, I have seen, seeing' (< **ueid-*, **uoid-*, **uid-*); πείθω, πέποιθα, ἔπιθον 'I persuade, I trust, I persuaded' (< **b^{h}eid^h-*, **b^{h}oid^h-*, **b^{h}id^h-*); and Gk. χέ(Ϝ)ω, χο(Ϝ)ά, χυτός 'I pour, drink-offering, poured' (< **g^{h}eu-*, **g^{h}ou-*, **g^{h}u-*). Ablaut provides an important means of morphological marking in PIE, providing a basis for distinguishing different grammatical representations of a morpheme. It has been somewhat obscured in Latin and other languages by analogical levelings and sound changes and is consequently less viable as a morphological device (table 2.20).

2.2.3.2. Quantitative ablaut

Quantitative ablaut patterns are based on the alternations of "normal", "lengthened", and "reduced" varieties of a vowel such as *o* : *ō* : ∅; *e* : *ē* : ∅. While represented vestigially in a wide number of IE languages (cf. Lat. *pedis* (gen.), *pēs* (nom.) 'foot'; *vocō* 'I call', *vōx* 'voice'; Gk. πατέρα (acc.), πατήρ (nom.), πατρός (gen.) 'father'), the quantitative system is still visible in Sanskrit (cf. *pát-ati* 'X falls', *pāt-áyati* 'X causes to fall', *pa-pt-imá* 'we fell'; *kar-tṛ́-* 'doer', *kār-yá-* 'business', *kṛ-tá-* 'done'.

2.3. Syntax

Defining the scope of syntax in an inflectional (fusional) language like PIE is difficult, since the boundary between syntax and inflectional morphology is not clearly distinguishable. This results in a certain amount of overlap between the two levels. Indeed, what is frequently called "syntax" in the description of PIE is in fact "morphosyntax", i.e. the morphological exponence of grammatical categories.

The reconstruction of PIE syntax is a particularly difficult undertaking for a variety of reasons, among them the following (see Haiim Rosén 1994).

a. *The nature of the corpus.* The speech and intuitions of native speakers are a primary source of information in studies of modern languages. However, a reconstructed language has no such data source. All material from the older IE languages (those relevant for reconstruction) is in written form, some of it fragmentary and much of it highly stylized, with a number of marked literary or formulaic constructions.

b. *The abstractness of syntactic theory.* Phonological, morphological, and lexical units are more concrete than rules or patterns of syntax and are therefore more accessible to pretheoretical organization. Fewer theoretical notions are required in order to isolate and classify concrete units such as phonemes, morphemes, and words than are required to characterize and classify syntactic phenomena. The reconstruction of semantics and pragmatics, which reach an even higher level of abstraction, is even more difficult.

c. *The structure of the descendant languages.* Most of the older IE daughter languages are of a highly synthetic type and carry out a great deal of their "syntax" in morphological expressions. Consider the difference between (1) and (2) in English, in which the thematic roles of "the boy" and "the girl" are different in each sentence, according to their relative order.

(1) *The boy sees the girl.*
(2) *The girl sees the boy.*

In Latin, a representative inflectional language of the IE family, the equivalents to these sentences can have the words arranged in any order without affecting semantic relations.

(1') i. S(ubject) O(bject) V(erb)
Puer puellam videt.
Boy girl sees

ii. O S V
Puellam puer videt.
Girl boy sees

iii. V S O
Videt puer puellam.
Sees boy girl

etc.

(2) i. **S O V**
Puella puerum videt.
Girl boy sees

ii. **O S V**
Puerum puella videt.
Boy girl sees

iii. **V S O**
Videt puella puerum.
Sees girl boy

etc.

d. *The data.* The IE languages on which the reconstruction of PIE is based are not uniform and consistent enough to allow a straightforward comparison of syntactic patterns, and reliance on one language or group of languages can lead to different results.

2.3.1. Inflection in PIE

Inflectional languages are characterized by complex morphological paradigms in which semantically distinct features are merged into a single form or closely united bound forms (Bloomfield 1933: 208). In an admittedly extreme example, the Latin verbal form *amō* 'I love' merges into the final *-ō* the semantic categories of person (first), number (singular), tense (present), voice (active), and mood (indicative). In a typical nominal form, the Greek πόλις 'city' merges into the final -ις the categories of case (nominative), number (singular), and gender (feminine). As an inflectional language, late PIE uses bound affixes (case-markers) to indicate grammatical relations between nominal expressions and other words in a sentence and to show gender and number concord among words in constituent groups. Such case-markers indicate the syntactic and in part the semantic roles of the various entities mentioned in a sentence. It is primarily through the interaction of the case-markers with the system of pre-/postpositions that nominal relations are expressed. The case-marking feature of the PIE nominal system is its defining typological characteristic. It is functionally more important than any other means of syntactic expression, including word order, since all grammatical relationships must be marked inflectionally.

In addition to their grammatical functions, the case-endings on nominals carry other information as well, namely that relating to gender and number. Nominals may be marked in the morphology for gender (animate/inanimate, later masculine/feminine/neuter) and number (singular/plural/dual), in addition to case. The

inflectional suffixes are complexes which represent all three of these categories in the same termination. Gender and number are critical to concord, which is discussed below.

Verbs are also characterized by complex suffixation patterns which mark such categories as tense, mood, voice, person, and number. These endings are indexed to the subject of the sentence by rules of agreement.

2.3.2. PIE syntax

2.3.2.1. Word order

The dominant unmarked order of meaningful elements in PIE is Subject + Object + Verb (*Woman children sees*) with compatible or harmonic orders of adjective + noun (*good girl*), genitive + noun (*Mary's hat*), standard + marker + adjective (*John than bigger*), noun + postposition (*the world over*), and preposed relative clauses (*who commute daily drivers*). It is important to bear in mind, however, that the order of words in a sentence in PIE is not a grammatical device *sensu stricto*. Word order has primarily pragmatic or rhetorical effect in that it can serve to highlight or background certain constituents. A general principle seems to be that the most important word in a sentence (the Topic or Theme) occupies the first position, while enclitics are second ("Wackernagel's Law"; see Wackernagel 1892). Since in the typical active sentence this will be the subject, it is clear why there is an observable tendency among IE languages to place the expressed subject of the sentence in first position, and strong evidence of an emerging fixed word order in many early IE languages. Many IE languages have been "drifting" in the direction of a fixed order of elements without overt cases for millennia.

There is some disagreement over PIE word order. While most specialists who consider word order important follow Lehmann (1974) and Vennemann (e.g. 1975) in postulating an SOV pattern for PIE, there are some (e.g. P. Friedrich 1975) who maintain that PIE was fundamentally SVO, and still others have made arguments for VSO (see Miller 1975). Such disagreement reflects above all the emphasis various scholars place on the evidence provided by different languages. Lehmann, for example, relies heavily on Vedic and Hittite, both of which are dominantly SOV; Friedrich, on the other hand, emphasizes Homeric Greek, which is alternately SOV/SVO and has many SVO-harmonic structures such as noun + genitive and noun + relative. The debate illustrates the "Teeter's Law" phenomenon mentioned in n. 3.

The reconstruction of PIE word-order patterns is based on principles of typological inference developed by Greenberg (1963b). According to this approach, there are major structural configurations in languages which are harmonious or compatible with each other. These harmonies are expressible in implicational statements

like the following: if a language has some property P, then it will also have some property Q. For example, if a language is SOV in its basic sentence pattern, it will have postpositions; if it is SVO, it will have prepositions. There thus appears to be a consistent relationship between the element which governs a constituent (sometimes referred to as "specifier" or "operator") and the element that is governed (sometimes referred to as "specified" or "operand"), resulting in a "natural serialization" (Vennemann 1974, 1975) of elements in a variety of syntactic constructions such as those of object + verb, noun + genitive, noun + adjective, noun + pre-/postposition, comparative constructions, and so forth. Such principles can be seen to be applicable to the reconstruction of PIE word order patterns. For example, Hittite, Vedic, and Tocharian are SOV with postpositions; Latin appears to be predominantly SOV (Marouzeau 1953, but the real situation is far more complicated; for details see J. Adams 1976, Panhuis 1982, Pinkster 1991, and Bauer 1995). Though mainly prepositional, Latin has some apparently relic postpositions such as *mēcum* 'with me', *tēcum* 'with you' (not †*cum mē*, †*cum tē*, as expected; cf. *cum puellā* 'with the girl'). This seems to be sufficient evidence to postulate a dominant SOV sentence pattern for PIE, a conclusion which is augmented by the existence of SOV-harmonic forms in otherwise SVO languages, such as occasional postpositions in Slavic and Baltic. The apparent archaism of such constructions can be taken as evidence for early SOV structure, even in languages which show a historical preference for and progression toward SVO structures. Discovering such patterns and drawing inferences for reconstruction depends crucially on the assumption that marked structures such as the Latin, Slavic, and Baltic postpositions are indeed archaisms and not innovations, and that the unmarked word orders have been correctly identified.

This approach entails several methodological and empirical issues. For example, it has been noted that inflected languages have much freer word order possibilities than do languages like English, which rely on order for marking grammatical function. According to this view, word-sequencing can be misleading, since it serves mainly secondary functions like marking topic or focus relations and may not reflect major syntactic features (cf. Watkins 1976).

Another issue concerns structurally consistent languages. Pure types without disharmonic structures are rare (in the IE family, only the VSO Insular Celtic languages and the SOV Hindi and other Indic languages are consistent). Furthermore, there is evidence that implicational universals do not serve as reliable predictors of future syntactic change in a language (Hawkins 1979).

Finally, there is the issue of "marked" vs. "unmarked" structures. Determining that a language is SOV or SVO when both are present in the data (as they often are, especially in the older IE languages) requires a judgment that one of the structures is more natural, more basic, more regular than the other. The problem for the analysis of ancient languages with no native speakers and often stylized texts (such as the verse text translated into Tocharian A below) is that judgments about

marked/unmarked structures can reduce to simple frequency counts.

2.3.2.2. Selected data for the reconstruction of PIE word-order

a. Hittite[27]

(3) *kuiš* LUGAL*waš piran ēšzi*
who king's front sits
'Whoever sits before the king'

(4) DUMU.É.GAL *šuppi watar parā epzi*
nobleman pure water preverb brings
'The nobleman brings pure water.'

(5) *man* LUG[A]L*waš piran šeškanzi kuiš ḫazzizzi*
when king's before they sleep who he acts appropriately
nu- šše GEŠTIN-*an akuwanna pianzi*
PRT to him wine to drink they give
'When they sleep before the king, then people give wine to the one who acts appropriately.'

b. Latin[28]

(6) *Post deinde manus iniectio esto. In ius ducito.*
after then of.the.hand put.upon it.shall.be into court let.him.lead
Ni iudicatum facit aut quis endo eo in iure
if.not judgment he makes or someone in for.him in court
vindicit, secum ducito.
lays.claim with.himself let.him.lead
'After this time, the laying of the hand on the debtor should take place. Lead him into court. Unless he satisfies the judgment, or unless someone makes compensation for him in the court, the creditor may lead him away with him.'

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27 In these and future examples from Hittite, small capitals indicate Sumerian logograms, italicized small capitals indicate Akkadian, and italicized lower-case letters indicate Hittite.

28 In keeping with disciplinary norms, vowel length is not marked in citations of textual material from Latin literature. This selection is from the Law of the Twelve Tables. Unless otherwise noted (e.g. Skutsch 1985 for Ennius), textual citations in this volume are from the standard editions of the Loeb Classical Library.

c. Avestan

(7) *Hāvanīm ā ratūm ā Haomō upāiṯ Zaraθuštrəm Ātrəm*
pressing at time at Soma went.up.to Zarathuštra altar
pairi- yaožδaθəntəm Gāθåš-ca śrāvayantəm.
around cleaning Gāthās-and reciting.
'At the time of pressing (the hour of early morning), Soma went up to Zarathuštra who was cleaning the altar and reciting the Gāthās.'

d. Tocharian A

(8) *Kāsu ñom-klyu tsraṣiśśi śäk kälymentwaṃ sätkatär:*
Good fame of.the.strong in.ten directions spreads.out
yärk ynāñmune nəm poto tsraṣṣuneyā p^{u}käṣ
reverence respect obeisance honor by strength by everyone
kälpnāl.
are to be attained.
'The good fame of the strong spreads in ten directions:
Reverence, respect, obeisance, and honor are to be attained
through strength by everyone.'

2.3.2.3. The cases

Classical PIE is reconstructed with eight cases (as in Sanskrit). The cases are the nominative, vocative, accusative, genitive, dative, ablative, locative, and instrumental. Kuryłowicz (1964: 179ff.) divides the cases of PIE into "primary" or "grammatical" cases (nominative, accusative, and genitive) and "secondary" or "concrete" cases (instrumental, ablative, locative, and in part the dative). In more current terminology, the distinction can be stated as follows: the grammatical cases are those which can be structurally or configurationally defined, while the concrete cases are those which can only be defined in terms of semantic functions. The distinction between "primary" and "secondary" has to do with the main use of each case, since all cases share both grammatical and semantic functions. For example, the accusative is primarily the case of the direct object, but it has a number of secondary semantic functions, such as the expression of extent of space and time.

The nominative. The primary function of the nominative is the grammatical specification of "subject of sentence" (Lat. *Paulus patrem videt* 'Paul sees his father'). The notion "subject of sentence" indicates primarily the constituent which controls verbal agreement and includes a number of thematic functions such as agent (*Terry hit the ball*); experiencer or theme (*Claudia fell*); beneficiary (*Sara received a gift*); and patient (*Max was bitten by the dog*), all of which can be expressed as nominative subjects in PIE. The nominative also functions as the

unmarked case in several constructional types (Kiparsky 1968: 54).

The vocative. The vocative provides the form of the noun being directly addressed, such as Lat. *pater* 'O father', or Skt. *devī́* 'O goddess'. It is indistinct from the nominative morphologically in some stem classes (cf. nom./voc. Lat. *pater* 'father', Gk. θεά 'goddess', Skt. *śátravaḥ* 'enemies'). Nominal expressions in the vocative are parenthetical in that, in general, they depend on no other constituents in the sentence.

Because of the morphological parallelism between the nominative and vocative cases, there is some exchange between the two. Occasionally the nominative is used in place of the vocative, or the nominative of a modifier will be used instead of the matching vocative. This mixture of nominatives and vocatives suggests that the two may not have been functionally distinct in PIE: cf. Homer *Il.* 4.189: φίλος ὦ Μενέλᾱε 'O Menelaus, my friend'; also *Il.* 3.276: Ζεῦ πάτερ, ... Ἠέλιος θ' ... 'Father Zeus, ... thou Sun ...'. In the second example, Ἠέλιος is a nominative used for the expected vocative Ἠέλιε to match Ζεῦ πάτερ. It may be possible to explain the use of the nominative here by reference to metrical considerations: the vocative Ἠέλιε would have a long syllable followed by three short syllables, an impermissible sequence in Homer's dactylic hexameter. Even if this is so, what remains morphosyntactically interesting is Homer's use of the nominative and not some other metrically appropriate case form.

The accusative. The accusative case serves as the case of the complement of the verb in a sentence, usually the thematic patient. Cf. Lat. *puerum terret* 'X frightens the boy', Skt. *agním īḍé* 'I praise Agni'. Many syntactic subtypes exist, including the double accusative (cf. Lat. *rogāre aliquem aliquid* 'to ask someone something', Ved. *tvā́m ahám satyam icchāmi* 'I desire truth from you'; the accusative of the goal, which is especially prominent with verbs of motion—cf. Skt. *vidarbhā́n agaman* 'they went to the country of Vidarbha', Lat. *vēnum īre* 'to go to sale', *domum īre* 'to go home', Gk. ὁδὸν ἐλθέμεναι lit. 'to go the road'; extent of time or space (cf. Lat. *annum iam tertium et vīcēsimum rēgnat* 'he reigns now for the twenty-third year'); and internal accusatives (also known as "inner" or "cognate" accusatives) in which the accusative form represents a noun which is derivationally or semantically related to the verb with which it occurs, such as Lat. *abī tuam viam* 'go your own way'.

The original function of the accusative has been the source of much debate, centering on two positions. The first holds that the accusative originally had a local function in PIE, based primarily on the idea that it expressed the goal of an action. This position holds that early PIE had no transitive verbs as such, and that the familiar transitive/intransitive distinction reconstructed for classical PIE and found throughout the descendant languages is a later development. According to this view, transitivity results from the reinterpretation of goal accusatives when such verbs as **pet-* 'fly' (Skt. *pátati* 'X flies', Gk. πέτομαι 'I fly'), which are intransitive, develop transitive meanings such as 'seek, search for', as in the Latin cognate *petō*:

cf. *petō urbem* 'I seek the city'. While it is true that such reanalysis may have taken place with some verbs, it would appear to have no bearing on the argument that PIE had no transitive verbs.

The second position holds that the accusative was from the beginning a purely grammatical case, the case of the direct object of the verb, and that the directive goal uses are secondary.

Both of these positions represent speculations which cannot be confirmed or denied based on the data from the descendant languages. However, most scholars now accept position that the PIE accusative must have had both local and structural functions.

The genitive. The genitive is, above all, a case that marks some relationship between two or more nominal expressions (the adnominal genitive). In such constructions the nominal in the genitive qualifies the other nominal by indicating some connection between the two such as possession, location, destination, origin, partitive, identification, subjective and objective roles, and various other types of relations. In general, an adnominal genitive functions as a kind of adjective to another noun. This function can be captured with the translation 'belonging to or connected with' the other nominal. A few select examples are:

a. *Possessive genitive.* This use of the genitive marks the person to whom the nominal belongs, as in Lat. *Paulī domus* 'Paul's house', Gk. ἀνδρὸς υἱός 'son of the man', Skt. *nṛpasya senā* 'the army of the prince'.
b. *Subjective genitive.* When a nominal modifier is in the role of agent, it is found in the genitive case: cf. Lat. *Caesaris adventus* 'the coming of Caesar', Gk. ἀνδρὸς ἐπιορκίᾱ 'the man's perjury'. For detailed discussion of genitives of this type, see Schmalstieg (1995).
c. *Objective genitive.* When a nominal constituent is in an object relationship with another nominal, it is in the genitive case: cf. Lat. *initium narrātiōnis* 'the beginning of the story', Skt. (*pituḥ*) *kāmaḥ putrasya* '(the father's) love of the son'.

As in English, there is a systematic ambiguity between objective and subjective genitives. In a phrase like Lat. *lupī metus* 'fear of the wolf', it is not possible to know from syntax or semantics whether it is the wolf who is afraid (the subjective use), or whether it is the fear of others toward the wolf (the objective use). Disambiguation requires reference to contextual factors (see Elerick 1991).

A second major type of genitive usage is the partitive, which designates that whole of which only a part is mentioned: Lat. *pars fēminārum* 'some of the women', Skt. *pība sutásya* 'drink (of) the soma', Lith. *dúok man dúonos* 'give me some bread'.

The dative. The dative case has as its primary function the denotation of the thematic beneficiary (or maleficiary), i.e. the entity for whose benefit, or to whose detriment, the action of the predication is being carried out, or whom it affects. Syntactically it designates the "indirect object", the remote recipient of the action of

the predication. Cf. Gk. Διὶ χεῖρας ἀνασχών 'lifting up the hands to Zeus', Lat. *puer dōnum mātrī dedit* 'the boy gave a gift to his mother', Ved. *yó ná dádāti sákhye* 'who gives not to a friend'. It is possible that the dative originally expressed the goal of the action, a function it shared with the accusative, as can be seen in Ved. *gṛbhnā́mi te saubhagatvā́ya hástam* 'I seize your hand for (my) welfare' (Kuryłowicz 1964: 195); possibly also in Latin sentences such as *Cicerō litterās mātrī suae scrīpsit* 'Cicero wrote a letter to his mother', a constructional type which is largely interchangeable with the accusative plus *ad* 'to', as in *Cicerō litterās ad mātrem suam scrīpsit*. (The Latin examples admit of other, language-internal explanations, however.) For present purposes it will suffice to consider the primary function of the dative to be the marking of the thematic beneficiary.

According to Gamkrelidze—Ivanov (1995: 250–252), one of the oldest uses of the dative case in PIE is to express possession in the construction which combines the dative with the verb **h₁es-* 'be' (Löfstedt 1963, Watkins 1967, Benveniste 1971, Lehmann 1993: 149). This construction is amply attested in Latin as the *mihi est* 'there is to me' construction, which is found throughout the history of the language: cf. Plaut. *Curc.* 189: *nullum homini est perpetuom bonum* (lit.) 'no blessing to a man is forever'; Verg. *Aen.* 1.71: *sunt mihi bis septem ... Nymphae* (lit.) 'to me are twice seven Nymphs'. This construction is found elsewhere in the IE family, assuring its status as PIE: cf. Hitt. *A-NA* ŠEŠ-*IA* NU.GÁL *kuitki* 'to my brother (is) nothing' (J. Friedrich 1974: 121). It is also found in Greek, as seen in Thuc. 1.86: ἄλλοις μὲν γὰρ χρήματά ἐστι ... ἡμῖν δὲ ξύμμαχοι ἀγαθοί 'to others are riches, to us are good allies' (Smyth 1956: 341); and in Latvian, as in *man ir grāmata* 'to me is a book'.

The ablative. The ablative case marks primarily the thematic source, i.e. the place of departure or origin. Cf. Lat. *quem nāvī abīre vetuī* 'whom I forbade to leave the ship', or, with a preposition as is usual in Latin, *ex illō oppidō vēnit* 'X came out of that town'; cf. also Skt. *vāyur antarikṣā́d abhāṣata* 'the wind spoke from the sky'. The ablative is also the customary case of comparison: cf. Lat. *arbore māior* 'larger than a tree' (typical of older Latin), Ved. *svādóḥ svā́dīyaḥ* 'sweeter than the sweet', Gk. (gen.) μέλιτος ἥδιον 'sweeter than honey' (with the genitive for the ablative, which was lost in Greek). The ablative tended to remain in its bare case form; otherwise, it occurred with a separative preposition like Lat. *dē* 'from', *ex* 'out of', *ab* 'from', or *sine* 'without'.

The locative. The locative indicates thematic location. It is quite general in its semantic range, with meanings such as 'in', 'on', 'at', 'near', and so on, depending on the context. Cf. Skt. *síndhau* 'in, at the river', Lat. *Ithacae vīvere* 'to live in Ithaca', *domī* 'at home', Gk. οἴκοι 'at home'. It is common to find this case usage supplemented by pre-/postpositions in the descendant languages, e.g. Lat. (abl.) *in urbe* 'in the city'.

The instrumental. The instrumental is the case which indicates the thematic instrument, i.e. the object or entity with which an action is carried out. This case

merged with other cases in many IE languages and frequently occurs with prepositions in those languages which preserve it. Cf. Ved. *bhadrám kárṇebhiḥ śṛṇuyāma* 'may we hear with our ears what is propitious', OCS *bě člověkŭ nečistomĭ duxomĭ* 'there was a man with an impure spirit', Lat. (abl.) *taurum gladiō interfēcit* 'X killed the bull with a sword' (in Latin, the instrumental merged with the ablative).

2.3.2.4. Invariable words (adverbs, particles, preverbs, and pre- and postpositions)

Adverbs. Adverbs are invariable words which indicate circumstances of time, place, direction, and so forth. Though adverbs cannot be securely reconstructed as a derivational category in PIE, they are prevalent in the descendant languages, usually appearing as frozen nominal case-forms such as locatives, ablatives, or instrumentals. A few examples: Lat. *certē* 'without doubt' (instr.), Gk. οἴκοι, οἴκει 'at home' (loc.), Skt. *ánti* 'before', Gk. ἀντί, Lat. *ante*, Hitt. *ḫanti* 'in front of' (loc.).

Particles. These are invariable forms, some of which may have their origin as part of the pronominal system or as former case-forms. They are functionally and formally similar to adverbs and clitics, from which they cannot always be distinguished. Particles such as **ar* 'and, thus' (Gk. ἄρ, ῥά, Lith. *ir̃*), **-kʷe* 'and' (Skt. *ca*, Gk. τε, Lat. *-que*), **-ue* 'or' (Skt. *vā*, Gk. (Ϝ)ἔ, Lat. *-ve*), **ne* 'not' (Hitt. *na(tta)*, Skt. *ná*, Lat. *ne-que*, Goth. *ni(-h)*, OCS *ne*) represent this important group of function words. They not only serve as adverbial modifiers, but also can serve to introduce specific clause-types and are used as sentence connectives and conjunctions in various IE languages.

Preverbs and pre- and postpositions. Many PIE case-forms and particles which came to be closely associated with verbs, and to modify them and in some instances reshape their meaning, developed into preverbs. Preverbs mark a number of mostly local modifications on verbal meaning, such as 'across', 'through', 'in', 'from', 'out of', and so on. Some examples: **peri* 'before' (Skt. *pári*, Gk. πέρι, Lat. *per*, Lith. *per̃*, etc.), **h₁epi* 'by, near' (Skt. *ápi*, Gk. ἐπί, Arm. *ev*), and **h₁en* 'in' (Gk. ἐν, ἐνί, Lat. *in*, Goth. *in*). A significant number of these forms evolved into what are commonly known as prepositions, which passed through a stage of postpositional placement in the oldest stage of the language. There is a systematic relationship between preverbs and pre-/postpositions which depends on whether the form is grouped with the nominal phrase or the verbal phrase. It can be illustrated with the Hittite postposition/preverb *piran* 'before, in front'. If *piran* is grouped with the nominal object in an unmarked OV sentence, the resulting structure has the following constituency, with a postposition.

(9)

kuiš	[LUGAL-*waš*	*piran*]	*ēšzi*
who	king's	front	sits
	[Object + Postposition]		Verb

'whoever sits before the king'

If, on the other hand, *piran* is grouped with the following verb, the resulting structure is preverbal.

(10) nu *A-NA* ^{d}IŠKUR *Ù* DINGIR.LÚ^{MEŠ}-*ŠU* *A-NA* ^{d}UTU *Ù*
PRT to weather.god and his.male.gods to sun.god and
DINGIR.LÚ^{MEŠ}-*ŠU* [*piran zikkizzi*]
his.male.gods front he.lays.in.turn
(Object) [Preverb + Verb]
'He lays in turn [the slices of bread] for the weather-god and his male gods and the sun-god and his male gods.'

It is most probable that the forms which were to become pre-/postpositions originally functioned independently of the cases with which they cooccurred, serving as a kind of adverbial accompaniment, as in Lat. *ex*, *locō* 'from, that place (abl.)' or *in*, *locō* 'in, that place (abl.)'. As the case-marker and the independent adverb-like marker came to be associated with each other, the two were eventually bound to each other to such an extent that the marker came to "govern" the noun by specifying its case. By this time the pre-/postpositions had largely lost their independent function, though there is ample residue of this earlier usage in such bare expressions as Lat. *susque dēque* 'both up and down' (an expression of indifference equal to English 'neither here nor there'), and in prepositions which function adverbially, e.g. Lat. *ante* 'before', *post* 'after', *prope* 'near', *super* 'above', and so forth. It is also the case, at least for Latin, that some preverbs are derived by the incorporation of prepositions into verbs, as can be seen in the alternation of such constructions as *trāns Rhēnum īre* 'to cross the Rhine' with the incorporated *Rhēnum trānsīre*.

Because they are lexically specific, pre-/postpositions allow much more precision in the marking of spatio-temporal relations than do the cases themselves. For example, Lat. *it urbem* by itself can only mean something like 'X goes to the city'. But prepositions like *in* 'into', *prope* 'near', and *sub* 'close to' allow much greater precision, allowing this new lexical class to achieve a pivotal role in the systems of many of the descendant languages.

2.3.2.5. Agreement and concord

By the time of the classical form of the protolanguage, there are fairly consistent rules which index inter- and intra-constituent relations. These rules are fundamentally of two types. The first, which are called "rules of concord", are those which mark constituent membership of nominals and modifying adjectives and participles, both attributive (Gk. ἀγαθὸς στρατιώτης 'a good soldier') and predicative (στρατιώτης ἀγαθός ἐστι 'a soldier is good'). Concord between a head nominal and its modifiers is achieved by matching the features of gender, number, and case, so that all members of a nominal constituent are recognizable as forming a group.

The inflectional, as opposed to the sequential, marking of constituent membership allows considerable freedom in the relative ordering of nominals and modifiers, especially in poetry and stylized prose in the descendant languages. Concord rules also hold in part across sentence boundaries, where pronominals are indexed to antecedents by matching gender and number features (as in Lat. *haec est fēmina quae tardē vēnit* 'this is the woman who came late'.

Rules of agreement index the relation between the subject and the verb of the sentence by matching the features of person and number. Cf. Lat. *ego maneō*, 'I remain' (1st sg.); *tū manēs* 'you (sg.) remain' (2nd sg.); *illī equī manent* 'those horses remain' (3rd pl.), and so on. There is no agreement relation between a verb and its object, despite the fact that the predicate or verb phrase is an integrated constituent.

Some examples of noun/modifier and subject/verb agreement.

Lat.	*puella*	*praeclāra*	*sedet*	*in*	*sellā*	*magnā*
	nom., sg., fem.	nom., sg., fem.	3rd, sg. pres., indic., act.	prep.	abl., sg., fem.	abl., sg., fem.
	girl	famous	sits	on	chair	large

'The famous girl is sitting on the large chair.'

Gk.	θαυμάζω	τὰ	τοῦ	ἀνθρώπου	παιδία	καλά
	1st, sg., pres., act., indic.	acc., pl., neut.	gen., sg., masc.	gen., sg., masc.	acc., pl., neut.	acc., pl., neut.
	I.admire	the	of.the	person	children	beautiful

'I admire the person's beautiful children.'

Skt.	*āsīd*	*rājā*	*nalo*	*nāma*	*vīrasenasuto*	*balī*
	3rd, sg., imperf., act., indic.	nom., sg., masc.	nom., sg., masc.	acc., sg., neut.	nom., sg., masc.	nom., sg., masc.
	there.was	king	Nala	by.name	Vīrasena's.son	strong

'There was a king, Nala by name, Virasena's son, strong ...'

Verb phrases can be expanded with case-marked expressions of time (Lat. *tertiō diē vēnit* 'X came on the third day'), place-to (Lat. *Rōmam vēnit* 'X came to Rome'), place-in (Lat. *in illō locō stat* 'X is standing in that place'), place-from (Lat. *ab illō locō vēnit* 'X came from that place'), goal (Lat. *librum amīcae dat* 'X gives a book to a friend'), instrument (Lat. *fenestram malleō frēgit* 'X broke the window with a hammer'), and a number of other qualifiers. The modality of a sentence, as well as tense and aspect, are expressed inflectionally, though they may have been originally marked only by particles.

Negation and interrogation are also marked on the verb phrase. The rule for

negating a sentence in PIE appears to be quite simple. The negative particle **ne* 'not' (Skt. *ná*, OCS *ne*, Goth. *ni(-h)*, Lat. *ne*) is normally placed before the verb, as can be seen in Lat. *nesciō* 'I do not know' (*ne-sciō*), *nōlō* 'I am unwilling' (*ne volō*) or Lith. *àš négeriu* 'I do not drink' (some languages show placement of the negative particle in sentence-initial position). There are also some "strengthened" negative particles, such as Lat. *nōn* and Skt. *néd*, which express emphatic negation. Another negative particle, **meh*$_1$ 'do not', is found with negative prohibitions in Greek, Armenian, Hittite, and Indo-Iranian: cf. Gk. (imper.) μὴ φέρε 'do not carry', Arm. (imper.) *mi berer*, Skt. (subj.) *mā́ bharaḥ*.

The descendant languages show a variety of interrogative types, making it difficult to make firm proposals for the structure of interrogatives in PIE. It appears clear, at least, that PIE did not have any word order inversions of the type "Is Mary leaving?". Questions of the "yes/no" variety may have been indicated by intonation, even though they are often marked by particles in the later descendant languages (e.g. Lat. *nĕ*, *nōnne*, and *num*, Goth. *niu*, Gk. οὐ). In contrast, "Wh" questions of the type "Who is leaving?" were indicated by interrogative pronouns and particles which are generally in sentence-initial position: cf. Hitt. *kuiš apāš* 'who is that?', Lat. *quis vēnit* 'who came?', Gk. τί ἐστι τὸ τρίτον 'what is the third?'. In many descendant languages there is a morphological relationship between the interrogative pronouns and particles and the indefinite pronouns ('someone', 'something', etc.).

2.3.2.6. Complex sentences

It is clear from the evidence of the descendant languages that PIE allowed the coordination of sentences. In many instances, coordination can be carried out simply by the juxtaposition of clauses, as in the well-known statement *vēnī*, *vīdī*, *vīcī* 'I came, I saw, I conquered' attributed to Julius Caesar. In addition, coordination could be signaled by particles such as **-k$^{\mu}$e* 'and' (Skt. *ca*, Goth. *-h*, Myc. *-qe*, Gk. τε, Lat. *-que*), or **-ue* 'or' (Skt. *vā*, Lat. *-ve*) which are used to coordinate both sentences and phrases, as in Ved. *śatáṁ ekáṁ ca* 'hundred and one'; Lat. *duābus tribusve hōrīs* 'in two or three hours'. Various particles signal other types of coordination, such as that seen in Gk. δέ 'and, but', which often simply links one clause to another, Skt. *hí* 'because, for', and many others.

PIE participial constructions of the type seen in Lat. *videō currentem* 'I see the one who is running' (lit. 'I see the running one') functioned as relative clauses in PIE. Full relative clauses introduced by either of the pronouns **k$^{\mu}$od* or **iod*, which are effectively subordinate clauses functioning as nominal modifiers, may also be of Indo-European date, though there is much debate on the topic. Such clauses are frequently preposed, though the data are mixed in the many descendant languages, especially those shifting toward VO structure. Sanskrit almost always shows preposed order: Ved. *yáḥ sunvatáḥ sákhā tásmā índrāya gāyata* 'who is the friend of

the soma-presser, to that Indra you sing'. Cf. also Lat. *quī coepit, dīmidium factī habet* 'who has begun, he has half of the deed (is half-done)'.

It is an open question whether PIE structurally marked the subordination of sentences to each other, as in "Melissa thinks that Marcus will be late", or whether the language simply juxtaposed independent clauses to each other with loose, pragmatically controlled semantic relationships, as in the *vēnī, vīdī, vīcī* example noted above, resulting in structures like "Melissa thinks (it). Marcus will be late". Other complement types found in IE languages are "small clause" complements ("I think him a fool"), and the type seen in complex sentence types like "You know this restaurant, what it's like". The issues surrounding complementation in PIE are complex, especially considering the many different complement types found in the IE languages and the wide range of grammatical devices available for their expression. Greek, for example, shows complements with the infinitive ("I know them to come"), the participle ("I know them coming"), and with the subordinating conjunction ὅτι 'that' ("I know that they are coming"), which is an innovation. Latin favors accusative plus infinitive (also found in Hittite), though participial uses are especially common in older Latin, and the later language has subordinating conjunctions derived from relative pronouns. It is interesting that in all the Western IE languages, overt conjunctions like "that" replace earlier complement types. It is also noteworthy that Sanskrit, despite a very elaborate textual tradition, where complex sentences would be expected, has virtually no subordinating conjunctions. Sentential complementation is carried out by nominal compounding, by the use of "gerunds" ("X thought having hurt Y" = "X thought X had hurt Y"), and by the use of the quotative particle *íti* 'thus'. This skewed pattern is repeated throughout the descendant languages. Some analysts have taken this lack of homogeneity to mean that PIE had no means of expressing complementation, and that the original strategy was the coordination of independent sentences. The development of grammatical devices for expressing complementation is then an independent matter in the various languages (though there is an obvious relationship between relative and subordinate clauses in several of the descendant groups). Those analysts who argue in favor of subordinating structures in PIE point primarily to the fact that among the world's languages, none has ever been found in which complementation is not expressible, i.e. in which it is impossible to say something like "Mary thinks that John will be late". For PIE it would have been no different.

2.4. Summary

This chapter has surveyed the major structural features of reconstructed PIE. Proposals concerning the phonological, morphological, and syntactic systems of the protolanguage have been reviewed, and a specific system which represents "late" or "classical" PIE has been adopted. From this system the structural features of Latin

can be derived. It has been argued that the "traditional" theory of PIE phonology provides the strongest account of the phonological structure of the protolanguage, one which includes laryngeal sounds and vocalic and consonantal systems typical of post-Neogrammarian analyses. The morphological system of PIE has also been presented in detail, with data from the IE languages and reconstructed paradigms from the nominal and verbal systems. Evidence has been provided that "late" or "classical" PIE was a language of the inflecting type, similar to Latin, Greek, Slavic, Sanskrit, and Lithuanian. The comparative analysis of salient syntactic features of the IE languages reveals features recoverable for PIE which are typical of languages with a dominant SOV word order.

Chapter 3
Ancient Italy and its Indo-Europeanization

Ancient Italy is so strongly associated with Latin and the civilization of Rome that it would be easy to overlook the fact that the history of the Italian peninsula is not exclusively Roman. In order to come to an eventual understanding of Latin as a vehicle of communication and culture in ancient Italy, the land and the many peoples who inhabited it throughout its history must be considered in some detail.

The history of a people can be assembled from several types of evidence. They include the following.

Archaeological evidence. The finds of archaeology are signposts along the road to historical understanding. Skeletal remains, burial techniques, fossils, food remnants in bodies and in vessels, and objects of human workmanship such as tools, items of warfare, living sites, and monuments aid the investigator in the attempt to recover the material and cultural history of peoples. Such evidence provides a crucial link in the reconstruction of history. Of course, the cultural record provided by archaeological finds must be analyzed carefully; archaeological evidence is mute, and its value to the linguist is not always obvious. The results are rarely uniform and without conflicting interpretations. This is surely the case in European and Italian archaeology, which abounds with different viewpoints on the reconstruction of prehistory.

Linguistic evidence. It is possible to recover past stages and even relatively deep histories of cultural groups without the aid of material artifacts and relicts. Such recovery is achieved through linguistic paleontology (the identification of common lexical items shared by languages being compared and the establishment of a protolexicon) and through the use of the techniques of comparative and internal reconstruction, which not only yield information on the structural characteristics of the target proto-system, but provide funds of cultural and other historical information as well. For example, it is possible on the basis of linguistic evidence alone to reconstruct words for 'wheel', 'yoke', and 'plow' in PIE. The antiquity of these items from the cultural lexicon can be determined by their structural features. Such vocabulary, which is amply attested throughout both the Asian and European branches of the IE language family, strongly indicates that the Indo-Europeans were acquainted with stockbreeding and agriculture. These cultural hypotheses can be safely made even in the absence of physical evidence, since the earliest dating for wheels seems to be around 3800 B.C.E., and the finds on which dating is based are not from the area of the purported IE homeland.

Similarly, there is general agreement among specialists about ancient religious practices, mythology, and legal and governmental institutions, achieved through the analysis of the linguistic record of the various IE languages. All these items of culture are known from the vocabulary which was passed down through generations of early speakers. For illustrations of cultural reconstruction based primarily on lin-

guistic information, see Benveniste (1969) and Mallory—Adams (1997).

Comparative cultural evidence. There is a great deal of information which can be inferred about prehistory through reference to studies of known cultures. Just as there are certain universals of linguistic structure which guide and constrain the formulation of reconstruction hypotheses, so too there are patterns of culture which are defined according to certain universal parameters (Woolford 1984), and which can be useful in the reconstruction of earlier cultural patterns. Analysis of the PIE system of kinship in terms of such parameters has led to the postulation of an "Omaha type" kinship system for PIE (P. Friedrich 1966). The Omaha system is characterized by patriarchal authority combined with a benevolent avunculate, extended patrilocal families, and the reckoning of inheritance based on the identity of a person's father. The cultural picture of PIE society which emerges from such an analysis might then be tested and compared against presently occurring systems in order to bring the picture of the Indo-Europeans into focus. Similar kinds of analyses, which also are based on evidence provided by cultural anthropology and linguistic paleontology and reconstruction, can be fruitfully applied to domains such as economy and trade practices.

The evidence of writing. Another significant source of historical information is provided by the physical remains of the written records. Valuable material appears in many different forms: inscriptions on stone, wood, lead, or clay tablets, papyri, glosses, and fully developed texts. Of course, not all languages, living or extinct, have writing systems. For the IE languages, the earliest written records are the clay tablets of Hittite discovered at Hattušaš in Anatolia. These tablets, from the Asian side of the IE family, can be dated to the seventeenth century B.C.E. On the European side, the oldest written documents are the Mycenaean or Linear B tablets recovered from Knossos on Crete, and from Mycenae, Pylos, Thebes, and elsewhere on the Greek mainland. The oldest of these texts have been dated to the fourteenth century B.C.E. There are also some Cypriot Greek inscriptions from ca. 1100 B.C.E. There is no further evidence of writing in Europe until the appearance of the Homeric epics the *Iliad* and the *Odyssey*, which are thought by many to have been written down around 800 B.C.E., though there are those who think they are later. The first samples of writing from Italy are non-IE Etruscan inscriptions from the seventh century B.C.E. Latin provides no useful written data until approximately 600 B.C.E., and no interpretable continuous texts until the third century. The implication of this erratic record is that while the available written evidence is of inestimable value in analyzing the history and prehistory of people and languages, it only goes back into what is really the recent past, namely the Bronze Age, and even then in a fairly limited area.

The evidence of ancient authors. A final source of information is the testimony of ancient authors, primarily those writing in Greek and Latin. Ancient historians and authors such as Dionysius, Herodotus, Strabo, Livy, and a host of others offer sporadic information on the history of peoples in the ancient world such as Illyrians,

Pelasgians, Etruscans, Germans, and Celts, not to mention the more familiar peoples of Italy and Greece who are part of the classical linguistic and archaeological record. The accounts found in the writings of the ancients offer ethnographic and occasional linguistic speculation on many peoples who have left nothing of themselves in the form of material remains. However, ancient accounts must be handled carefully and interpreted judiciously. For all their occasional wisdom, many of the ancients based their claims primarily on legend and tradition. Their accounts frequently conflict with each other, especially as the time-depth of their speculations increases. A good example of the confusing contradictions found in ancient accounts is provided by the differing views on the origins of the Etruscans. Herodotus, who wrote in the fifth century B.C.E., declared that the Etruscans had their origins in Asia Minor, specifically Lydia. He was joined in this view by a host of other authors, including Vergil. Dionysius of Halicarnassus, writing in the second half of the first century B.C.E., claimed that the Etruscans were indigenous to Italy. Other lesser known figures argued for other places of origin, including an Alpine home which connected the Etruscans with the little-known Raeti. Thus, the testimony of the ancients is neither systematic nor scientific, is usually incomplete, and is often strongly biased culturally.

Of course, the combined use of the various types of available evidence yields results which are richer than those achieved through the use of only one. Speculations on some fact of ancient civilization achieved by the investigation of linguistic data gain support when they are suggested in the archaeological or the cultural record. For example, there is indisputable linguistic evidence for the existence of the horse in PIE times. Secure cognates can be found in languages as diverse as Greek, Latin, Hieroglyphic Luwian, Old Irish, Sanskrit, and others which support a reconstructed **h₁ekuo-* 'horse'. The horse is well known from fossil evidence from the Eurasian steppe region which many believe to be the PIE homeland. This information strengthens the claim that the Indo-Europeans knew the horse, though there is considerable doubt over the wild or domesticated nature of the animal. The conclusion that the Proto-Indo-Europeans were familiar with the horse is corroborated by the relative prominence of the word for horse in the personal, place, and family names of the earliest Indo-Europeans (cf. Mallory 1989: 119), as reflected in Skt. *Bṛhad-aśvaḥ*, OPers. *Višt-āspa-*, Gk. Φίλ-ιππος, Gaul. *Epo-rēdia* and OE *Ēo-mēr*. Furthermore, the horse figures significantly in IE mythology and ritual. Thus the combined use of the linguistic, archaeological, and cultural evidence establishes the existence and importance of the horse in PIE times.

The following summary account of the prehistorical and historical record of Europe and the Italian peninsula begins at the oldest period which can be recovered by any reliable means, namely the European Stone Age.

3.1. The European Stone Age and its reflection in Italy

Though nothing substantial is known about the racial composition or material culture of the earliest Europeans, and nothing at all about the languages they spoke, there is general agreement among scholars of prehistory that the European Stone Age is a convenient place to begin to look for answers. The European Stone Age can be grossly divided into three periods. The first is the Paleolithic Period, with internal divisions of Lower, Middle, and Upper. It runs from approximately 500,000 B.C.E. to 8000 B.C.E. and is a period, according to all the available evidence, of material and cultural stagnation. In this, "the longest single cultural era of humanity" (Pulgram 1958: 90), the hunter-gatherer existence of early humans remained relatively stable and unchanging. In Italy there is evidence of *Homo erectus* in the Lower Paleolithic (ca. 200,000 B.C.E.), in the form of some tools and flints found near Verona in north central Italy, and in Imola, which is a bit to the southeast, as well as in Chieti and Venosa. A rich site has been uncovered near Rome which contains traces of an actual camp, with huts, hearths, handaxes, flakes, and even bones tossed aside after a meal (Trump 1965: 27). During the Middle Paleolithic (ca. 60,000 B.C.E.), the type known as Neanderthal Man (*Homo sapiens neanderthalensis*) developed. This type, which is widespread across Europe during this period, is known in Italy primarily from a few flints and points, suggesting a continuation of the hunter-gatherer way of life in which the search for food comprises a large part of daily existence. Human remains from this period become more frequent, largely because of the adoption of deliberate, even ceremonial burial (Trump 1980: 14). There is no evidence that Neanderthal Man could speak, though studies of the vocal apparatus and cranial reconstruction at least suggest the possibility. Furthermore, *Homo sapiens neanderthalensis* does not represent a continued development into modern European humans. It is probably the case that at least a minimum of *Homo sapiens sapiens*, i.e. the fully modern human, came into Europe from the Near East, where they appeared about 60,000 years ago, and replaced the west European Neanderthals. Whether the newcomers slaughtered their Neanderthal predecessors, merged with them, drove them to extinction by competing for food resources, or some combination of these factors is not known, though fusion of the two is the least likely scenario. But by the start of the Upper Paleolithic (ca. 35,000 B.C.E.), the process is complete (Trump 1980: 15). At the start of the Upper Paleolithic, there is evidence of east-to-west movement into Europe, and of a southerly migration into Sicily from the Italian mainland which continued throughout the Upper Paleolithic and into the next period, the Mesolithic. But who the travelers were and whence they ultimately came is unknown. Indeed, little is known about Paleolithic humans in Europe generally, and the state of knowledge is at about the same level for Italy, where developments in the Paleolithic rather closely parallel those of Europe proper.

For the next period, the Mesolithic (ca. 9000–6000 B.C.E.), the picture is about the

same. While there is some evidence of cultural advancement, the rate is still slow and the changes are not dramatic. Those developments which are discernible during this period seem to be in response to changing climatic conditions, especially the recession of the Upper Paleolithic Ice Cap toward the North Pole around 9000 B.C.E. The recession of the cap allowed for a quite different living pattern from that which prevailed during the Paleolithic. Forested areas with deep river valleys replaced the barren stretches of land, and the inhospitable climate gave way to more temperate conditions, opening northern Europe to human settlement. There is evidence that Latium was inhabited at this time (Holloway 1994: 14).

It is with the next and final period of the European Stone Age, the Neolithic, that visible changes are taking place in the material culture of Europe. The Neolithic, which runs from about 6000 to 2500 B.C.E., is characterized by the development of a trade culture, organized religious practices, established burial techniques, and a social organization built around villages. Harvesting becomes common, transforming the members of Neolithic society from nomadic hunter-gatherers to more or less sedentary agriculturists involved in animal husbandry. It was around this time that the first Neolithic farmers reached Italy from the other side of the Adriatic.

According to Pallottino (1975: 42), the following Neolithic phases can be distinguished, though as Trump points out (1965: 60), the Italian Neolithic does not fall neatly into the traditional threefold division of Early, Middle, and Late, but rather into four, since the final Neolithic phase shows cultural features more proper to the Copper Age than to the Stone Age. It must be noted that the Neolithic periods in Italy vary considerably from region to region, making a simple assignment of dates somewhat hazardous and to be avoided.

The Early Neolithic. This period is characterized by the widespread survival of stone tools in the Mesolithic tradition and the earliest examples of Impressed Ware, which is a rough porous pottery randomly decorated by impressions or incisions made by fingertips, sticks, or the edges of shells that are rocked across the surface. Variants of this culture are represented all around the coasts of the central and western Mediterranean and may reflect a migration of peoples from the eastern Mediterranean (Barfield 1971: 33).

The Middle Neolithic. During this period there is strong evidence in the south of cultures characterized by pottery from the Aegean and the region of the Balkans. In the north, pottery and artwork characteristic of the Danube region are found.

The Late Neolithic. This period is notable for its undecorated pottery characterized by a bright red slip and splayed tubular handles. This stock is often related to Diana Ware, from the Neolithic village near Lipari, though the two may not continue a single widespread ware (Trump 1965: 62).

Overall, Neolithic developments in Italy generally reflect contemporaneous European developments. Late Neolithic metals were being imported into Italy from abroad, and their use was becoming widespread. Polished stone implements were replacing those made by grinding and chipping, and trade, organized religion, and a

sedentary social organization became the rule.

It is not known at exactly what period Italy was Indo-Europeanized. The earliest possible period is the Neolithic, if it is the case that the original homeland of the Indo-Europeans was in western Anatolia. In this model, incursive IE populations moved westward into Greece and on into Italy, perhaps as early as the sixth millennium. The strongest objection to this scenario is the lack of close linguistic relationship between Greek and the Italic languages, which would be expected if they represented two phases of the same population movement.[1] In any case, just as in Europe proper, Italy was surely not void of inhabitants before the coming of the Indo-Europeans, even though it is impossible to know who the "original" inhabitants of ancient Italy were, or where they came from. As D. Adams and Mallory (1997) point out, the presence in the Italic languages of terms reconstructed for PIE such as 'wheel' and 'horse', which did not exist in Italy during the Neolithic, poses serious problems for such an early introduction of IE languages.

3.2. The Metal Ages

The Copper Age in Italy is generally without distinctive characteristics, and the colonization of the peninsula by metal-producing invaders probably began during the Aeneolithic (copper–stone) period. There are three identifiable cultures in Italy throughout this era, namely the Remedello and Rinaldone cultures in the north and the Gaudo culture in the south, which are thought by many to reflect the invasion of a warrior aristocracy with an abundance of weapons who introduced metallurgy, a new burial rite (single burial with weapons), new ceramics, the horse, and marked changes in the social system (cf. Mallory 1989: 93). The distinguishing characteristics of this era vary locally, but rock-cut tombs with crouched burials and trench graves are typical of the whole period (Pallottino 1975: 42). Further evidence for a migration into Italy at this period is the fact that Copper Age skeletons in Italy have markedly round skulls, which were virtually unknown during the Neolithic (Trump 1965: 69).

In northern Italy this was the period of the settlements in the area of the valleys and lakes of the southern Alpine foothills, extending into the Po plain. The greatest concentration lies around Lake Garda, where the lake site of Polada gives its name to the group (Coles—Harding 1979: 166). Polada lake-dwellings constitute one of the best documented Early Bronze Age material from the north. Polada lake-dwellings, called *palafitte*, were erected in the shallows or on the lake shores. These structures appear to be innovations in northern Italy and offer some support for the idea

1 Renfrew (1987) claims that the lines of migration of Indo-Europeans into Italy were from Anatolia into Greece, and from there, in a series of transformations, across the southern Aegean into southeastern Italy and Sicily, and from there northward into northern Italy and onwards to the west.

of northerly incursions. Polada sites are recognizable not only by their distinctive structural types, but also from pottery and organic material, specifically bones and carbonized grain.

As a possible period for the Indo-Europeanization of Italy, the Aeneolithic has more in its favor than the beginning of the Neolithic. It does not presuppose the existence of Indo-Europeans in Italy before the introduction of the horse and wheeled vehicles (D. Adams—Mallory 1997). There are some archaeological problems with the suggestion, however, one of which is the fact that the three cultural horizons of Remedello, Rinaldone, and Gaudo may not continue a single tradition, as well as the fact that the Rinaldone is situated in an area later occupied by the non-IE Etruscans.

The next period which has been suggested for the Indo-Europeanization of Italy is the Bronze Age (beginning ca. 2000–1800 B.C.E.), a period of economic and technological advancement. Proponents of a Bronze Age migration model claim that the speakers of Italic languages came across the Alps during the Bronze Age and introduced the *terramara* bronze-working culture into northern Italy ca. 1500–1100 B.C.E. The carriers of the *terramara* culture, called *terramaricoli*, are thought to have immigrated into Italy from Central Europe, particularly the area of modern Hungary. These Middle Bronze Age invaders, like their Polada predecessors, also made their homes on *palafitte*, erected on a common platform and united into a settlement. The purpose of the raised structures appears to have been defense against flooding. The term *terra mar(n)a* 'fat earth' (pl. *terramare*), from which the name *terramara* is derived, refers to the refuse mounds created beneath the dwellings, which were used by later farmers to fertilize fields. These *terramare* represent the remains of well-organized settlements. The *terramaricoli* brought with them three distinctive cultural traits: burnished dark pottery with distinctive decorations, techniques of bronze-working, and cremation burial. They are alleged to have later abandoned their settlements in the Po valley and pressed southward as far as Taranto and Timmari. After this, later movements from the north are responsible for the formation of the Proto-Villanovan and Villanovan cultures, which are now seen as early Etruscan (Fugazzola Delpino 1979: 32, Cornell 1995).

The arrival of the *terramaricoli* ushers in the full Bronze Age in northern and central Italy, while in the south the spread of Mycenaean influence in Apulia, Sicily, and the Aeolian islands is evident from pottery during this period, which is basically contemporaneous with the culture known as "Apennine" (ca. 1800–1200 B.C.E.). Settlement information on the Apennine culture is relatively slight, and tombs are not common. According to Holloway (1994: 14), Apennine groups may be thought of as peoples living in scattered homesteads who gathered from time to time in sanctuaries generally associated with springs and caves. There is evidence of contact between the *terramara* and Apennine cultures after the twelfth century B.C.E. But the Apennine culture was at the same time somewhat isolated and slow to develop in comparison with the cultures of the northern peninsula and those in the

eastern Mediterranean. While northern villages seem to have been built with care, with ample defenses against nature and hostile forces, the Apennine villages were loosely organized, the use of bronze was limited, their pottery was undecorated, and they apparently had very little material equipment. The overall society appears to have been rather backward in its development, unprogressive yet stable, and in balance with its environment.

It is an open question whether the two pile-dwelling cultures, the Polada and the *terramara*, represent different stages of the same cultural movement, or whether they are completely separate cultures. It has been suggested that both came from central Europe, but via different routes and at different times. They seem to be the first settlers in Italy with a knowledge of worked metals and could very well represent two manifestations of a cultural movement of peoples who are related in their origins. It is also possible that one or both of these two cultural groups were the first northerly bearers of IE languages into Italy. In fact, for some time it was fashionable to equate the *terramaricoli* with various ethnic names from the ancient tradition (see Pulgram 1958: 116 for discussion). There have even been suggestions that the *terramara* "folk" are the ancestors of the Romans themselves. This theory remains unsubstantiated, however, and it certainly does not help that no *palafitte* structures have ever been discovered at Rome. For discussion, see Whatmough (1937: 72), Trump (1980: 207).

Lexical correspondences between IE and Semitic languages have been taken by some scholars as evidence of early borrowings from Semitic into Indo-European during its migratory phases. Others have argued for early genetic connections between Semitic and IE languages as a means of accounting for these shared items. Still another position holds that some of these lexical items are derived from an early "Mediterranean language", which in many local dialects was spoken by members of the so-called "Mediterranean race". This theory is based not only on the linguistic evidence most clearly developed by Devoto (n. 2 below), but also on the finding that Bronze Age cultures in Italy did not confirm a break in continuity from the Neolithic patterns, as champions of the northerly invasion theories have always held. Rather, these cultures showed definite Minoan influence, reflecting contact in the Aegean in the second millennium B.C.E. Some proponents of the Mediterranean concept see these people as autochthonous in Italy, finding evidence of them back into the Paleolithic period. For others, they can be traced no further back than the Neolithic. In any event, they are held to be anterior to the arriving Indo-European peoples, regardless of where they came from, and to have exerted a considerable cultural and linguistic influence on them.[2]

The Late Bronze Age (roughly 1200–900 B.C.E.) constitutes the last step before the Iron Age. In the south, Mycenaean influence diminished, while in the north the

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2 Linguistically, the effect of the "Mediterranean language" on the attested languages of the IE family, especially Greek and Latin, is substratal, showing up as isolated words, grammatical forms, names, and in other infiltrations. Devoto (e.g. 1944) is one of the

Apennines made peaceful contact with the *terramaricoli* in the neighborhood of Bologna. The major incursion linked to this period is associated with the Proto-Villanovan culture (also known as the Pianello-Timmari horizon), which is evident over most of Italy by about 900 B.C.E., with the earliest site, at Torre Castellucia near Taranto, perhaps from the thirteenth century. Most, however, are from the eleventh (Trump 1980: 268). During this period there is a spread of cremation cemeteries containing cinerary urns of pottery. In addition, there is a great deal of central European metalwork that includes fibulae, razors, pins, swords, and sheet bronze used in armor (Mallory 1989: 92, Holloway 1994: 14). The most remarkable characteristic of the Proto-Villanovan culture is its overall uniformity in places which are distant from each other, suggesting good communications between different

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principal architects of the Mediterranean substratum theory. He has proposed five dialectal areas of Mediterranean (p. 43): Libyan (a general term for N. African), Iberian, Ligurian, Tyrrhenian, and Picene. A brief, non-exhaustive, look at Devoto's evidence yields the following data (all forms cited are Latin unless otherwise specified):

a) Latin words that do not conform to IE root-structure patterns. Included in this group are *focus* 'hearth', *cibus* 'food', *guttur* 'throat', *foeteō* 'I stink', *plēbs* 'common people', *gracilis* 'slender', and *piger* 'sluggish'.

b) Words which bear distinctively non-IE suffixation patterns. Among them are *papāver* 'poppy', *passer* 'small bird, sparrow', *hirundō* 'bird name, incl. 'swallow'', *pāpiliō* 'moth, butterfly', *mulier* 'woman', *fāmulus* 'servant', *pariēs* 'wall', *adūlor* 'I fawn over', *amoenus* 'beautiful, charming', and *hirūdō* 'leech'.

c) Words with internal phonological and morphological peculiarities which make them appear to be non-IE. Included here are *loquor* 'I speak', *gemō* 'I groan', *cupiō* 'I desire', *licēre* 'to be allowed', *paeniteō* 'I cause dissatisfaction', *pāreō* 'I appear', *parcō* 'I refrain', *iuvō* 'I help', *maereō* 'I am sad', *opīnor* 'I think', *optō* 'I desire', *ōrō* 'I pray to', *oportēre* 'to be proper', *urbs* 'city', *merx* 'commodity', *lanx* 'plate', *locus* 'place'.

d) Words characterized by the diphthong *au* which lack an IE etymology. Notable are *laus* 'praise', *fraus* 'harm', *causa* 'trial', *faucēs* 'throat', *laurus* 'laurel-tree'. Excluded are such clearly IE words as *augeō* 'I increase' and *auris* 'ear'.

e) Words with final *-ax*, *-ex*, *-ix*, *-ox*, such as *balux* 'gold-dust', *laurex* 'the young of the rabbit', *larix* 'larch-tree', *frutex* 'shrub', *mūrex* 'a shellfish yielding a purple dye', *cōdex* 'tree trunk', *cortex* 'bark of a tree', *vervex* 'a castrated male sheep'.

f) A number of words which are also found in Greek, but which do not follow the normal sound correspondences indicating common ancestry. For example, *cupressus* (Gk. κυπάρισσος) 'cypress-tree', *fīcus* (Gk. σῦκον) 'fig-tree', *fungus* (Gk. σφόγγος, σπόγγος) 'fungus', *līlium* (Gk. λείριον) 'lily', *plumbum* (Gk. μόλυβδος) 'lead', *rosa* (Gk. ῥόδον) 'rose', and *vīnum* (Gk. οἶνος) 'wine', which has also been connected with the Semitic layer by Gamkrelidze and Ivanov—cf. Heb. *yayin*, Arabic *wain*, Ethiopic *wein*). However, the word 'wine' has been analyzed as native IE by Beekes (1987), an old *n*-stem **ueih$_1$-ōn* (nom.).

g) Place names that reappear in different locales, purportedly with suffixes characteristic of the local dialect. For example, the place name *At* is found with regional suffixes in *Atina* (*At* + *ina*), *Atessa* (*At* + *essa*), and *Atella* (*At* + *ella*).

The Mediterranean substrate has been recently evaluated by Hannah Rosén (1994) in connection with Lat. *s(a)cēna* 'a type of pickaxe' and Heb. *śakkín* 'knife'. Rosén concludes that the Mediterranean substratum should be considered in strictly geographical, and not genealogical terms.

regions. The Proto-Villanovan culture seems to have greatly influenced many areas that are known from historical times. Proto-Villanovan seems to be the predecessor of the Villanovan culture, which is well represented in Latium. There is general consensus among archaeologists that the Proto-Villanovans were trans-Alpine immigrants, some of whom may have merged with *terramare* or Apennine peoples. During this period there were continuing Mycenaean influences in the coastal areas of southern Italy, and a "sub-Apennine" culture (Pallottino 1975: 42) in the peninsula and in the Aeolian islands. For archaeological discussion of the Italian Bronze Age, see Coles—Harding (1979).[3]

The beginning of the Iron Age in Italy is usually dated from roughly 1000 to 900 B.C.E. By the time of the transition from the Final Bronze to the Iron Age, Italy is reflecting common European developments. As the Bronze Age comes to an end around 900 B.C.E., life in Europe, and specifically in Italy, was in a definite state of change. With the introduction of an iron-using economy in the first millennium, Italy entered into a period of great prosperity and population increase, with an increasing emphasis on agriculture and a more productive economy than the stock-breeding of the Bronze Age (Trump 1965: 149–150).

The culture which is generally identified as the single most influential in the transition to the Iron Age in Italy is referred to as "Villanovan". There is compelling evidence of the powerful Villanovan culture during the period of roughly 900–675 B.C.E. (in certain regions, it lasted until about 500 B.C.E.). The name Villanovan comes from the city of Villanova, about four miles east of Bologna, where excavations were made in 1853. The material remains found in this area are in the form of huge urnfield cemeteries with richly decorated graves, evidence of wealth and prosperity, outstanding craftsmanship, production, and trade. There was much urban development, and the pervasiveness of material goods in the grave sites is evidence of a prosperous society with a strong artisan class. The Villanovan stage lasted at Bologna until 525 B.C.E., when, with the appearance of Etruscans in Aemilia, a strong element of classical culture was introduced (Barfield 1971: 107). Evidence of the Villanovan culture has been found from northern Italy all the way down into Sicily, a wide distribution which was probably the result of southeastern and eastern trade patterns. The prosperity of the north is in some ways paradoxical, however, given the fact that the south, and particularly the "heel" of the Italian boot, remained under the steady influence of the more advanced east.

There are many questions concerning the origins of the Villanovans. Were they

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3 Vennemann (1994a: 293–295) suggests that the ancestors of the Italic peoples lived in a large area comprising what is now northern France, the Low Countries, and northwest Germany, and that some of them remained in these territories when others moved into Italy sometime around the end of the second millennium B.C.E. While in these northern regions they exerted a substratal effect on Celtic and Germanic. According to Vennemann, this substratal influence accounts for the existence of problematic fricatives which show up in some second- and third-century C.E. inscriptions from the Roman Lower Rhineland.

speakers of IE languages? Were they the *terramaricoli*? Were the northern Villanovans centered in Tuscany and Campania related to the southern Villanovans, who seem to have pushed northward in infiltrations after being established in the south following an earlier, and original, north-to-south migratory path? If they were related, was the relationship racial, cultural, linguistic? What is their connection to the Etruscans, to whom they yielded in Bologna by about 500 B.C.E.? Whatever their origins, their relationship to each other, and the paths of their migrations, the Villanovans exerted a significant cultural influence on Late Bronze and Early Iron Age Italy, when important cultural centers were being established in Campania, Latium, and Etruria. Because Villanovan culture seems to underlie so many different groups, assigning it a linguistic identity remains very difficult. But by 700–500 B.C.E., the Villanovans had been integrated with the other inhabitants of Italy. Indeed, by 700 B.C.E., by one conservative estimate, "We are no longer looking at Villanovans but at Etruscans, the same people but with new habits" (Trump 1980: 273). At the dawn of the historical period, continuous exchange and movement across cultural boundaries characterizes the entire area. For a detailed review of the extremely complex question of the Proto-Villanovan and Villanovan concepts, see Fugazzola Delpino (1979).

In the south of Italy the picture is a bit different. The beginning of the Iron Age is accompanied by the first Greek colonization of southern Italy and Sicily, and there is evidence of significant cultural contact with the entire Aegean area. Mycenaean Bronze Age traditions are evident, and the slow development of the local cultures, a feature which generally distinguishes north from south, is consistent with overall regional developments. Following Pallottino (1975: 42–43), Metal Age developments can be summarized as follows.

The Copper Age and the Early Bronze Age. (ca. 2500–1800 B.C.E.). These two periods are not always easily distinguishable, and the entire time-span is marked by differing local trends. In Sicily there is evidence of Aegean and Anatolian influence, while on the mainland, pottery types show east European influence. In Sardinia, west Sicily, and west and north Italy, there is evidence of influence of the so-called Bell-Beaker cultures of western Europe. There are also indications of the beginnings of the Apennine culture. The whole period is characterized by inhumation, with crouched burials in rock-cut tombs and trench graves.

The Bronze Age. (ca. 1800–1200 B.C.E.). Mycenaean pottery is evident in the south, while in northern Italy the *terramara* culture with the typical pile-dwellings is catching hold.

The Late Bronze and Early Iron Age. (ca. 1200-900 B.C.E.). Mycenaean influence continues in the south, while the *terramare* flourish in the north, fusing with the Apennine. Cremation spreads, and the Proto-Villanovan culture takes hold. A bit later, Greeks colonize southern Italy and Sicily, and great historical centers in Campania, Latium, and Sicily are established.

It is probable that IE speakers immigrated continuously into Italy during the

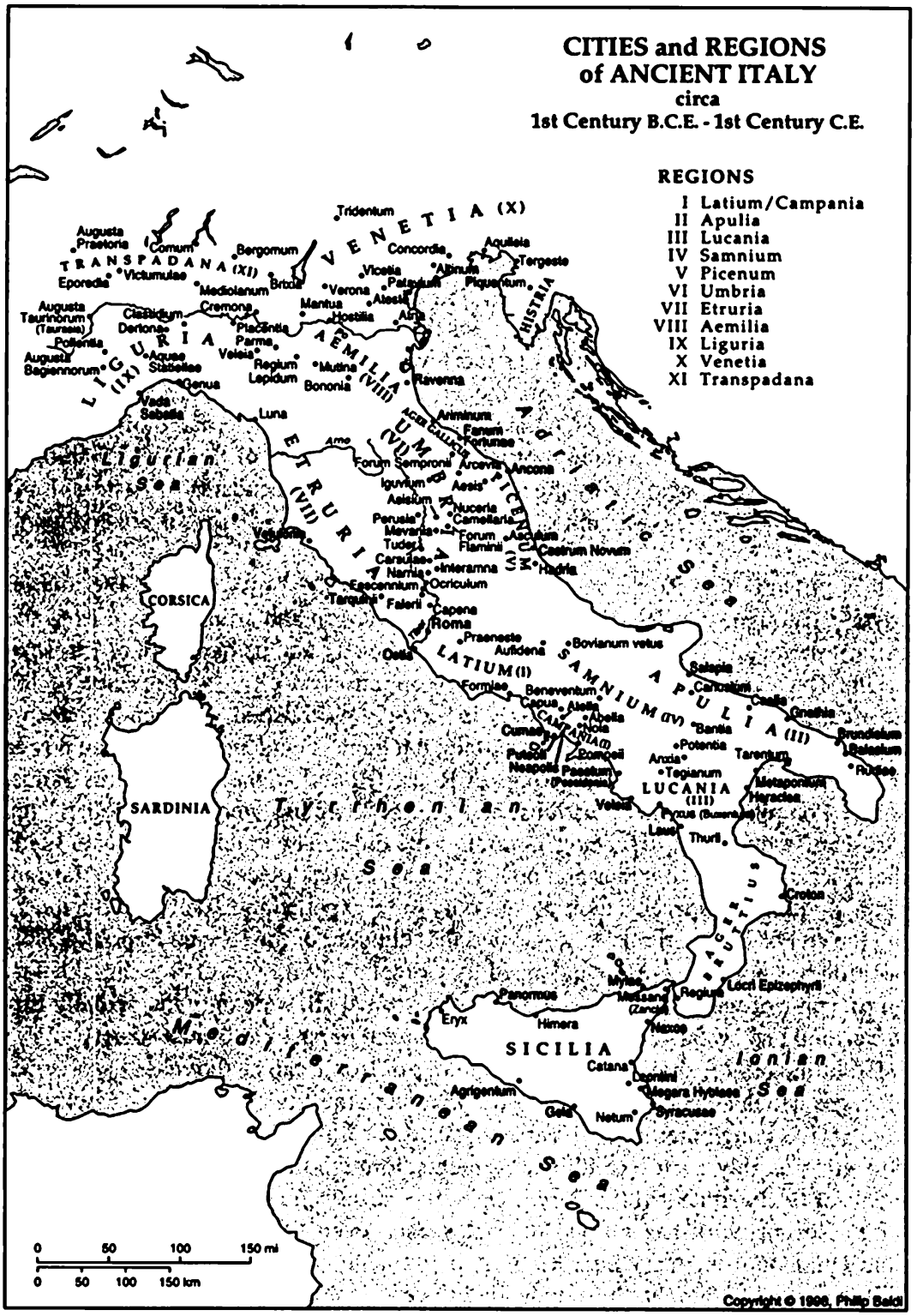
period spanned by the Aeneolithic and Iron Ages, a stretch of about a thousand years, though it is likely that the initial movement of the bearers of IE languages into central Europe took place much earlier. The resulting linguistic colonization apparently did not take place in a single dramatic movement, onslaught, or mass migration. Rather it came about as the result of the activities of migratory warriors, attended possibly by a steady trickling of IE-speaking immigrants. Colonists came across the Mediterranean and through Sicily in the south, from the Danube and general central European region across the Alps in the north, and also from the Balkan region via the Adriatic into central Italy. By the time the process is complete, around 700 B.C.E., the Italian peninsula is occupied by speakers of Pre-Italic and Italic dialects, and the stage is set for the coming domination of Latin. It is possible that the east–west movement into Italy was the source of the western Italic languages such as Latin and Faliscan, and that these were followed later by the eastern Italic languages such as Oscan and Umbrian. Finally, a southerly incursion brought the southern languages such as Messapic. While this model has some archaeological merit in that it accords with known movements of peoples at the time, it says nothing about the other IE groups in Italy, especially in the north, and cannot provide a workable solution to the shared features of the Italic and Celtic languages.

Wherever they came from and whenever they came, it is certain that the speakers of IE languages in Italy were intrusive and were imposed on a non-IE linguistic substrate. This substrate may have been Mediterraneans, Etruscans, or perhaps some other group such as Phoenicians or Pelasgians. Regardless of who these earlier inhabitants were, the conclusion is inescapable that the IE languages were carried into Italy by invaders who linguistically and culturally colonized the peninsula in a long series of migratory incursions over a period of at least a thousand years, that is, from the Aeneolithic, beginning somewhere around 2000 B.C.E., through the Bronze Age and into the Iron Age (map 3).

3.3. Rome

There are many legends in the ancient annals surrounding the traditional founding of Rome in 753 B.C.E. Ancient sources offer different dates, from as early as 814 to as late as 729 (see the extensive set of entries in Maltby 1991: 529–531; also Cornell 1995). Greek and Roman writers from Aristotle to Herodotus to Varro to Festus speculated on the origins of Rome, and on its name. Some early Greek historians argued for a Trojan origin, while others claimed Etruscan origins for the city.

The standard Roman foundation myth runs briefly as follows. Rhea Silva, a Vestal Virgin and the daughter of one of the Alban kings, Numitor, was violated by Mars and gave birth to twin boys, Romulus and Remus. Amulius, who had earlier deposed his brother Numitor, ordered the twins to be thrown into the Tiber. They washed ashore and were suckled by a she-wolf, perhaps the totem of a Latin tribe.



Map 3. Cities and regions of ancient Italy

The twins were eventually discovered and brought up by Faustulus, the royal herdsman, and his wife Acca Laurentia. After the identity of the twins was made known to Numitor, Romulus and Remus overthrew Amulius, the last of the Alban kings, and reinstated Numitor. They decided to construct a new city at the spot where they had washed ashore, beginning their settlement at the Palatine. An omen from the flight of birds indicated that Romulus should be the king of the new settlement, and he gave his name to the city.

One Greek version of the Roman foundation story traces the name of the city back to the goddess Rhome, whose name matches the Greek word ῥώμη 'strength'. Rhome followed Aeneas to Italy with Trojan refugees, where she instigated the other women in her group to burn the ships they had sailed on, stranding them there. Rhome's actions thus brought about the founding of the city, which was named after her. According to this version, the Trojan origins of Rome are accounted for by the presence in the story of Aeneas, who was a Trojan; the name of the city is accounted for by the intervention of Rhome; and the name of the local inhabitants (the Latini) is accounted for by the name of one of the descendants of Aeneas, Latinus (Mellor 1975). This version is almost certainly a fable which was created along Greek lines.

It is possible that Rome and its name are due to the Etruscans (cf. Etr. *rumon* 'river'). Though it is clear that there were Etruscans in and around Rome from the earliest periods, it is not possible to prove that the city and its name are of Etruscan origin. But even if Rome is not originally an Etruscan city, the presence of the Etruscans there and elsewhere in Italy is securely established. The actual dates of the Etruscan period in Rome are not certain, but there is evidence of Etruscan power from 616 B.C.E., when the early kings of Rome (Romulus, the Sabine Titus Tatius, Numa Pompilius, Tullius Hostilius, and Ancus Marcius) were succeeded by the Etruscan Tarquins, the first being Tarquinius the Elder. The traditional account holds that a series of assassinations and power exchanges took place until the last Tarquin king, Tarquinius Superbus, took power, only to be expelled in 510/509 B.C.E., marking the end of Etruscan rule in Rome and the founding of the Roman Republic. This position has been seriously challenged by Cornell (1995), who claims that the Tarquins, some of whom may not have been Etruscan at all, were only incidentally Etruscan, and had no far-reaching political or cultural impact on Roman society.

Pallottino (1979) shows how the beginnings of Rome can be thought of as a series of stages which all contributed to the foundation of the city. These stages essentially involve the conglomeration of various locales in Latium, beginning with Bronze Age and possibly even Neolithic settlements, through the unification of the settlements of the Palatine and the Forum, up to the establishment of the Republic in 509 B.C.E. Recent work has pushed the dates back even further. Excavations at the Sant'Omobono sanctuary near the Forum Romanum at the foot of the Capitoline Hill show that Latium has been inhabited since Paleolithic times, and that Rome has been inhabited since the second millennium B.C.E. Bronze Age sherds found at the

Capitoline and in its vicinity clearly point to early habitation, as do other finds from the Forum which have been dated to the period 1000 B.C.E. It is interesting in this context that despite the textual, ritual, and archaeological evidence which points to a gradual pastoral evolution of the city, the Romans devised a foundation myth connecting the foundation of the city to Troy and the wanderings of Aeneas (Reich 1979: 126).

Like other groups of Latin settlers in the region, the first Romans were probably farmers who had joined together from different locales. Variations in burial techniques and pottery suggest differences among the early inhabitants, though the groups were almost certainly related in culture, language, and ultimately origins (e.g. Aequi, Albans, and Sabines). The site which was to become Rome would have been ideal for a pastoral community, a beginning which can be recovered from the rustic ceremony heralded in the *Carmen Arvale* (see chap. 5). It appears that the Romans considered the settlement of Rome to have been a fusion of neighboring settlements. It is compelling in this regard that the first remains of Iron Age Rome, the cremation tombs in the Forum, belong to the same culture as that represented in the Alban Hills and in southern and central Latium by similar burials (Holloway 1994: 15). It indicates that the Roman tradition of considering Rome to have been founded by descendants of the Alban kings is confirmed by the archaeological record of the Iron Age.

At the end of the sixth century B.C.E., the Romans expanded throughout Italy. By the end of the third quarter of the fourth century, they had extended their territory as far south as the Bay of Naples, and within about fifty years they had federated the peoples of Apulia and Campania. By 265 B.C.E. the Romans controlled most of Italy, from the Apennines to the straits of Messina, and by about 100 C.E., Italy was primarily a Latin-speaking area. Thus, from its rustic beginnings in 753 B.C.E., this originally agrarian settlement grew into a colossus that was to last more than 1,200 years, until the end of the Western Empire in 476 C.E.

3.4. The Etruscans

It has been said that "more is known about the Etruscans than any other people of pre-Roman Italy—ironically enough for a culture whose popular reputation is founded on its mystery" (Reich 1979: 76). The mystery of the Etruscans is enhanced by the fact that so much from them of a material nature has been inherited, yet little is known about their origins, and only in the last few decades has a richer understanding of their language been achieved.

Etruscan settlements are found throughout Italy from the area north of Bologna (Felsina) up as far as Este, down the central section and west coast of the peninsula south to the Bay of Naples, with a strong presence in Campania. The bulk of the Etruscan population was settled in Etruria, an area bounded by Liguria in the north

at the River Magra, Umbria in the east, Latium in the south, and with its western coast on the Tyrrhenian sea.

Major areas of Etruscan expansion are the cities of Veii, Tarquinia, Caere (Cerveteri), and Vulci, all in the vicinity of Rome, and all previous centers of Villanovan culture. In addition to these there are substantial sites in the north at Vetulonia, Populonia, Volterra, Fiesole, Arezzo, Cortona, Perugia, Todi, Volsinii, Orvieto, Chiusi, and Bologna. Toward the south, Capua and Praeneste are significant urban centers. For review and discussion, see Cristofani et al. (1984).

By the end of the eighth century B.C.E., the many Etruscan settlements were organized as city-states which controlled some of their surrounding territory. Most of what is known about the cities themselves and their cultural record comes from their tombs. The archaeological finds of burial sites are the source of most of what is known about the Etruscan language, writing, and material culture. There never was an Etruscan empire; there was an Etruscan people who shared a language, a religion, a geographical location, and certain customs and culture which set them apart from other Mediterranean peoples (Bonfante—Bonfante 1983: 12). The Etruscans referred to themselves by the name *Rasenna*. They were called *Tyrrhenians* by the Greeks, and *Tuscī* by the Romans (and gave their name, *Vīcus Tuscus*, to one of the quarters of Rome). The material remains of the Etruscans range far and wide along the Italian peninsula, with each urban center distinctively characterized by its own specialized kind of monuments. They were influential in many parts of the peninsula culturally and commercially, radiating out of Etruria. In fact, Livy reports that during the period when their power was at its height, the Etruscans almost succeeded in uniting Italy from the Alps to Magna Graecia. Until they eventually gave way to the Romans in the fourth century and the early decades of the third, the Etruscans stood proudly in the domain of cultural and economic influence in the Mediterranean. But as their sea power declined and they came under increasing attack from Italic and Celtic invaders, the Etruscan world began to shrink, and they were eventually brought into the Roman federal system.

The Etruscans established themselves in much of the Italian peninsula, though even during the culminating phase of their influence the south was largely dominated by Greeks, making their presence felt in matters of civilization and style of living. Etruscan art, writing, and political and economic power were very much in evidence. They passed a great deal on to those with whom they had contact, not only the Italic-speaking peoples, but also the Celts and other Alpine people. The Etruscans are barely visible after the first century B.C.E., and their culture and language must be recovered from sporadic finds. They left no literature, no written histories, no continuous texts which attest to the actual strength and extent of their civilization. The lack of such evidence in the texts has prompted Cornell (1995: 169) to argue that that the Etruscans were not a dominant cultural and political force in Italy: "The evidence of the sources suggests that the encounter with the Etruscans had only superficial effects on Roman life and culture". For Cornell, "Etruscan

Rome" is a myth. All that is securely known must be gleaned from the scattered remnants left behind and the sporadic ancient accounts, hardly a composite picture, but one that is sure to become richer in detail as more discoveries are made and understanding deepens.

3.4.1. Theories of Etruscan origins

Throughout history, there has been a great deal of theorizing over the origins of the Etruscans. While the ancients based their Etruscan-origins theories largely on myth and tradition (the only qualified exception being Dionysius of Halicarnassus), modern theorizing has been based on a somewhat firmer approach. Evidence has been assembled from the emerging archaeological record, from cautious use of literary evidence, and from linguistic data to establish positions on Etruscan origins. The following brief survey covers the essential issues.

Serious theories on Etruscan origins fall basically into four groups (see Pallottino (1975, 1984) and Cornell (1995); Van Der Meer (1992) and Beekes (1993) provide useful linguistic summaries). The first theory holds that the Etruscans were invaders from the north. The second position holds, with Dionysius (*Ant. Rom.* 1.26–30), that the Etruscans were indigenous in Italy, and that they belong to the oldest ethnic layer of the Italian peninsula. The third position is Pallottino's "formation process", which holds that the Etruscan *ethnos* should be viewed in terms of a long evolutionary process on Italian soil, in which Indo-European and Eastern components formed into a unity. The fourth theory is that of Eastern origins, which holds, with Herodotus (1.94), that the Etruscans were from the Aegean area. There is a fifth, quite novel position which asserts that the Etruscans were identical to the Trojans.

The first theory of Etruscan origins is that of the northern invasion. One version of this theory holds that the *terramare* cremating peoples of the north crossed into Italy through Alpine passes and spread down the peninsula, bringing the Italic and Etruscan peoples with them (Pigorini 1903; Pallottino 1975: 39–40). This particular position is tied closely to the erroneous claim that Etruscan is an IE language and has gained virtually no adherents. Another version of the northern origins position attempts to equate the Etruscans with the poorly known Raeti of the Alpine region. The connection is based on a misinterpretation of linguistic evidence, however, and has no supporters among modern scholars. Though there are a few affinities between Etruscan and Raetic, they are neither numerous nor important enough to add real substance to the claim of northern origins for the Etruscans (see Beekes 1993: 47–48). In the end, there is nothing in the archaeological or linguistic record to support the notion of an Etruscan arrival from the north, regardless of the path.

In his *Early History of Rome*, (7 B.C.E.) Dionysius of Halicarnassus claimed that the Etruscans were autochthonous in Italy, a unique position among ancient Greek and Roman writers on the subject. Dionysius is in many ways the founder of the

Etruscan question (Pallottino 1975: 64), and he devoted a full seven chapters (24–30) to the issue. He based his position on the fact that Etruscan culture was of obvious antiquity, and that the Etruscans were culturally and linguistically isolated from the neighboring Italic tribes. Dionysius (1.26) even provides a folk-etymological account of the name of the Etruscans (Gk. Τυρσηνοί), namely that their name was derived from the name of the walls (τύρσεις) enclosing their forts, which the Etruscans were the first inhabitants of the country to build. These are interesting observations, for Dionysius was not relying solely on tradition and popular myth in his assessment of Etruscan origins, as did most of the ancients who considered the topic.

The third theory is that of Pallottino (e.g. 1975, 1984), who has argued that the inconclusiveness of the various theories on Etruscan origins is a result of a preoccupation with provenance rather than with ethnic formation. He argues for a long and complicated formation process, in which autochthonous, Indo-European, and perhaps eastern components formed into a cultural and historical unity. In his view, the autochthonous component of the formation process is paramount. For Pallottino the Etruscan *ethnos* was formed from the long evolution in the very cultural centers where Etruscans later assert themselves, and where there is the greatest amount of Etruscan expansion. These centers also represent important loci of Villanovan culture. In Pallottino's view (1975: 80): "Villanovan culture [which itself was the product of a long and gradual evolution] appears to represent an already fully formed and active Etruscan nation, even from the point of view of its expansion in Italy". The position that the Etruscans emerged directly from the Villanovans is endorsed by Cornell (1995: 46).

The fourth theory, that of eastern origins, is followed by most ancient writers on the topic. Herodotus, for example (5th century B.C.E.), related the Etruscans to the ancient Lydians from the Anatolian region in Asia Minor, and in fact Etruscans were routinely called Lydians in ancient literary texts (e.g. in Vergil's *Aeneid*). Lydians, however, were IE-speaking, and there have been no Etruscan finds whatever in excavations in the Lydian area. Besides, just because a name is used for a certain group of people at a given point in history does not mean that they spoke the language associated with that name, or that they are related to others of the same name.

Another Eastern connection that was proposed by ancient authorities identified the mysterious (and ubiquitous) Pelasgians as possible ancestors of the Etruscans. According to Hellanicus, quoted by Dionysius (1.28), the Pelasgians were accomplished sailors who found their way from the East via the Aegean. This position is explicitly rejected by Dionysius (1.29), and with the scarcity of substantive information on the Pelasgians, it finds little support among modern scholars.

There is concrete evidence to support another eastern theory, however. Inscriptions discovered in the late nineteenth century on Lemnos, an island of the northern Aegean about halfway between the Chalcidic peninsulas and the coast of Asia

Minor, are in a language, Lemnian, which seems to be very close to Etruscan. In fact, it is now generally agreed that these non-Greek inscriptions from Lemnos provide evidence that the Lemnian language is related to Etruscan and is the only language ever found which can be put into the same genealogical grouping with the previously isolated Etruscan. Dating from the late sixth century B.C.E., the evidence of Lemnian supports the notion that there was an east-to-west migration into Italy by the Etruscans prior to the Indo-European invasions around 1000 B.C.E. In a lengthy review of the linguistic evidence, Van Der Meer (1992) affirms the genetic relatedness of Lemnian and Etruscan as a "Pelasgian–Tyrsenian language which was spoken in the North Aegean area in the protohistoric period" (p. 69), and even extends the argument to suggest that Etruscans and Lemnians were part of the same *ethnos*. The claim of ethnic relatedness is based largely on shared cultural customs such as the inclusion of the names of both the father and mother of the person to whom an inscription is dedicated, as well as the fact that both languages apparently borrowed an Indo-European word for 'grandson, nephew' (Etr. *nefts*, Lemn. ναφοθσ, from PIE **nepōt-*, cf. Lat. *nepōs*, Skt. *nápāt*, etc.). This position is affirmed by Beekes (1993: 59–60), who claims that "... the linguistic evidence also seems to confirm the ancient traditions that the Etruscans came from the Aegean area, probably from Asia Minor".

A final, quite unconventional theory of Etruscan origins is that proposed by Georgiev (1981). Working with linguistic evidence and etymological "method", Georgiev asserts that the Etruscans were none other than the Trojans, the legendary founders of Rome. Georgiev's reasoning runs as follows (his reconstructions). The names given to the Etruscans by various peoples in antiquity can be related to the name for the Trojans. For example, in Latin the names *E-trus-cī*, *Tu(r)s-cī* and the name for the Etruscan region *E-trūr-ia* (with the customary Latin change of intervocalic *s* to *r*) are all apparently related to the Gk. Τυρσηνοί, Lemn. **Tursyan-*, Hitt. *Truisa*, all traceable back to a primitive reconstructed form **Trōses* (Gk. Τρῶες) 'Trojans'. The specific differences between the Greek names Τυρσηνοί, Τρώς, Τρῶες, Τρώια (> Τροία) 'Trojan, Troy', and the Latin *Etruscī*, *Tu(r)scī*, *Etrūria* 'Etruscan, Etruria' can all be explained by reference to regular sound laws of Greek and Latin which allow for the postulation of the reconstructed form **Trōses*, **Trōsyā*. Then, in an onomastic leap, Georgiev claims that: "On the basis of the genetic identity of the names one can say that the Etruscans were descendants of the Trojans, i.e. that they were Trojan settlers in Italy" (Georgiev 1981: 247; emphasis in original). Though superficially attractive, these claims do not stand up to linguistic scrutiny, with the unexplained *E* in *Etruscī*, *Etrūria*, and the spurious metathesis of the *r* and the following vowel in Gk. Τυρσηνοί just two of the problems. But of course more serious objections to this proposal are the use of onomastic evidence to establish population links. Names, languages, and people should not be simplistically equated with each other, though the possibility does exist that the people could be related nonetheless.

Of the various positions on the origins of the Etruscans, the Eastern theory appears to be the strongest and is followed by many writers on the subject, both ancient and modern (but see Cornell 1995 for counterarguments). The apparent relatedness of Etruscan and Lemnian is the best evidence in favor of this position. It is further strengthened by the existence of a strong Orientalizing trend which is evident especially in Etruscan art and pottery decoration.

Whatever their origins, it is certain that by around 700 B.C.E. there was a strong Etruscan culture active in central Italy which expanded in several directions. Its known history as a more or less unified culture runs from roughly 700 to 100 B.C.E. The lack of a unified political organization made the Etruscans and their cities especially vulnerable to military, cultural, and social pressures exerted by the Romans, to whom they eventually succumbed.

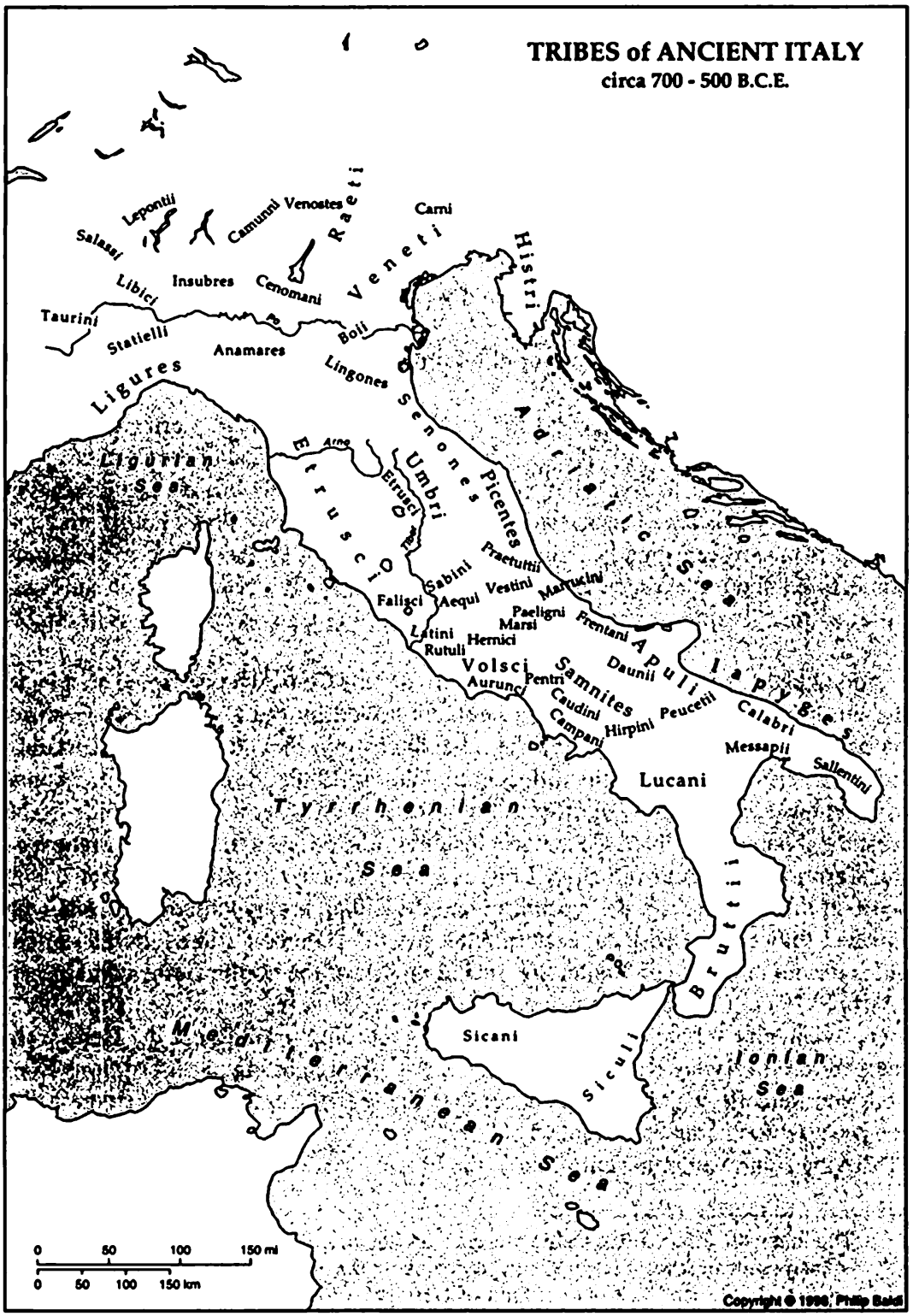
3.5. The people of ancient Italy

In moving from the proto- and prehistoric periods into the known stages of Italian history, the picture of the ethnological and linguistic makeup of the peninsula becomes inevitably sharper. By around 500 B.C.E., the demographic shape of Italy is securely established (map 4), and the stage is being set for the coming cultural and linguistic conquest of Rome over the existing tribes.

A few words about ethnic labels are in order. Though names and areas are assigned to groups as if they corresponded to a consistent and unchanging reality, the fact is that the groups enumerated below are often very poorly defined. The criteria used in making classifications, which include linguistic, archaeological, traditional, and anecdotal information, are often based on contradictory reports and evidence. And there is even less certainty concerning the origins of many of these people, since the material record is often ambiguous and the ancients contradict both each other and themselves on the matter. For example, though the name Oscan is traceable to Ὀπικοί (Lat. *Oscī*, earlier *Opscī*), it is at least possible that the Oscans did not originally speak an IE language, but eventually learned the Italic language of the tribes of Samnium, who are known as Samnites, and to whom they gave their name (Pulgram 1958: 217).

The following non-exhaustive enumeration of the most significant peoples of ancient Italy around 500–400 B.C.E. is based in part on Whatmough (1937), Pulgram (1958), and Trump (1980).

Beginning in the northwest, the first encounter is with the Ligurians. Ligurians may have been early invaders from a remote period, perhaps from the Bronze Age. Their language is IE and seems to have undergone an early "Celticization" from neighboring northern Celts, who came into the region sometime around the seventh century. The results of this linguistic and cultural mixing was a people referred to in ancient history as κελτολίγυες "Celto-Ligurians". Perhaps related to the Ligurians



Map 4. Tribes of ancient Italy

are the Statielli and the Lepontii, whose language (Lepontic) is Celtic and is represented by a useful inscriptional corpus. Possible relatives of the Lepontii are the Salassi.

To the northeast are the Raeti, who are only dimly understood as an ethnic group. They are believed by some to be descended from Etruscans moving southward through central Alpine passes, though this theory has been discredited on archaeological and linguistic grounds. Other non-IE alternatives, such as the suggestion that the Raeti are Mediterranean, are purely speculative. Though the overall record is meager, the best conjecture on the Raeti is that they were Indo-European (or at least they probably spoke an IE language) and were part of a very early phase of migrations into Italy. It is possible that the Venostes and the Camunni are part of the Raetic folk. East of the Raeti along the northeastern shore of the Adriatic are the Histri, an Illyrian people.

The Veneti occupied an area to the south of the Raeti in the northeast of Italy around Este (earlier Ateste). They are by far the most advanced of the northern peoples, with a culture to rival that of the Villanovans. Their origins are unknown, though they have been associated with both Illyrians and Proto-Latins and are known to have been greatly influenced by Celts. Most of the ethnic associations conjectured about the Veneti and other northern tribes have been made on the basis of rather meager linguistic evidence. The Venetic language, in any case, is undoubtedly IE.

Added to these three major northern groups are the Celts, who occupied an area to the north of the Ligurians up to the area controlled by the Raeti. Celtic warriors probably entered the north around the seventh century, though there is no certainly Celtic material from before the fifth century (Trump 1980: 283). Besides the Lepontii, who have left the most significant linguistic remains, Celtic tribes include in the west the Anamares, Libici, Cenomani, Insubres, and perhaps the Taurini; to the east the Carni; to the south the Boii, Lingones, and Senones (it should be noted that some of these tribes, e.g. the Anamares and the Libici, are hypothetical). Celts who invaded Italy from across the eastern Alps and the Danube basin exerted a noticeable cultural influence on Italian life, including that of the northern Raeti and Veneti (Barfield 1971: 150). They remained for about two hundred stormy years until they were eventually subjugated by the Romans. According to tradition, the Celts were merged into everyday Roman life by 150 B.C.E., though bilingual inscriptions from Todi and Vercelli, which are not earlier than the second century B.C.E., suggest that the process was completed somewhat later.[4]

Moving southward into central Italy, the Etruscans are the first group to be met, in

4 The linguistic effect of the Celtic presence on Italian soil shows up in Latin in the form of loanwords in several fairly limited domains. In the area of horsemanship, riding, and driving, words such as *benna* 'a kind of carriage', *ploxenum* 'wagon box', *petorritum* 'four-wheeled wagon', *carpentum* 'two-wheeled wagon', *raeda* 'traveling coach', *cisium* 'two-wheeled carriage', *carrus* 'wagon', and *eporediae* 'horse tamers' can all be

Etruria. Impinging on Etruria in the East are the Umbrians. Umbrians (called Ὀμβρικοί by the Greeks) play a prominent role in the ancient historical tradition and are assigned a variety of classifications. In one account they are labeled the oldest inhabitants of Italy, in another they are said to be the forerunners of the Etruscans, and in still another they are said to be later Pelasgians.

To the east of the Umbrians are the Picentes, whose origins are unknown. Their languages, which exist inscriptionally in two geographical varieties called North and South Picene, present a mixed picture. South Picene is an Italic language, with similarities to Umbrian, while North Picene is largely unintelligible and while probably IE, it is not easily linked with other languages of the area. Picenes have been ethnically linked with Mediterraneans, Ligurians, and original IE-speaking immigrants, all of which indicates how little is known about them. It has been suggested (see Poultney 1979) that the peoples of North and South Picenum represent two distinct cultural groups. Trump (1965: 162) finds Illyrian features in Picenian pottery, and there is evidence from the archaeological remains that the Picenes were seafaring traders. The Picenes had a strong cultural presence which extended beyond the boundaries of Picenum itself. On the edge of the South Picene territory are the ancient and barely known Praetuttii.

The Latini are the most important cultural group in central Italy. They dominate Latium, especially the area of the Alban Hills, where they live with the neighboring tribes the Rutuli, Labici, Praenestini, Hernici, and Romani, about whom nothing will be said beyond providing their names. The Latini are closely akin to the Falisci and the Hernici, Latian neighbors who spoke dialects very close to Latin.

By the name Sabelli (also called Samnites) is understood a group of tribes that had descended on Rome and its environs, starting before the fifth century B.C.E. Included in this grouping, which does no justice to their internal differences, are the Aurunci, Volsci, Pentri, Samnites, Sabini, Frentani, Marrucini, Marsi, Paeligni, Vestini, Aequi, and Hirpini. The languages spoken by these groups are mostly connected with Oscan. The term "Sabelli", which is etymologically connected to "Sabini" (and to "Samnium, Samnite"), was used in antiquity of Oscan-speakers generally, and the term "Sabine" is often used to describe the so-called "rustic" dialects around Rome.

The name Oscan refers more properly to a language, *lingua Osca*, than a people, Osci. It is, as Whatmough shows (1937: 284), the dialect which the Sabellians introduced into Campania, the land of the Osci or Ὀπικοί. But as noted above, the original language of the tribe called the Osci was probably not of IE extraction, though

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shown to be borrowed from Celtic because of their phonological structure. For example, *carrus* 'wagon' and Lat. *cursus* 'running' both continue PIE **krs-* (zero grade of **kers-* 'run'). Other Celtic loans are *omāsum* 'bullock's tripe', *alauda* 'lark', *alausa* 'shad', which all relate to animals or fish; *brāca* 'trousers', *camisia* 'linen shirt', *sagum* 'coarse woolen blanket', which relate to clothing; *gaesum* 'long heavy javelin', *gladius* 'sword', *lancea*(?) 'light spear', *mataris* 'javelin', which relate to weapons; and finally *cervesia* 'beer', a household object.

no records have survived to strengthen this speculation. In any event the Osci were not organized as a nation and could not therefore have had a national designation. Oscan the language was Sabellic, i.e. a non-Latin Italic language; but the Sabelli were not Oscans, and who the Oscans originally were is open to question.

In the southern areas of Apulia and Calabria are the Iapyges, Siculi, and Illyrii. The Iapygians comprise the Daunii, Peucetii, Messapii, Calabri, and Sallentini and may have Illyrian origins. Evidence for an Illyrian ancestry comes mostly from proper names and is supported by the ancient historical tradition as well. Evidence for Messapic connections with Illyrian are particularly strong, or at least as strong as anything related to Illyrian can be (see below). The Iapygian links with Illyrian assumes a westerly trans-Adriatic migration from the Balkans at some point in prehistory into the southeast portion of the Italian peninsula.

The southern portion of ancient Italy known as Lucania was occupied by the Lucani, who were apparently an offshoot Sabellian tribe which had pushed south from central Italy by about the fifth century B.C.E. The Lucani seem to be made up not only of the southward-migrating Sabelli, but also some original Neolithic inhabitants and Illyrians as well.

The Bruttii occupied a large area of ancient southern Italy. With most of the other tribes of the south, the Bruttii are often connected with the Illyrians from the Balkans. The little bit of empirical evidence for this conjecture is linguistic, coming from place and tribal names.

The Siculi of central and eastern Sicily seem to be part of the same general trans-Adriatic movement from the Balkans in which the Iapyges participated. Their language, Sicel or Siculan, is considered by most scholars to be an independent IE language whose deeper connections with Italic are poorly demonstrated. The Siculi themselves may have been related to the Illyrians. In the western part of Sicily are the Sicani, original Alpine people who migrated progressively southward into Sicily and were eventually isolated in the north and northwest of the island by the Siculi.

One of the most frequently mentioned ethnic groups which purportedly contributed to the cultural, archaeological, ethnic, and linguistic makeup of ancient Italy is the Illyrians. The fact that Illyrians come up so often in discussions, ancient and modern, of cultural and especially linguistic prehistory suggests strongly that they did in fact exist. Who they were, where they came from, and what their linguistic affiliation was is quite another matter. Inscriptions found in the Balkan peninsula, especially when grouped in an uneasy correlation with modern Albanian, suggest a Balkan origin. Though the data are sparse and unsystematic, the language may have connections with Messapic (Illyro-Messapic), but any classification is insecure beyond the fact that Illyrian is an IE language. Because of an apparent spread of place and proper names which extends far and wide, Illyrians have been placed in "Asia Minor, the Balkan peninsula, practically all over Italy, in the Alpine regions ..., in the Danube basin ..., even in western Poland, Switzerland, Germany, France, Spain, and the British Isles" (Pulgram 1958: 169), all of which attests to the scarcity

of concrete evidence on the Illyrians as a cultural or linguistic group.

Even less is known about the Pelasgians than about the Illyrians. Apparently a pre-Hellenic tribe from northern Greece, they have left no archaeological or linguistic record, and any ethnic or linguistic argument based on Pelasgian must be viewed with great caution.

The early Greeks, of course, have left a rich chronicle of their continuing influence on Italy from the beginnings of the archaeological and linguistic record. Especially prominent in southern Italy and Sicily during the ancient period, Greeks greatly influenced the cultural makeup of the area. Their enduring effects on Latin language and culture will be outlined in the next chapter.

3.6. Summary

This chapter has surveyed the sources of information from which the history of the peoples of ancient Italy can be gleaned, including language, culture, archaeology, writing, and ancient authors. The evidence for human habitation in the Italian peninsula since the Stone Age has been reviewed, tracing the settlement patterns through the Metal Ages and up to the historical period. Various proposals for the Indo-Europeanization of Italy have been reviewed, and it has been shown that Italy was colonized linguistically and culturally by Indo-European invaders in a long series of migratory incursions over a period of at least a thousand years, beginning somewhere around 2000 B.C.E. A detailed discussion of the "Etruscan question" has been presented, as well as a review of the issues concerning the founding of Rome. The many peoples who inhabited ancient Italy have been surveyed, including the non-IE Etruscans, the Celts, and the various other Indo-European peoples who inhabited the Italian peninsula. Each group is located in its geographical, cultural, and linguistic context relative to Rome and the speakers of Latin.

Chapter 4
The languages of ancient Italy

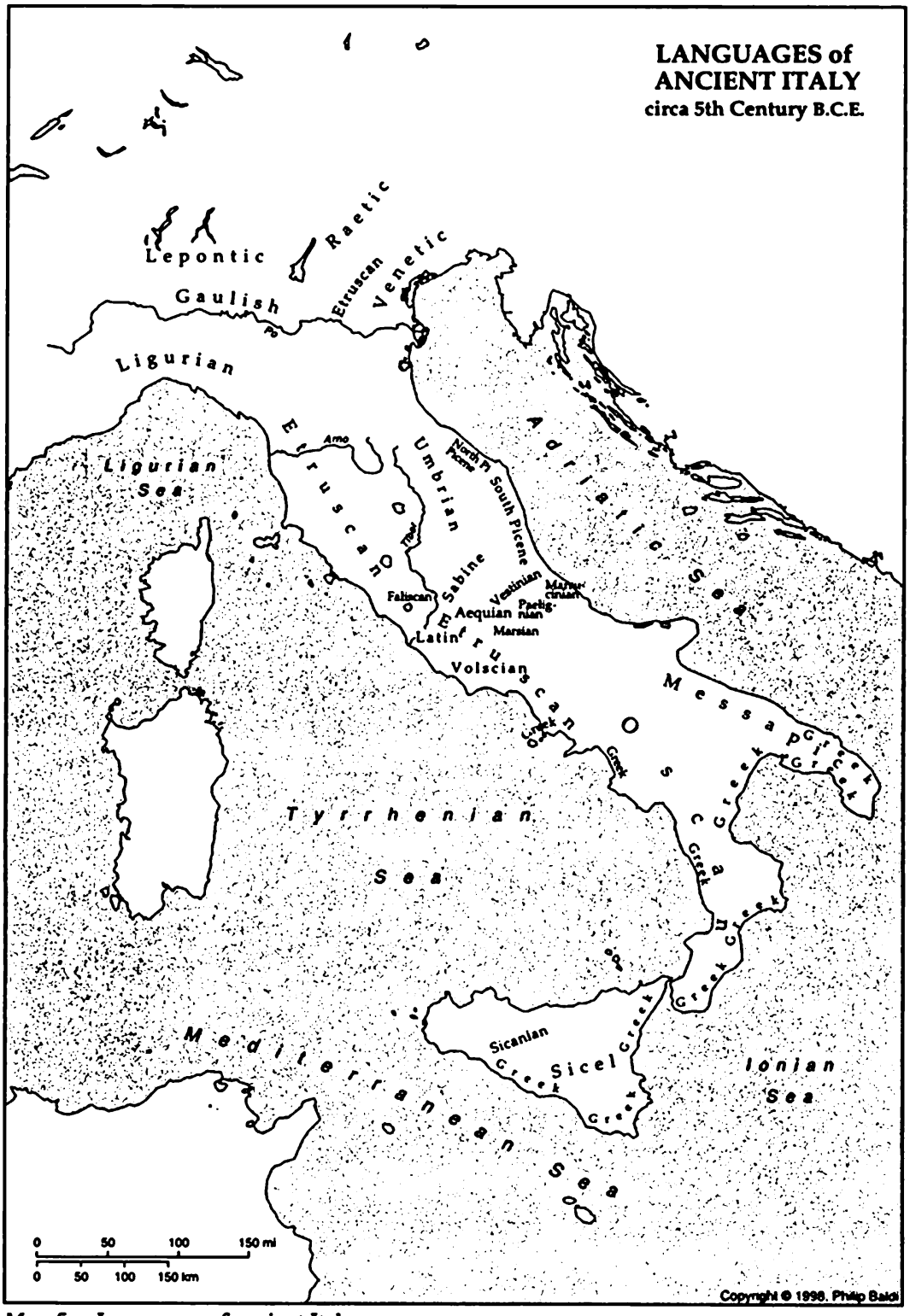
This chapter focuses on three broad issues. The first concerns the identification and classification of the languages of ancient Italy. The second concerns the internal classification of the Italic languages, that is, the IE languages of ancient Italy which are subgrouped under a common genetic node. The third issue concerns the position of Italic, but especially Latin, within the IE family of languages. Here the historical dependencies and connections of Latin with other IE languages are addressed, and the Italic languages are classified in relation to the other IE branches.

The following IE languages are found in ancient Italy with sufficient documentation that they can be brought to bear on these issues (map 5). From the Italic family are Aequian, Faliscan, Latin, Marrucinian, Marsian, Oscan, Paelignian, Sabine, South Picene, Umbrian, Vestinian, and Volscian. From the Celtic family are Gaulish and Lepontic. Separate IE languages are Greek, Ligurian, Messapic, Sicel, Venetic, and probably Raetic and North Picene. The only clearly non-IE language represented textually in ancient Italy is Etruscan.[1] Samples and discussion of each of these languages are provided in this chapter.

4.1. Sources of information

Materials for the study of the earliest remains of the Italic languages come from a variety of sources. The most significant of these is the epigraphical record—the records left in inscriptions written on hard or durable material such as stone, wood, and metal (table 4.1). The proper interpretation of Italic inscriptions involves an awareness of such widely divergent disciplines as the study of ancient jewelry, on which many inscriptions are incised; Etruscology (many early Italic inscriptions mimic Etruscan formulae or contain Etruscan words); philology and linguistics (which make it possible to recognize and interpret archaic features, dialect markers, borrowed words, etc.); Greek epigraphy (as a way of following the transmission of words from Greek to Latin, for example, or of comparing the form or content of each); Roman history; Roman prosopography, which provides descriptions of the appearance, character, or career of individuals (in order to achieve an understanding of the context and significance of the people, events, and materials carried by the inscriptions); ancient pottery (on which much was written); Italic religion and worship (to achieve an understanding of many of the inscriptions, which are dedicatory in nature); Italic nomenclature (to know who is writing what to whom, for example); petrology (to determine kinds of stone); all aspects of the Latin language,

1 For a brief review of evidence for the ancient "Mediterranean" language, see chap. 3, n. 2.



Map 5. Languages of ancient Italy

Table 4.1. The development of the alphabet

Phoenician		Archaic Greek		East Greek			Classical Greek				West Greek	Etruscan	Archaic Latin	Classic Latin	
𐤀	ʾ	𐌀 𐌀	a	𐌀 𐌀	𐌀 𐌀	a	A	α	Alpha	a	𐌀 𐌀	A	𐌀 𐌀	A	a
𐤁	b	𐌁 𐌁 𐌁	b	𐌁 𐌁	𐌁	b	B	β	Beta	b	𐌁 𐌁		𐌁 𐌁	B	b
𐤂	g	𐌂 𐌂 𐌂	g	𐌂 𐌂	𐌂	g	Γ	γ	Gamma	g	𐌂 𐌂	)[k]	)[k,g]	C[k]	g
𐤃	d	𐌃	d	𐌃 𐌃	𐌃	d	Δ	δ	Delta	d	𐌃 𐌃		𐌃	D	d
𐤄	h	𐌄 𐌄	e	𐌄 𐌄	𐌄 𐌄	e	E	ε	Epsilon	ĕ	𐌄	𐌄	𐌄	E	e
𐤅	w					v					𐌅 𐌅		𐌅 [f]	F[f]	v
𐤆	z	𐌆	z	𐌉	𐌉	z	Z	ζ	Zeta	z,dz	𐌉	𐌆	𐌉 [z]	G[g]	z
𐤇 𐤄	ḥ	𐌇 𐌇	h,ē	𐌇	𐌇 𐌇	h(ē)	H	η	Eta	ē	𐌇 𐌇	𐌇	𐌇	H	h
𐤈	ṭ	𐌈 𐌈 𐌈	th	𐌈	𐌈 𐌈	th	Θ	θ	Theta	th	𐌈 𐌈	𐌈			th
𐤉	j	𐌉 𐌉 𐌉	i	𐌉	𐌉	i	I	ι	Iota	i					i
𐤊	k	𐌊 𐌊 𐌊	k	𐌊	𐌊 𐌊	k	K	κ	Kappa	k	𐌊	𐌊	𐌊 𐌊	K	k
𐤋 𐤋	l	𐌋 𐌋 𐌋	l	𐌋 𐌋	𐌋 𐌋	l	Λ	λ	Lambda	l	𐌋	𐌋	𐌋	L	l
𐤌	m	𐌌 𐌌	m	𐌌	𐌌	m	M	μ	Mu	m	𐌌	𐌌	𐌌	M	m
𐤍	n	𐌍 𐌍 𐌍	n	𐌍	𐌍 𐌍	n	N	ν	Nu	n	𐌍	𐌍	𐌍	N	n
𐤎	s				𐌎 𐌎	ks	Ξ	ξ	Xi	ks					x
𐤏	ʿ	𐌏 𐌏	o	𐌏	𐌏	o	O	o	Omikron	ŏ	𐌏		𐌏	O	o
𐤐	p	𐌐 𐌐	p	𐌐	𐌐 𐌐	p	Π	π	Pi	p	𐌐	𐌐	𐌐	P	p
𐤑	ṣ	𐌑	s			s						𐌑			ś
𐤒	q	𐌒 𐌒	q	𐌒	𐌒	q					𐌒	𐌒	𐌒	Q	q
𐤓	r	𐌓 𐌓 𐌓	r	𐌓 𐌓	𐌓 𐌓	r	P	ρ	Rho	r	𐌓 𐌓	𐌓	𐌓	R	r
𐤔	š		s	𐌔 𐌔	𐌔 𐌔	s	Σ	σς	Sigma	s	𐌔 𐌔	𐌔	𐌔	S	s
𐤕	t	𐌕 𐌕	t	𐌕	𐌕	t	T	τ	Tau	t	𐌕	𐌕	𐌕 𐌕	T	t
𐤖 𐤅	w	𐌖 𐌖 𐌖	u	𐌖	𐌖	u,ü	Y	υ	Upsilon	ü	𐌖 𐌖	𐌖	𐌖	V	u
		𐌗	ks	𐌘 𐌘	𐌘	ph	Φ	φ	Phi	ph	𐌗 𐌗		𐌗	X	ks
				𐌗 𐌗	𐌗	kh	X	χ	Chi	kh	𐌘 𐌘	𐌘	𐌘		ph
					𐌙 𐌙	ps	Ψ	ψ	Psi	ps	𐌙 𐌙	𐌗			kh
		𐌅 𐌅	ō		𐌅	ō	Ω	ω	Omega	ō		𐌅𐌅			f

including verse, style, phonology, morphology, and syntax; Roman architecture (one means of dating inscriptions, or of determining their purpose); and the study of Greek generally (as a means of providing external evidence on the pronunciation, context, and content of Italic inscriptions). While Latin was the language of Italy and the western provinces, the common language of the eastern and southern provinces was Greek, which served as a *lingua franca* in a good deal of the eastern Mediterranean. Thus a working knowledge of Greek is essential to the understanding of many of the more than 300,000 inscriptions from the Roman world.

Inscriptions are one-time items, and they are preserved as they were cut. Thus, the dating of an inscription, when possible, may date its contents (see Keppie 1991: 25–29 for a discussion of dating techniques). Given their sporadic appearance and often predictable contents, inscriptions are a less than systematic source of linguistic information on the older language.

A brief mention of *papyri* is in order. Papyri are ancient texts written in ink and preserved primarily in the dry sands of Egypt, mostly south of Cairo where they were spared the flooding and dampness which causes the deterioration of perishable writing materials. Although papyrology is focused primarily on materials from Egypt, some papyri have been preserved elsewhere, such as the private library of papyrus rolls discovered under the volcanic crust at Herculaneum (David—Van Groningen—Pestman 1990: 1–5). Almost all Latin papyri come from the Christian era and are of comparatively lesser value in the study of Old Latin. They are, however, extremely valuable as a guide to certain features of non-literary Latin from the later period.

A rich source of information can often be found in literary fragments which are reported in works by authors writing at a much later period than that of the material they are quoting. Many Romans authors cite ancient material extensively because the fame of those writings, or their authors, has remained strong. Still others, mostly grammarians, quote the ancient authors in a form of contrastive linguistic exercise, noting older forms of the language to be compared with contemporary forms.

4.2. Samples of the Italic languages

The following conventions have been used in the citation of inscriptional material in this book:

a. All non-Greek material is transcribed into the Latin alphabet, regardless of the original.
b. **Boldface** indicates that a non-Latin alphabet was used in the original.
c. ALL CAPITALS indicates a Latin inscription.
d. *Italic* type indicates non-epigraphic Latin, as well as non-Latin inscriptions written in the Latin alphabet.
e. A dot under a letter (e.g. ọ) indicates an uncertain reading.

f. Each dot on a line indicates a missing or unintelligible letter.
g. Brackets [..] indicate that the enclosed material has been conjecturally restored by an editor; each dot represents one missing letter, while the use of a dash [–] indicates that an unknown number of letters is missing.
h. Parentheses ( ) indicate that enclosed material has been added by an editor to complete certain readings.
i. An open bracket at the beginning] or at the end [of a line indicates that something is missing.
j. Angled brackets ⟨ ⟩ are used to indicate letters accidentally omitted by the stonecutter, or for correct letters inserted by the editor.
k. A vertical line | indicates a line break. In some inscriptions cited in this volume, e.g. Umbrian, lines are broken at the end.

A list of abbreviations found in the inscriptions has not been included, since the oldest samples abbreviate mostly personal names, and these are evident from the accompanying English translations. See Gordon (1983: 234–235) for a concise list of common epigraphical conventions.

For comparison, each Italic inscription is followed by a rendition into Classical Latin. For detailed discussion of the linguistic and philological issues associated with these inscriptions which often goes beyond that included here, see the sources cited before each example.

4.2.1. Aequian

The Aequi were in the Alban Hills around Rome as early as the fifth century B.C.E. They were subdued by the Romans at the end of the second Samnite war (304 B.C.E.) and were quickly Latinized, a fact which is evident in the scant texts of Aequian which have been inherited, the dates of which cannot be fixed with certainty. This dialect is very close to Latin and might even be considered a dialect of Latin.

The following short dedication, the inscription of Alba Fucens, is close enough to Latin that it may even be a Latin inscription from Aequian territory.

CIL 1^2.385; Conway (1897, 1: 301–305); Vetter (1953: 163, no. 228h); Wachter (1987: 405–406; 53 n. 123).

ALBSI PATRE

Latin *Albānō patrī*

'To the (god named) Alban Father'

Discussion: The two forms in this brief inscription reveal interesting characteristics.

Both are datives: ALBSI represents a shortened written form of ALB(E)SI (cf. PTRONIO, DCVMIVS), in which the E is omitted. Further, it omits the nasal before S, as if ALBENSI (cf. *cōsul* for *cōnsul* 'consul'). The final I of ALBSI and the final E of PATRE mark two outcomes of the original final diphthong *-ei*.

4.2.2. Faliscan

The Faliscans occupied an area to the north of Rome. The chief Faliscan settlement was the city of Falerii Veteres, now the town of Cività Castellana, located about 40 km north of Rome along the Via Flaminia. Falerii Veteres was destroyed by the Romans in 241 B.C.E., and the Faliscans were resettled in Falerii Novi. Their language, Faliscan, was perhaps extinct as early as 150 B.C.E., though it is possible that it survived centuries longer. Judging from the linguistic, geographic, and orthographic evidence, the oldest Faliscan inscription may be from about 600 B.C.E., but the best-known ones are considerably later. There is some debate over the status of Faliscan as a language separate from Latin, or as a local Latin patois, an issue which is taken up later in this chapter. Much of older Faliscan (i.e. that from the old town of Falerii Veteres) is not systematically serviceable; some of it is fragmentary, some is made up mostly of names, and some has doubtful rendition into Latin, making interpretation difficult.

a. A well-known example, probably the oldest (ca. 600 B.C.E.), is engraved on a terracotta vase from a tomb near Cività Castellana (plate 1). Though there is disagreement over the word boundaries and the restored letters, the translation of the rest of the inscription is even more in doubt. For this reason only the first two full sentences of this four-sentence invocation are reproduced here. Note the use of vertical puncts to indicate (some) word boundaries. According to the reading given below, the "speaker" of this inscription is the vase produced by Mama and Sextus.

CIE 8079; Vetter (1953: 279–283, no. 241); G. Giacomelli (1963: 41, revised 1978: 525–530); Pisani (1964: 347–349, no. 151); Pulgram (1978: 163–164, L 2); Morandi (1982: 54–56). Text follows G. Giacomelli (1978: 525–526).

Ceresfar[.]e[.]tom : l[-]uf[-]ui[no]m : p[ore]kadeuios :
mamaz[e]xtosmedf[if]iqod :

Latin *Cerēs far, Ēvius vīnum porrigat. Mama et Sextus mē finxērunt.*

'May Ceres provide grain, and Evius wine. Mama and Sextus made me.'

Discussion: Ceres is a goddess representing the generative power of nature; **far[.]e[.]tom** if properly restored as **farmentom** means 'grain', in a morphological

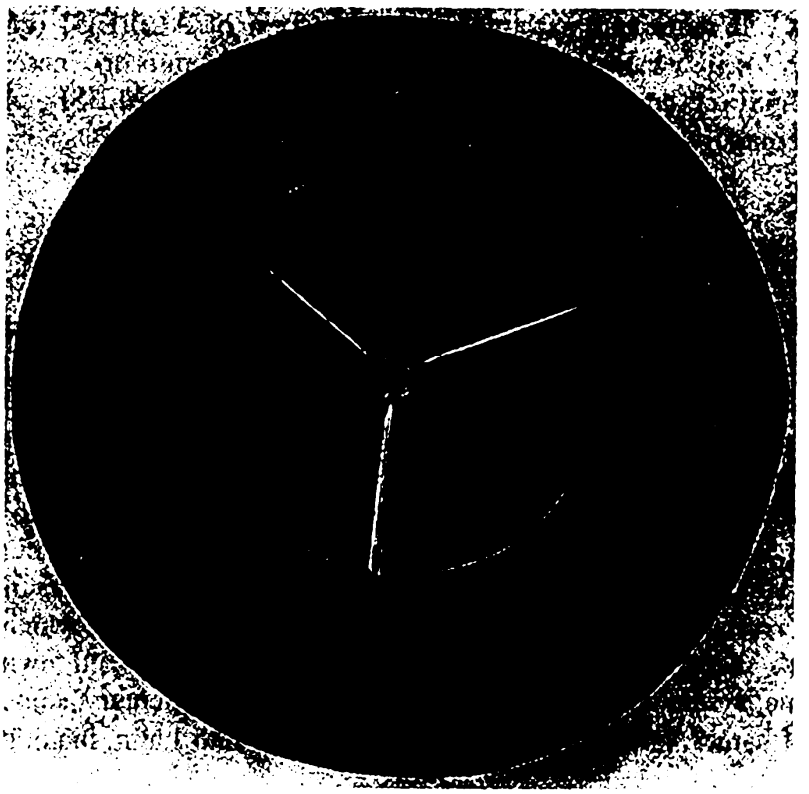


Plate 1. Faliscan: Ceres

construction analogous to Lat. *frūmentum* 'grain', though Watkins (1994) has proposed an emendation to the reading of **far[.]e[.]tom** as **far me[l]atom** 'black bread'; **uinom** equals Lat. *vīnum* 'wine', with inherited *o* in the accusative; **p[ore]kad** is equivalent to Lat. *porrigat* 'let X provide'; Watkins (1994) interprets **p[ore]kad** as **[pa]rad** 'begot', an unlikely reading; **med** reflects archaic *-d* in the accusative; and **fifiqod** is most likely the reduplicated plural perfect of *fig-*, with *q* written before the back vowel *o*: cf. **eqo** for **ego** 'I'. For the ending of **fifiqod**, ***fifiqond** is expected, but the *n* is lost before a consonant. The singular of this form is the attested **fifiked**.

b. The two nearly identical inscriptions which follow were found on drinking bowls from a tomb near Cività Castellana in 1886–1887. They differ only in that the first contains a reduplicated form of the verb indicating 'I will drink' (**pipafo**), while the second shows a non-reduplicated form (**pafo**). These inscriptions appear to be somewhat later than the first inscription from Faliscan cited above.

CIE 8179–8180; Vetter (1953: 287–288, no. 244); G. Giacomelli (1963: 49, 1978: 529–530); Pisani (1964: 346–347, no. 150); Pulgram (1978: 166–167, L 3); Morandi (1982: 58).

i. **foied . uino . pipafo . cra . carefo**
ii. **foied . uino . pafo . cra . carefo**

They have an apparent Latin rendition which reads:

Latin *Hodiē vīnum bibam; crās carēbō*

'Today I will drink wine; tomorrow I will do without.'

Discussion: Besides the **pafo/pipafo** doublet, which may be due to an error of writing, the two inscriptions contain some other noteworthy features: *f-* parallel to Lat. *h-* in **foied** 'today' (Lat. *hodiē*), cf. Falisc. **hileo** 'son', Lat. *fīlius*; loss of final *-m* in acc. **uino** 'wine' (Lat. *vīnum*); Falisc. medial *-f-* parallel to Lat. *-b-* in **pafo/pipafo** 'I will drink' (cf. non-Roman Lat. *rūfus* 'reddish', Rom. Lat. *ruber* 'red') and **carefo** 'I will do without', which probably equals Lat. *carēbō*, though R. Giacomelli (1978: 73–74) has proposed an alternative reading of **carefo** as *perībō* 'I will perish'. Silvestri (1993: 103–104) suggests that **pafo** and **pipafo** in fact have different meanings, namely that **pipafo** has an intensive/iterative meaning "I will drink [wine] again and again", while **pafo** means simply "I will drink [wine]"; cf. *tinniō* 'I ring, jangle', *tintinnō* 'I ring, jangle (intensively)'.

4.2.3. Latin

Since Latin and the earliest materials available for its study are the subject of the next chapter, it can be quickly passed over for the moment with the mention of a few early inscriptions.

a. Discounting the *Praenestine Fibula*,[2] which is now almost universally recog-

2 The Praenestine Fibula (also known as the Manios inscription) is a gold brooch which is said to have been discovered in 1871. It was formerly thought to be from Palestrina (ancient Praeneste), and was originally dated to about 600 B.C.E. The Fibula has been codified for more than a century as the oldest specimen of Latin ever discovered, and still enjoys currency in recent textbooks (e.g. Lehmann 1992: 76). However, it is now generally thought to be a clever nineteenth century forgery. The Fibula made its first public appearance in 1886, and questions concerning its authenticity were soon being voiced, evidencing skepticism and doubt on both the linguistic and physical characteristics of the object. The inscription reads as follows, omitting interpunction: MANIOS MED FHEFHAKED NVMASIOI [= CLat. *Manius mē fēcit Numeriō*] 'Manius made me (had me made) for Numerius' (*CIL* 1^2.3). If it were authentic, this inscription would show an archaic nominative in *-os* (MANIOS); an archaic accusative in *-d* (MED); a form of the verb *faciō* 'I make' (FHEFHAKED) which is reduplicated, as in other cognate forms (e.g. Gk. perf. τέθηκα), but not (elsewhere) in Latin; and an archaic dative in the form NVMASIOI, which also shows a pre-rhotacised *-s-* (later *Numeriō*). Needless to say, such a trove of archaisms in a single source would make this specimen invaluable if it were authentic, which I am convinced it is not. See Gordon (1975), in which the authen-

nized as a forgery, the oldest authenticated Latin inscription is from around 620–600 B.C.E., a short salutation apparently with a single 2nd or 3rd pers. future imperative SALVETOD inscribed on a wine container from Gabii. The inscription apparently reads as follows (see Wallace 1989; for a different interpretation see Silvestri 1993: 107).

SALVETOD TITA

'May Tita be in good health.' ('May you be in good health, Tita.')

b. The following inscription, also inscribed on a wine container, is known as the Vendia inscription. It is probably from Rome, ca. 620–600 B.C.E.

Wallace (1989: 124 et seq.).

ECO VRNA TITA VENDIAS MAMAR[COSM]ĘḌ ṾḤĘ[CED]

'I am the urn of Tita Vendia. Mamar[cos had me made].'

Discussion: Note ECO for *ego* 'I' (*G* was not in the alphabet at the time), and archaic genitive *-ās* in VENDIAS (cf. *paterfamiliās* 'of the head of the family'); the standard interpretation of TITA treats it as the first part of a bipartite name construction with an omitted -S, as the above translation suggests. The missing *-s* could result either from a scribal error (the most likely scenario) or from a compound inflection of TITA with the following VENDIAS, in which the internal inflectional marker is omitted. However, it may be the case that TITA is a nominative form (*tuta* 'complete'?) associated with VRNA, with standard agreement morphology, though this is semantically unlikely; note also the restored archaic accusative form [M]ĘḌ, which seems consistent with inscriptions of this type, as is the second part of ṾḤĘ[CED] *'fēcit'* [made].

4.2.4. Marrucinian

Like many of their neighbors, the Marrucini were probably illiterate, a fact which accounts for the sparse material records of this Italic language.

The only substantial monument in the Marrucinian dialect which has survived

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ticity problem is discussed in great historical detail; Pulgram (1978: 161–162, L 1); Pisani (1960: 6, A 3); Guarducci (1980); Gordon (1983); and Wachter (1987: 55–65). The story of the Fibula is recounted in Holloway (1994: 161–164). Silvestri (1993: 99–102) argues for the authenticity of the Fibula based on an analysis of the interpunction in the text and the interpretation of FHEFHAKED as a phrastic representation of FHE : FHAKED as *'fefaked et faked'*, i.e. 'has dedicated and made'.

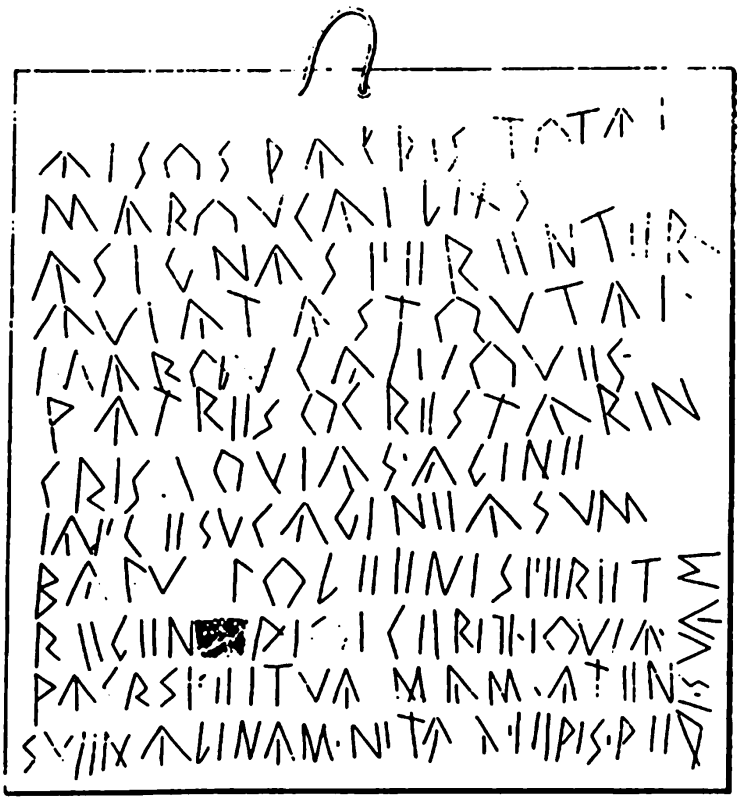

Plate 2. Marrucinian: Aes Rapinum

was discovered in Rapinum (plate 2).[3] It is inscribed on a bronze tablet and has been dated to the middle of the third century B.C.E. The translation of this text is very much in doubt, though it is clearly some sort of invocation. Only the first few complete sentences of this inscription follow.

Vetter (1953: 153–155, no. 218); Bottiglioni (1954: 330–331, no. 121); Pisani (1964: 119–121, no. 52); Pulgram (1978: 144–149, P 27); Durante (1978: 804–807); Morandi (1982: 148-149).

Aisos pacris toutai | *maroucai lixs* | *asignas ferenter* | *auiatas toutai* | *maroucai ioues* | *patres ocres tarinlcris iouias . agine.*

Latin *Dī propitiī. Cīvitatī Marrūcīnae lex. Prosiciae ferantur auspicātae cīvitatī. Marrūcīnae Iovis, patris ocris, Tarincris Ioviae pompā.*

3 The *Aes Rapinum* is reported by Bottiglioni (1954: 331) to be in the Berlin Museum. However, Morandi (1982: 48) reports information from the Antiquities Museum in Berlin that the *Aes Rapinum* was lost during the Second World War. Unsuccessful attempts on my part to locate the bronze tablet through the Berlin Museum authorities have unfortunately confirmed its disappearance.

'May the gods be propitious! A law for the Marrucinian state. Let the sacrificial pieces, consecrated by auguries, be carried for the Marrucinian state in a procession at the fortress of Jupiter and the *Tarincris Iouia*.'

Discussion: While many of the forms in this inscription are disputed, a few can be highlighted as of special interest. *Aisos* 'gods' and *pacris* (possibly related to Lat. *pāx* 'peace') together constitute an invocational formula; *toutai* 'state' is a dat. sg. fem., modified by *maroucai* in the next line. They both show a form of the dative ending (*-ai*) which is more archaic than that seen in Lat. *-ae*; *lixs* 'law' (= Lat. *lēx*) appears to contain an extra letter (*s*), as though *liks-s*, which recalls some Greek spellings in -ξσ; *ferenter* appears to be a 3rd person pl. pass. subj. (= Lat. *ferantur*), though it could be a future (= Lat. *ferentur*); *asignas* 'sacrificial pieces' is connected with Lat. *secō* 'I cut', indicating the parts of a victim which has been cut into pieces, as also in Lat. *prōsiciae* (*porriciae*) 'parts of a victim consecrated to the gods'; *Ioues patres* is transparently equivalent to Lat. *Iovis pater* 'Father Jove, Jupiter'; *agine* may be equivalent to Lat. *agōnium* 'day of sacrifice'.

4.2.5. Marsian

Marsian is the name given to the dialect of the Marsi, who lived east of the Paeligni in the area of the Lacus Fucinus. Their chief center was the town of Marruvium. They seem to have undergone Latinization around 300 B.C.E., leaving scant records of the language. Most of the material is in the form of dedicatory inscriptions to the goddess Angitia. The inscriptions themselves are not datable with assured accuracy; the structure of their alphabets places most of them in the period of ca. 280–150 B.C.E.

Because of their linguistic and geographical affinities, it is often difficult to distinguish Marsian from Volscian texts. Though much of what remains of Marsian is of doubtful status and meaning, the following inscription (plate 3), from Antinum, is relatively unambiguous. Several renditions are possible, but the one given below seems to make the best sense.

Vetter (1953: 158, no. 223); Bottiglioni (1954: 336, no. 132), who treats this text as Marsian even though some earlier scholars (e.g. Conway 1897, 1: 269) had considered it to be Volscian; Pisani (1964: 124, no. 56) considers it Volscian or Marsian; Pulgram (1978: 142–144, P 26); Morandi (1982: 153–154).

pa . ui . pacuies . medis | *uesune . dunom . ded* | *ca . cumnios . cetur*

Latin *Pa. Vi. f. Pācuvius meddix Vesonae dōnum dedit. Ca. Cumnius cēnsor.*

'Pacus Pacuvius, son of Vibius the magistrate gave (this object as) a gift to Vesuna. Gaius Cominius, censor.'

Plate 3. Marsian: Inscription from Antinum

Discussion: Most of the inscription contains proper names (*pa.*, *ui.*, *uesune* (in the dat. sg.), *ca.*, *cumnios*). The remaining words are not difficult to recognize and interpret: *medis* parallels Lat. *meddix* 'magistrate' (which is borrowed from Oscan, cf. **meddíss**); *dunom* equals Lat. *dōnum* 'gift'; *ded* is probably an abbreviation of *dedet* 'X gave' (Lat. *dedit*); and *cetur* appears to be equivalent to Lat. *cēnsor* 'censor'.

4.2.6. Oscan

The term "Oscan" is, as noted in the previous chapter, more accurately used of a language than of a people, though it is often used to refer to both the language and its speakers. "Oscan is the name given to the dialect which the Sabellians [or Samnites] introduced into Campania, the land of the Osci or Ὀπικοί, but clearly it was not the original speech of this tribe ..." (Whatmough 1937: 186). The Romans referred to the language of the Sabellians as "Oscan" because the Oscans were apparently the first Sabellians whom the Romans encountered. A parallel situation can be found in modern Europe: in French the word for "German" (both language and people) is *allemand*, which is the name of a single Germanic tribe, the *Alemani*.

Documents in Oscan number over two hundred. Most of these are ritual inscriptions which contain only proper names, but there are enough continuous texts in this language that its overall structure is well understood. The most important are the *Tabula Bantina*, discussed below; the Bronze Tablet from Agnone (ca. 250 B.C.E.), which was discovered in 1848 and is considered by some specialists to be the oldest Oscan inscription; and the Cippus Abellanus (ca. 150 B.C.E.), which was discovered in 1745. Oscan inscriptions are written mostly in the native Oscan alphabet, which is derived from Western Greek through Etruscan. They date generally from the fifth century B.C.E. to the middle of the first century B.C.E.

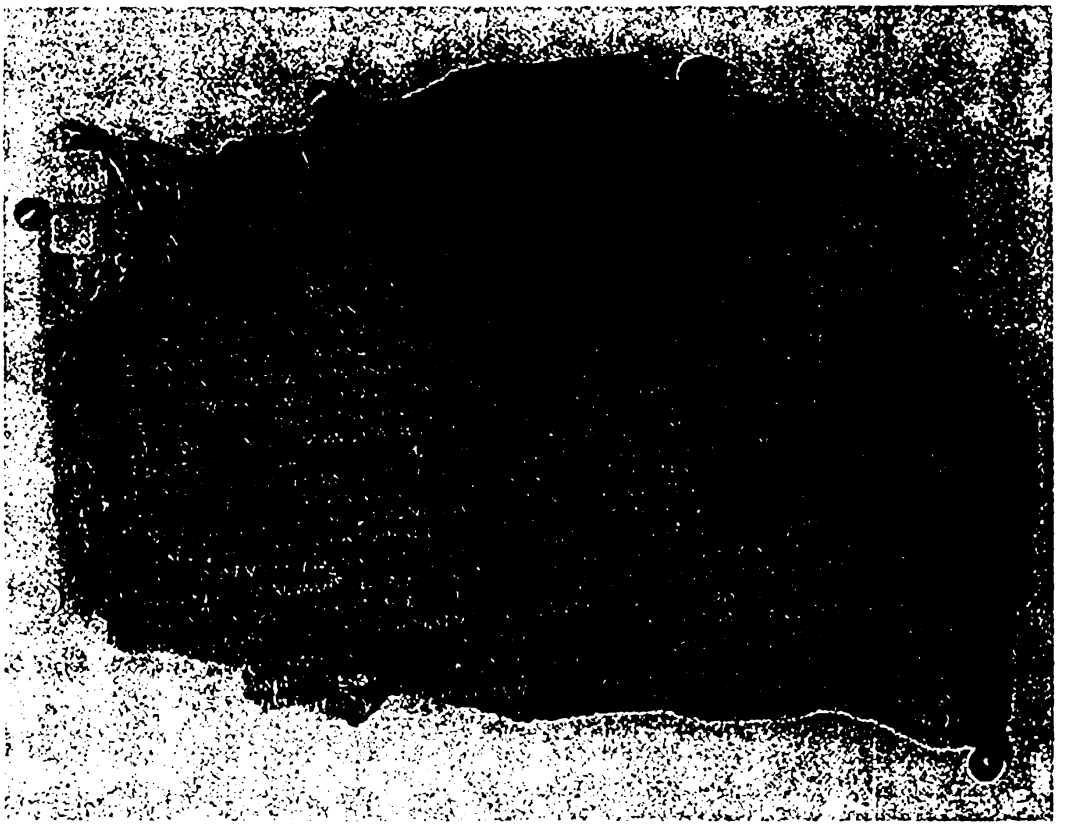

Plate 4. Oscan: Tabula Bantina

The Oscan text reproduced here is from the *Tabula Bantina*, a bronze tablet discovered in 1793 in Apulia which contains a series of municipal regulations from the town of Bantia (plate 4). A mutilated Latin text on the reverse side of the tablet dates it to somewhere between 133 and 118 B.C.E. This particular Oscan text is written in the Latin alphabet, the only such example. Cited here is the second paragraph, a well-connected text. Because of its length, this is the only citation from Oscan included in this survey.

Buck (1904: 231ff.); Vetter (1953: 13–28, no. 2); Bottiglioni (1954: 243–248, no. 79); Pisani (1964: 53–61, no. 9); Prosdocimi (1978a: 887–896); Morandi (1982: 134–136). The text and Latin translation are after Pisani, with a few emendations added.

Pis . pocapi . t . post . post . exac . comono . hafiesṭ meddis [.] *dat . castrid . loufir* | *en . eituas . factud . pous . touto . deiuatuns . tanginom . deicans . siom . dat . eizasc . idic . tangineis* | *deicum . pod . ualaemom . touticom . tadait . ezum nep . fefacid . pod . pis . dat . eizac . egmad . min*[*s*]| *deiuaid . dolud . malud . suaepis . contrud . exeic . fefacust . auti . comono . hipust .*

molto . etan | *to . estud . n . ΦΦ . In . suaepis . ionc . fortis . meddis . moltaum . herest . ampert . minstreis . aeteis* .| *eituas . moltas . moltaum . licitud .*

Oscan *Pis pocapit post post exac comono hafieț meddis dat castrid*
Latin *Quis quandōque posthac comitia habēbit magistrātus dē fundō*

loufir | *en eituas factud pous touto deiuatuns tanginom deicans*
vel in pecūniās facitō ut populus iurātī sententiam dīcant

siom dat eizasc idic tangineis | *deicum pod ualaemom touticom*
sĕ dē iīs id sententiae dīcere quod optimum pūblicum

tadait ezum nep fefacid pod pis dat eizac egmad min[s] | *deiuaid*
cēnseat esse nēve fēcerit quō quis dē eā rē minus iuret

dolud malud suaepis contrud exeic fefacust auti comono hipust
dolō malō Sīquis contrā hoc fēcerit aut comitia habuerit

molto etan | *to estud n .ΦΦ. In suaepis ionc fortis meddis*
multa tanta estō: n MM. Et sīquis eum potius magistrātus

moltaum herest ampert minstreis aeteis | *eituas moltas moltaum licitud*
multāre volet dumtaxat minōris partis pecūniae multae multāre licetō

'Whatever magistrate shall hereafter hold an assembly in a suit involving a piece of land or money, let him make the people pronounce judgment after having sworn that they will render such judgment as they believe to be for the best public good, and let him prevent anyone from swearing in this matter with guile. If anyone shall act or hold an assembly contrary to this, let the fine be 2000 sesterces. And if any magistrate prefers to fix the fine, he may do so, provided it is for less than half the property of the guilty person.'

Discussion: *Pis* 'who(ever)' (Lat. *quis*) offers a clear example of labializing in the Oscan–Umbrian dialect group, in which the PIE labiovelar $*k^{\mu}$ is realized as *p*; cf. also *pod* (Lat. *quod*), and *suaepis* (Lat. *sīquis*), *pocapit* (Lat. *quandōque*); the reading Lat. *fundō* '(defined) piece of land' for Osc. *castrid* follows Pisani's interpretation, against Buck, who translates *castrid* as 'death penalty', equal to Lat. *capite*; *loufir* appears to be an impersonal form of the verb *louf-* (Lat. *lubet*) 'it pleases', here 'as one wishes, or'; *eituas* 'portable goods, money' is based on the verb $*h_1ei$- 'go'; note final *-d* in 3rd sg. fut. imper. *factud* (Lat. *facitō*), seen also in *estud*, *licitud*; *deiuatuns* is a perf. pass. part. inflected as a nom. pl., even though it is dependent on the nom. sg. *touto* 'people', with a collective interpretation; *deicans* is the 3rd pl. subj. of *deik-* (Lat. *dīc-*) 'say', with *-ns* from **-nt*; *eizasc* is most likely an abl. pl. 'them', possibly a mistake for *eizaisc*; *ualaemom* 'best' is probably cognate

with Lat. *valēre* 'to be strong'; *ezum* is the infinitive form 'to be' (Lat. *esse*); *fefacid* is the 3rd sg. perf. subj. of *fak-* 'do, make' (Lat. *facere*); *contrud* (Lat. *contrā*) continues the archaic ablative marker *-d* (also *castrid*, *egmad*, *dolud*, *malud*); *mins* (Lat. *minus*) shows syncope of the vowel in the final syllable (< **minis*?). The symbol *Φ* represents the number 1000. It is a combination of *D* '500' joined to a reversed *D* '500'.

4.2.7. Paelignian

The Paeligni, along with the Marrucini, Vestini, and Marsi, formed an alliance against Rome during the Second Samnite War and later joined Rome after the defeat of the Samnites ca. 304 B.C.E. They inhabited an area in the Abruzzi, east of Rome. There are very few inscriptions from Paelignian; what exists seems to be from about the middle of the first century B.C.E.

a. The first example of Paelignian cited here comprises the last two lines of the Herentas inscription, which was found in a grave at Pentima near Corfinio in 1877 (plate 5). The inscription is apparently from about the middle of the first century B.C.E.

Vetter (1953: 145–149, no. 213); Bottiglioni (1954: 331–332, no. 122); Pisani (1964: 114–116, no. 47); Pulgram (1978: 134–142, P 25); Durante (1978: 799–780); Morandi (1982: 145–147).

eite . uus . pritrome pacris puus . ecic | lexe lifar . dida . uus . deti. hanustu . herentas

Latin *Īte vōs in laetitiam, benevolī quōs hoc lēgisse libeat. Det vōbīs dīvitiās, honesta Herentas*

'Go forward into pleasure, you whom it pleases to have read this. May distinguished Venus give you riches.'

Discussion: There are several forms in this text on which most commentators agree. The first two words *eite . uus* are clearly equivalent to Lat. imp. pl. *Īte vōs* 'you go'; *dida* 'may X give' appears to be a present subjunctive of a reduplicated form of the verb, with loss of final *-d*; and *herentas* is generally recognized as being identified with *Venus*. But the inscription has more than a few disputed readings: *pritrome* may either reflect the construction seen in the first part of Skt. *prītiṁ gacchata* 'be pleased' (lit. 'go to pleasure'), with *Īte vōs* equivalent to *gacchata*, or else it may represent a connection with Lat. *praeter* 'beyond', here in the sense of 'forward'; *puus* may be a substitute for an original nom. pl. **quoi*, which parallels Lat. *quī*, though a more secure reading places it as a reflection of the acc. pl. (= Lat. *quōs*);

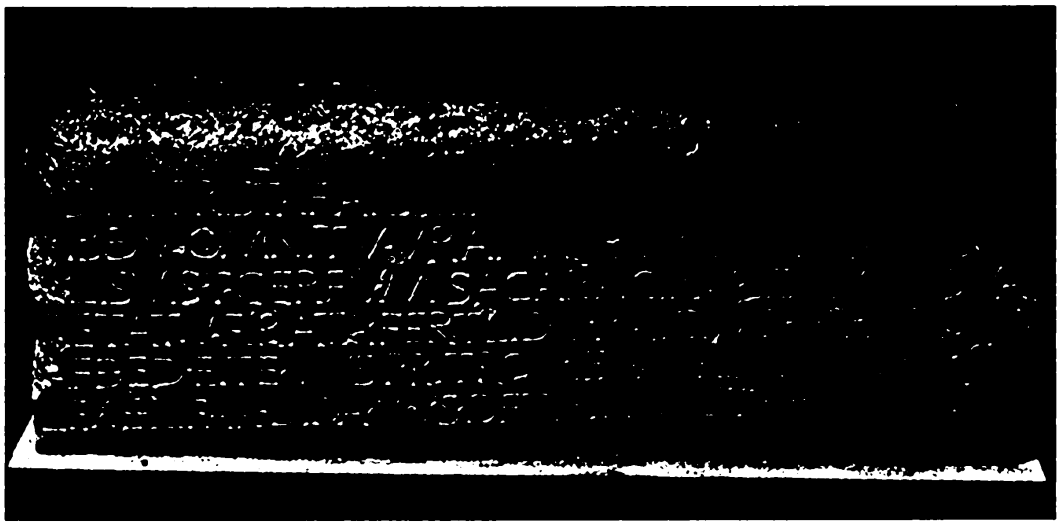

Plate 5. Paelignian: Herentas

lexe may be either an infinitive, morphologically equivalent to Gk. λέξαι, or it may correspond to the 2nd pl. Lat. *lēgistis* 'you have read', a reading which assumes an *s*-aorist in *lexe*; *lifar* is either an impersonal form (cf. Umbr. *ferar* 'let one carry'), or, perhaps, a form of the name of the deity *Līber*; *hanustu* is probably equivalent to Lat. *honestus* 'honorable, distinguished'. In light of these confusions, the translation above, after Pisani (1964), is not certain.

b. A second example of Paelignian is this short funeral text found in 1879 at Pentima.

Conway (1897, 1: 244); Vetter (1953: 149–150, no. 214); Bottiglioni (1954: 332–333, no. 123); Pisani (1964: 116, no. 48); Durante (1978: 798).

pes . pros . ecuf . incubat | *casnar . oisa . aetate* | *c. anaes . solois . des . forte* | *faber*

Latin *Pius probus hīc incubat senex, ūsā aetāte, C. Annaeus Solloeus dīves, fortiter strēnuus*

'Gaius Annaeus Solloeus lies here, faithful, honorable, an old man who enjoyed his life, vigorously active.'

Discussion: A few interesting features in this inscription are the forms *pros* < **profos*, with the same phonetic outcome as the dat./abl. pl. *-fos* (Lat. *-bus*); *ecuf* reflects the pronominal stem *eko-*, with the same *-uf* seen in Osc. **puf** 'where', Umbr. *pufe*; *casnar* 'old man' is a common Oscan–Umbrian form which by chance is attested in this Paelignian inscription. It is mentioned by Varro (*Ling.* 7.29): *Item significat in Atellanis aliquot Pappum senem quod Osci casnar appellant* 'Likewise in several

Atellan farces [the word *cascus* 'old'] denotes Pappus [an old man], because the Oscans call an old man *casnar*'; and *faber* 'strong', which could reflect Lat. *faber* 'artisan'.

4.2.8. Sabine

Sabine does not exist in any extant form as a distinct language with connected texts. Sabini are usually referred to as a people rather than as speakers of a language (rather the opposite of the situation with Oscan and Oscans). The term "Sabine" in a dialectal sense is often used as a general designation for the "rustic" non-Latin dialects around Rome, though Varro frequently refers to Sabine as though it were a separate language, apart from Latin. Varro's use of the term and the existence of a few local lexical and phonological peculiarities in the data motivate the designation of Sabine as a separate language. The material is all in the form of glosses.

Conway (1897, 1: 352–363); Vetter (1953: 362–378).

1. *alpo-*	Lat. *albus*	'white'
2. *auso-*	Lat. *aurum*	'gold'
3. *casco-*	Lat. *vetus*	'old'
4. *cesna*	Lat. *cēna*	'dinner'
5. *cumba*	Lat. *lectīca*	'litter'
6. *cupenco-*	Lat. *sacerdōs*	'priest'
7. *curis*	Lat. *hasta*	'lance'
8. *fasēna*	Lat. *harēna*	'sand'
9. *fedo-*	Lat. *haedus*	'young goat'
10. *firco-*	Lat. *hircus*	'he-goat'
11. *hernae*	Lat. *saxa*	'rocks'
12. *tebae*	Lat. *collēs*	'hills'

4.2.9. South Picene

Extant material from South Picene is relatively scant and cannot be translated with confidence. The alphabets in which it is written are not uniform from one locale to another, though all seem to be derived from a North Etruscan type influenced by Greek. There has been considerable disagreement over the transcription of the South Picene inscriptions, though Marinetti (1985) has clarified many disputed points. The language of the South Picene material reflects an archaic member of the Oscan–Umbrian dialect group. Its relationship to the neighboring non-Italic North Picene is unclear.

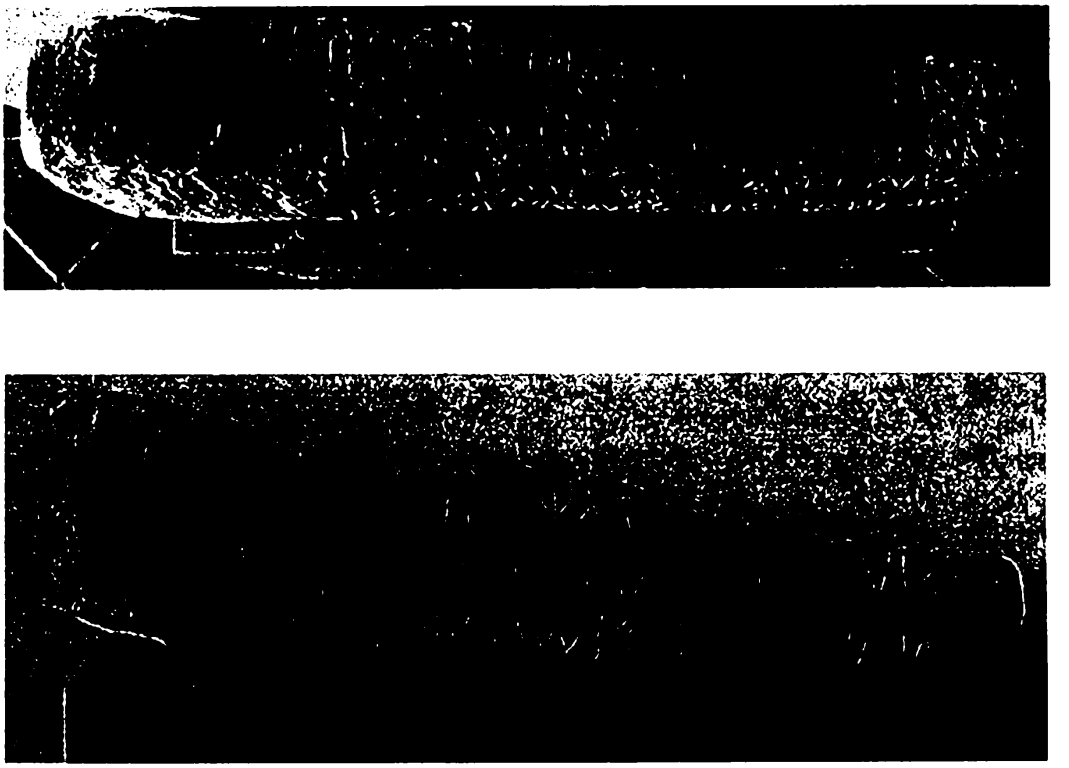

Plate 6. South Picene: Castignano stone

The South Picene material reproduced here is the text of the Castignano stone (plate 6), found at Montecalvo in 1890 in the neighborhood of Castignano, about 18 kilometers from Ascoli Piceno. This stone contains a number of inscriptional peculiarities involving vertically arranged dots (puncts) apparently used to mark syllable boundaries, word boundaries, and other orthographic conventions. The date of this inscription is uncertain.

Conway—Whatmough—Johnson (1933, 2: 233); Vetter (1953: 361, no. 516), Pisani (1964: 226–229, no. 68); Pulgram (1978: 75–77, P 19); Morandi (1978: 568–570); the text and transliteration of Marinetti (1985: 181–183) follow.

Matereſh : patereſh : qolof | ſtúr : qupíríh : arítih : ímih : puíh púpúnum : estufk : apaiús : | adstaſúh : súaſs : manus :| meitimúm

A translation of this inscription cannot be securely established, though it does appear quite clearly to be a dedication of some sort. The forms **matereſh** and **patereſh** may be either genitive singulars (< **-eis*: cf. Lat. *mātris*, *patris*) or dative singulars (< **-ei*, cf. Lat. *mātrī*, *patrī*), depending on how the final **-h** is interpreted; the situation is similar for **ímih**, which is perhaps a dative plural (CLat. *īmīs* 'low-

est'); and **puíh**, which might also be a dative plural (CLat. *quibus* 'for which'); **súaís** and **manus** may be dative plurals as well (= CLat. *suīs Mānibus* 'to their own deities'), but the whole inscription lacks an agreed-upon interpretation. These are merely suggestive possibilities.

4.2.10. Umbrian

According to the ancient tradition, the Umbrians were considered to be among the oldest peoples of Italy. They had well-established contacts with the Etruscans, who first taught them to write, and they participated in the First Samnite War against Rome. The Umbrian language is represented chiefly by the *Tabulae Iguvinae* 'Iguvine Tables', an extensive specimen which makes Umbrian the best-known Italic language after Latin. Judging from the Tables and from Umbrian glosses, it seems that Umbrian was still being spoken as late as 90 B.C.E., though Latinization is evident in materials from this period.

The *Tabulae Iguvinae* were discovered in 1444 at Gubbio, ancient Iguvium, which is about 25 km northeast of Perugia. The Iguvine Tables are not only the most significant specimen of Umbrian; they are the longest non-Latin text from the Italic languages. Other Umbrian materials are thirty short inscriptions and some glosses. The Tables are represented in seven bronze tablets. There is a tradition that there were originally nine tablets and that two were lost. However, Prosdocimi (1984b) establishes that only seven tablets were ever found. The exact dating of the Tables has not been conclusive. Most of them are written in the Umbrian script, which is a clear derivative of Etruscan. These are demonstrably earlier than the others and are dated to the beginning of the third century B.C.E. The Tables which are recorded in the Latin alphabet, on the other hand, seem to have been written sometime in the first half of the first century B.C.E.

The subject matter of the Tables is a description of the acts of a group of priests called the Atiedian Brothers (the Tables are similar in content to the Roman *Acta Arvalium*, which are described in inscriptional remains from Rome and are mentioned in Varro *Ling.* 5.85). The Tables contain descriptions of the various ceremonies and functions of the brotherhood such as the taking of auspices, the sacrificing of victims, purification ceremonies, and so on. The passage cited here is from Table 5, side a (plate 7), and follows in the main Poultney (1959: 220), with some emendations. The text is followed by an interlinear Latin rendition.

Conway (1897, 1: 399–432); Buck (1904: 260, 301–302); Poultney (1959); Vetter (1953: 170–274, no. 239; Table 5a is discussed on pp. 220–226); Bottiglioni (1954: 259–322, no. 111); Pisani (1964: 126–219, no. 60; Table 5a is discussed on pp. 214–215); Prosdocimi (1978b); Morandi (1982: 75–114).

Esuk. frater : atiieřiur :
eitipes : plenasier : urnasier : uhtretie
t. t. kastruçiie : aŕfertur : pisi : pumpe :
fust : eikvasese : atiieřier : ere : ri : esune :
kuraia : prehabia : piře : uraku : ri : esuna :
si : herte : et : pure : esune : sis : sakreu :
perakneu : upetu : revestu : puře : teřte :
eru : emantur : herte : et : pihaklu : pune :
tribŕiçu : fuiest : akrutu : revestu :
emantu : herte :

Umbr. **Esuk frater atiieřiur**
Latin *Ita frātrēs Atiediī*

eitipes plenasier urnasier uhtretie
*dēcrēvērunt plēnāriīs ordināriīs *auctūrā*

t. t. kastruiie aŕfertur pisi pumpe
T. Castrucii T. f. Flāmen quīcumque

fust eikvasese atiieřier ere ri esune
erit in collēgiīs Atiediīs is reī sacrae

kuraia prehabia piře uraku ri esuna
cūret praebeat quidquid ad illam rem sacram

si herte et pure esune sis sakreu
sit oportet et quī in sacrificiō sint. Hostiās

perakneu upetu revestu puře teřte
sollemnēs dēligitō revīsitō cum datur

eru emantur herte et pihaklu pune
eārum accipiantur oportetne et piāculōrum cum

tribŕiçu fuiest akrutu revestu
terniō fiet ex agrō revīsitō

emantu herte
accipiantur oportetne

'The Atiedian Brothers resolved as follows at the regular annual festival during the auctorship of Titus Castrucius, son of Titus. Whoever shall be *adfertor* [chief priest in the cult] among the members of the Atiedian college, he shall look after the religious ceremony, and provide what is necessary for that ceremony, and decide what persons shall be present at the ceremony. He shall select the sacred articles and those brought from elsewhere. Whatever are offered, he shall examine whether any of them

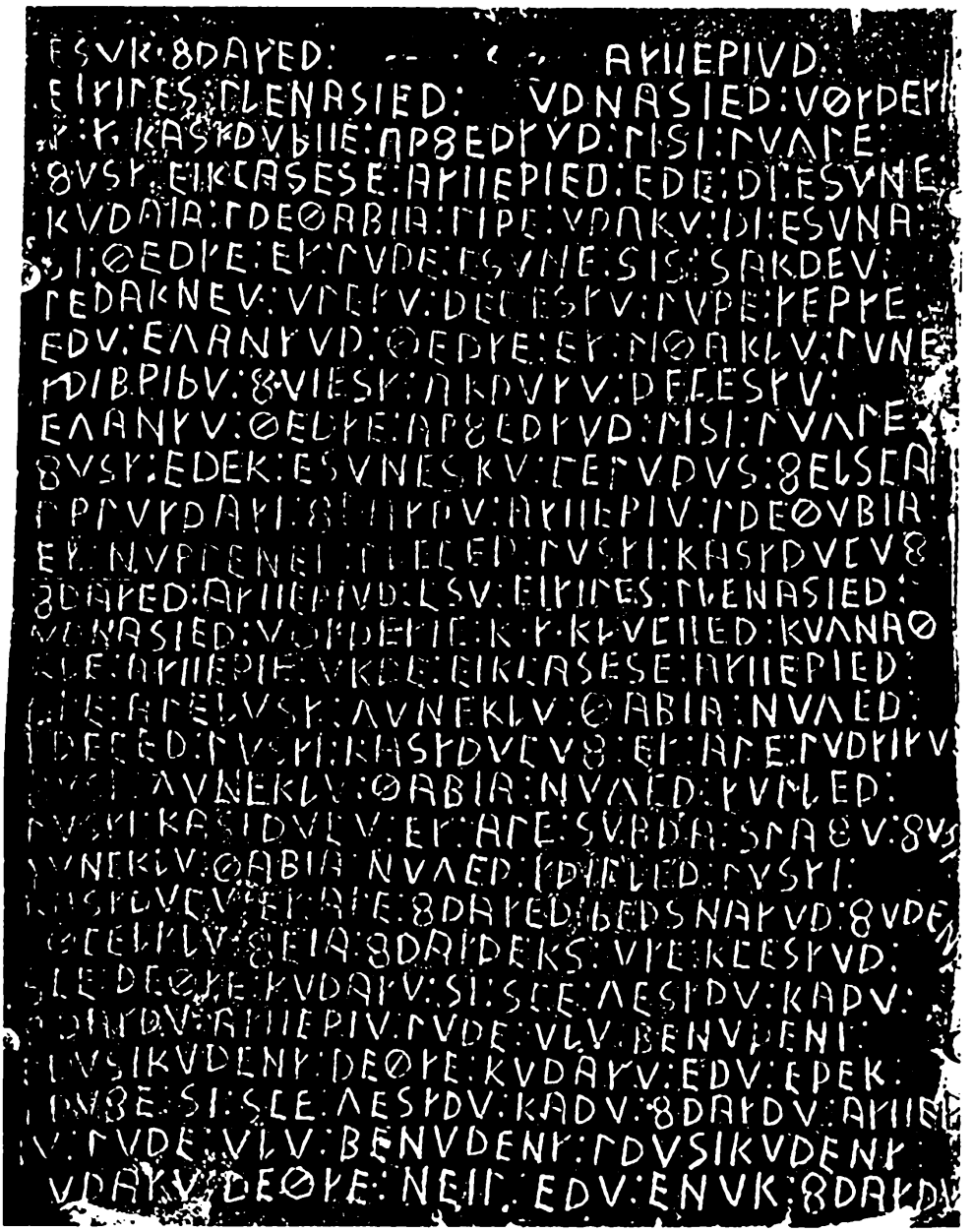

Plate 7a Umbrian: Tabulae Iguvinae

should be accepted, and when there is to be a triad of propitiatory offerings, he shall make an inspection in the field, whether they should be accepted.'

Discussion: **eitipes** is probably a 3rd pl. perf. of a verb, written in an older form (*-fes* is expected) because it is representing a decree; cf. Osc. **afkdafed** '*dĕcrēvit*' [X has decreed]; **plenasier urnasier** is an abl. pl.; **uhtretie** is either an abl. sg. or, more

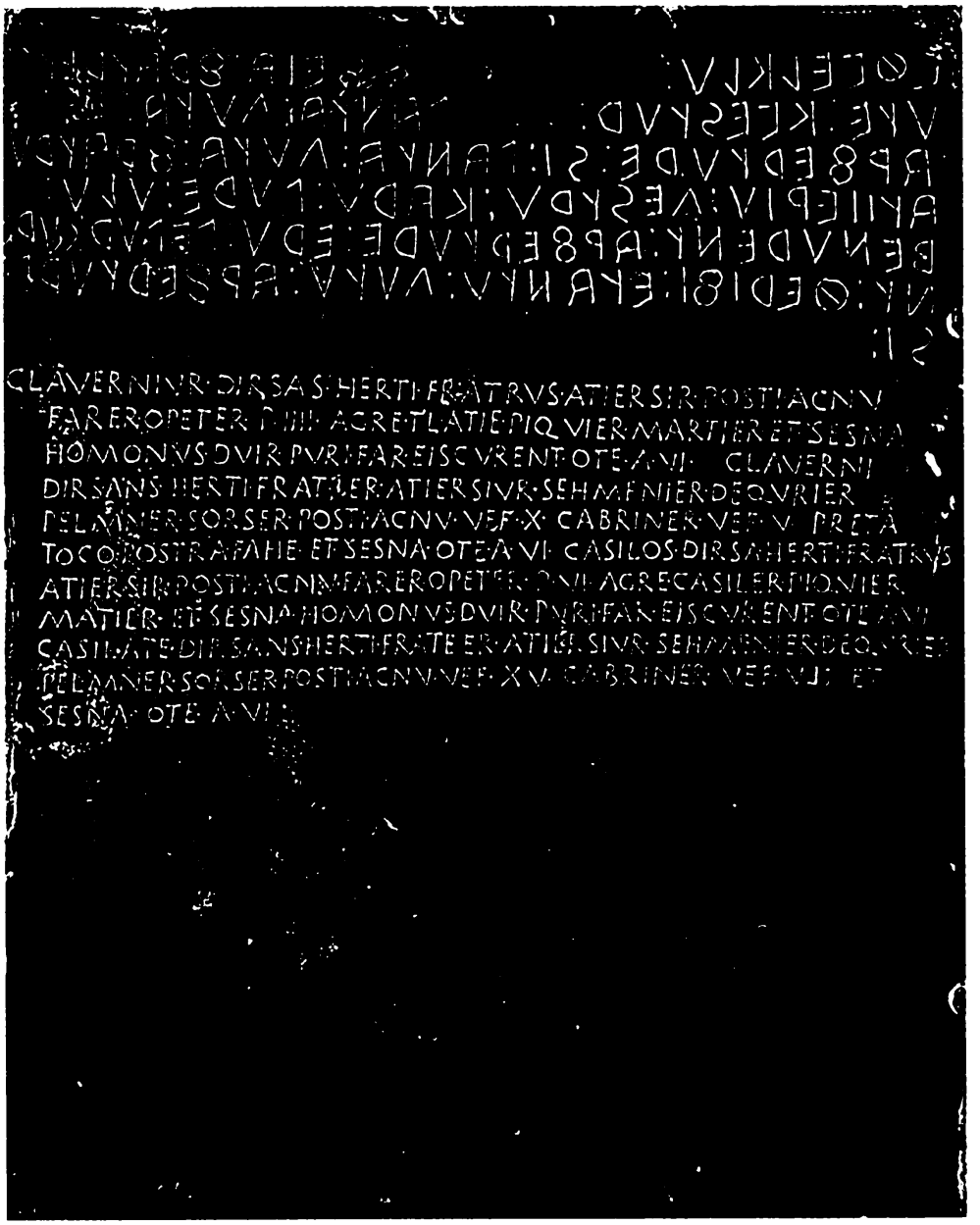

Plate 7b Umbrian: Tabulae Iguvinae

likely, a locative (Lat. **auctūrā* in the gloss is its conjectured equivalent). For the ending of **uhtretie**, cf. **kvestretie** 'in the quaestorship'; **pisi** (also **pumpe**, **piře**, **pure**, **puře**) reflect the labializing Oscan–Umbrian dialect as opposed to the labiovelarizing Latin dialect (cf. *quī*, *quid*, etc.); **eſkvasese** is most likely an abl. pl. followed by the postposition *-e*; **ri esune** is in the dative after **kuraia**; **kuraia** is a pres. subj., from a base *kūrā-* reflected in Lat. *cūrō* 'I care', Pael. *coisatens* 'they cared'; **uraku** is an abl. sg. fem. followed by the postposition *-ku*; **si** and **sis** are pres. subj. following

herte 'one should'; **fuiest** is a future, comparable to Lat. *fiet*; **akrutu** is a disputed form. It may be an abl. sg. of *ager*, followed by the postposition *-tu*, the interpretation followed here, or it could be a reflection of a putative 2nd or 3rd future imperative **agrōtōd* 'take', or it may reflect the meaning *deinceps* 'next'; **emantur** is in the pres. subj., after **herte** 'one should'.

4.2.11. Vestinian

Vestinian is the name given to the language spoken by the Vestini, who lived on the eastern side of Italy near the Picenes and the Marrucini. Their chief settlement was the town of Aufinum (modern Ofena).

The following inscription incised on a stone stele may be as old as the mid third century B.C.E. It is one of only two Vestinian specimens, the scarcity of which attests to their early conquest by the Romans in the late fourth century B.C.E. This one was found near Navelli, northwest of Popoli (plate 8). The only non-Latin forms in this inscription are *duno*, *didet*, and *brat*, which may be connected with *grātus* 'grateful'.

CIL 1^2.394; Vetter (1953: 155, no. 220); Bottiglioni (1954: 329–330, no. 119); Pisani (1964: 121, no. 53); Pulgram (1978: 149–151, P 28); Morandi (1982: 151).

ţ . uetiǫ | duno | didet | herclo | iouio | brat | data

Latin *T. Vetius dōnum dedit Herculī Joviō. Grātē data*

'Titus Vetius gave (this as) a gift to Hercules Jouius. Gratefully given.'

4.2.12. Volscian

The Volsci lived in close proximity to Rome, in southern Latium, and had a long history of bitter conflict with their Roman neighbors. Their language, Volscian, is known from several inscriptions, a few glosses, and place and personal names. What remains of Volscian is written in an archaic Latin alphabet and goes back to the third century B.C.E. For a review of the Volscian evidence, see Rix (1992a).

The inscription cited here is the text of the bronze Tabula Veliterna, which was discovered in Velletri in 1784 (plate 9). The text represents a judicial decree, dedicated to the goddess Declona by two magistrates. Since the exact meaning is very much in doubt, the usual rendition into Latin is omitted. The following translation adopts many of the interpretations found in Rix (1992a).

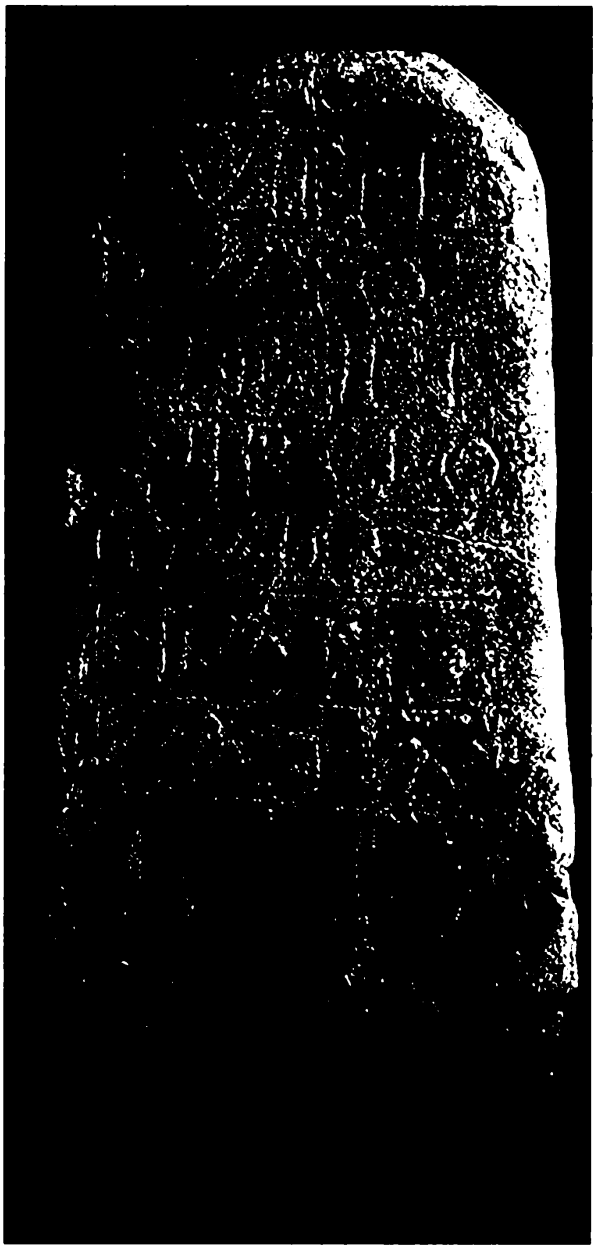

Plate 8. Vestinian: Inscription from Navelli

Plate 9. Volscian: Tabula Veliterna

Vetter (1953: 156–158, no. 222); Bottiglioni (1954: 338, no. 136); Pisani (1964: 122–124, no. 55); Pulgram (1978: 151–157, P 29); Morandi (1982: 151–152); Rix (1992a: 40–47).

deue : *declune* : *statom* : *sepis* : *atahus* : *pis* : *uelestrom*
façia : *esaristrom* : *se* : *bim* : *asif* : *uesclis* : *uinu* : *arpatitu*
sepis : *toticu* : *couehriu* : *sepu* : *ferom* : *pihom* : *estu*
ec : *se* : *cosuties* : *ma* : *ca* : *tafanies* : *medix* : *sistiatiens*

'To the goddess Declona this is decreed. If anyone will have snatched [some foliage or firewood] for himself, even if it were [for] a sacrifice, it will be a violation. Let [the guilty one] place in arrangement an ox and coins for the jars and for the wine. If anyone (will have taken the foliage or firewood) with the approval of the public assembly, the carrying away will be without violation. Egnatus Cossutius, son of Seppius and Marcus Tafanius, son of Gavius, magistrates, established [this].'

Discussion: Among the more secure items in this inscription, the following are noteworthy: *deue* is cognate with Lat. *dīvae* 'divine' in the dat. sg. fem.; *declune* reflects Lat. *Declōnae*; *statom* reflects Lat. *statūtum* 'decree'; *sepis* mirrors Lat. *sī quis* 'if anyone'; *atahus* seems to be a form related to Lat. *ta(n)g-* 'touch'; *façia* is equivalent to the Lat. subjunctive *faciat* 'X might do'; *bim* equals Lat. *bovem* 'cow, ox'; *asif* equals Lat. *assēs* 'coins'; *uinu* equals Lat. *vīnum* 'wine'; *sepu* is cognate with Lat. *sapere* 'to know', Osc. *sipus*, and forms an ablative absolute with *toticu couehriu* 'with the public assembly knowing'; *toticu* 'public' is identical with Osc. *toutico*, which is derived from the substantive *touto* (Umbr. *tota*) '*rēs pūblica*' [republic], (cf. Goth. *þiuda*, OE *þēod* 'people, nation'); *couehriu* mirrors Lat. *cūria* 'curia, court', possibly from **ko-uiri-iā* 'collection of men'; *ferom* is an infinitive form, equivalent to Lat. *ferre* 'to carry', here serving as the subject of *pihom estu*; *pihom estu* is equivalent to Lat. *fās est* 'it is right' (i.e. done without religious infraction); *sistiatiens* is a perfect stem of the root **sistā-* (< PIE **steh*$_2$-) plus the sign of the perfect *-t(t)* and the third plural inflectional ending *-ens* (see Wallace 1985).

4.3. Samples of non-Italic languages

4.3.1. Celtic

4.3.1.1. Gaulish

There are only a few inscriptions from Italy which can be securely identified as Gaulish, as well as a fairly large number of glosses. One is from Briona, about 10

km from Novara in the Northwest. Because of certain inconsistencies in the lettering, as well as problems in the translation, the exact meaning of the Briona inscription remains vague. (See Tibiletti Bruno 1978a: 155–157 and especially Lejeune 1988: 13–24 for commentary).

Somewhat more secure is the bilingual Latin–Gaulish inscription of Todi, ancient Tuder (plate 10). This inscription is made up of seventeen lines inscribed on both sides of a block of stone, with Side a (the "**lokan**" side) having eight and Side b (the "**artuaš**" side) having nine, though with restorations the number of lines increases to twenty (nine and eleven, respectively). The inscription largely repeats itself on each side apart from the words **lokan** and **artuaš**, which allows for a fairly secure restoration of missing letters.

CIL 11.4687; Conway—Whatmough—Johnson (1933, 2: 175–178); Lejeune (1971: 29f.); Morandi (1982: 193–194); text follows Lejeune (1988: 41–52).

	Side a		Side b
Latin	[ATEGNATI]	Latin	[ATEGNATEI DRV]
	[DRVT]I[.]F[...]		[TEI F ...]
	[C]OISIS [ ]DRVTI F.		[COI]SIS
	[F]RATER EIVS		DRVTEI F. FRATER EIVS
	[M]INIMVS LOCAV[I]⟨T⟩		MINIMVS LOCAV
	[ST]ATVITQV⟨E⟩		IT ET STATVIT
Gaul.	**[at]eknati truti[k]ni**	Gaul.	**ateknati trut**
	[kar]nitu lokan ko[i]sis		**ikni karnitu artuaškoisis t**
	[tr]utiknos		**rutiknos**

A literal translation of the Gaulish is:

> 'Of Ategnatos, son of Drutos, Coisis, son of Drutos, built the tomb.'
> (i.e. 'Coisis [younger brother of Ategnatos], son of Drutos, built the tomb of Ategnatos, son of Drutos').

Discussion: The two epitaphs are concerned with the same death (that of Ategnatos), name the same people (a father and his two sons), and have the same content except that each side contains a different word for 'tomb'.

(Side A): **ateknati** is a compound (*Ate-gnatōs*), the gen. sg. of a masc. praenomen which contains a suffix *-ato-* indicating 'first' attached to a root indicating 'son' (= Lat. *gn-ātus*). A dative reading is also possible here, 'for Ategnatos'; **trutikni** is probably the gen. sing. of a patronym formed with the suffix *-ikno-*; **karnitu** appears to be the 3rd sg. pret. of a verb *kar-* 'to construct with stone, to amass stones'; **lokan**

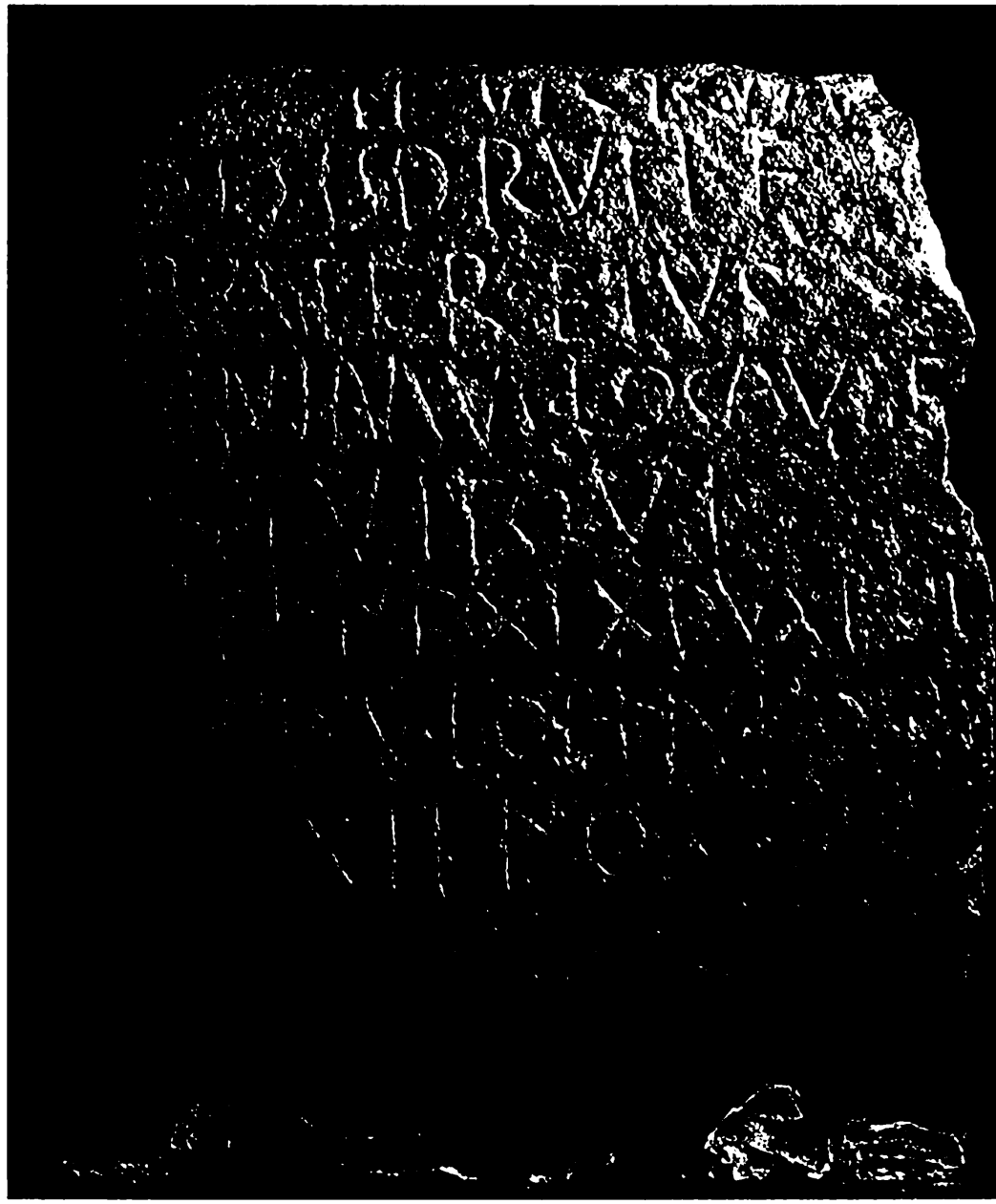

Plate 10a Gaulish/Latin: Bilingual inscription from Todi

appears to be the acc. sg. of a fem. noun (< *-*ām*) 'lying place, tomb'; **koisis** is a nom. sg. of a name; and **trutiknos** is the name *truti* suffixed with the patronymic suffix *-kno-*. As for the order of words, the name of the dead person is listed first, in prominent position.

(Side B): The text of Side B contains the word **artuaš**, an acc. pl.(< *-*āns*) which is another word for 'tomb'.

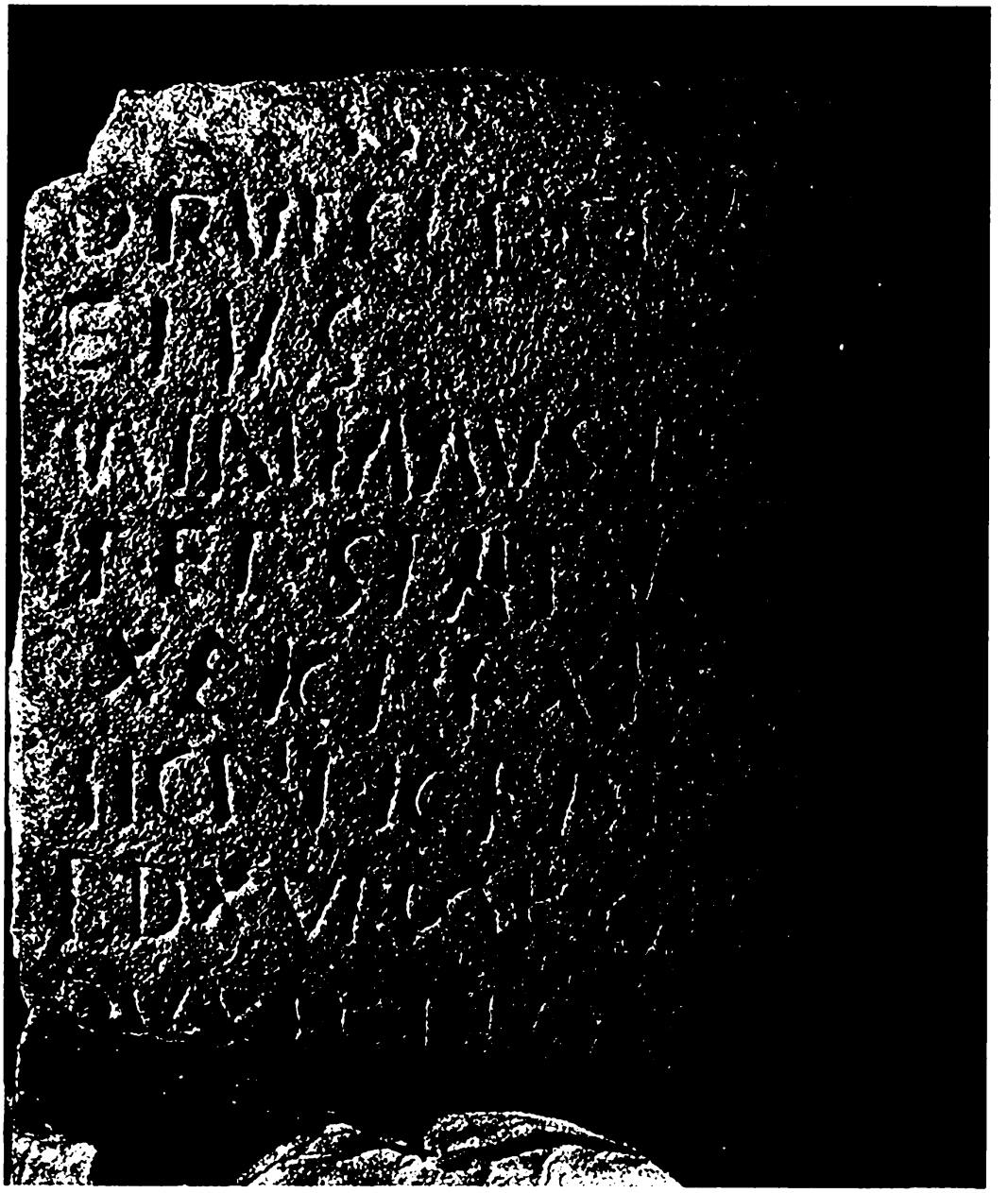

Plate 10b Gaulish/Latin: Bilingual inscription from Todi

4.3.1.2. Lepontic

The written data in Lepontic are sparse and rather late, stemming mostly from the early second to mid first centuries B.C.E., though the existence of some personal names in inscriptions extends attestation to a much earlier period, perhaps even the sixth century B.C.E. Lepontic materials come from a fairly narrow geographical

Plate 11. Lepontic: Vergiate stone

space in northwest Italy. Lepontic is traditionally classified as "Kelto-Ligurian" (Conway—Whatmough—Johnson 1933, 2: 65–165), that is, a language related to Ligurian which has been "Celticized" by a Celtic superstratum, though modern specialists (e.g. Lejeune 1971, Eska—Evans 1993) regard it as Celtic proper. Lepontic has enough affinities with Gaulish that it might be considered a dialect of that language.

a. An important inscription of Lepontic is the Vergiate Stone, discovered in 1913 near Lago Maggiore (plate 11). It is a large inscription written in boustrophedon (serpentine) style in the Lepontic alphabet, with vertical puncts separating its seven words. Several analyses of this inscription are possible, since the exact meanings of some of the words are not securely known.

Conway—Whatmough—Johnson (1933, 2: 104–106); Pisani (1964: 285–286, no. 123); Lejeune (1971: 88–96); Tibiletti Bruno (1978a: 140–141); Morandi (1982: 189–190). Text follows Lejeune.

pelkui : pruiam : teu : karite : išos : kalite : palaṃ

'Teu constructed a funeral monument for Pelgus. The same one made the tombstone.'

Discussion: The first word of the inscription, **pelkui**, is a dat. sg. of a masc. name, *Pelgus*; **pruiam** is an acc. sg. fem., the object of **karite**; **teu** (which reflects a stem ending in *-ōn-*) is a name with the same base as *Teius*, *Teielius* in the nom. sg. masc., functioning as subject. A reading of **teu** as reflecting 'god' (< **deiuo-*; cf. Lat. *deus*) is also possible, though less likely; **karite** is the 3rd sg. of a verb **ker-* 'make' (cf. Skt. *kṛ-* and the discussion of the Todi inscription above), though in an alternate reading, Lejeune sees in **karite** a verb meaning 'close' (cf. Lat. *hortus* 'garden, enclosure'), with the rendering 'Teius closed the tomb'. The second line of the inscription begins with **išos**, which is apparently equivalent to Popular Lat. *ip-sus*, here rendered as 'he, the same one' (= **teu**); **kalite** appears to be a variant of **karite** 'made, built'; and **palaṃ** is an acc. sg. fem., the object of **kalite**, with the probable

meaning 'stone', or perhaps 'tomb'.

b. The second Lepontic inscription discussed here is the Latumaros Vase, an earthenware funerary vessel from a necropolis near the town of Ornavasso. The vase contains five separate graffiti in the Lepontic alphabet, apparently written in different hands. The first part of the inscription seems to be a dedication, while the remaining four appear to be abbreviations for proper names. This object has attracted much recent attention, and there have been some serious attempts to revise the traditional interpretation, reported below.

Conway—Whatmough—Johnson (1933, 2: 111–113); Pisani (1964: 286–287, no. 124); Lejeune (1971: 74–80, 1987); Pulgram (1978: 38, P 3); Tibiletti Bruno (1978a: 144–146).

latumarui : sapsutai : pe ǀ uinom : našom

'For Latumaros and Sapsuta, wine from Naxos.'

Discussion: The forms **latumarui** 'for Latumaros' and **sapsutai** 'for Sapsutai' are the names of the persons to whom the vase and its contents are dedicated: **latumarui** is a masc. dat., while **sapsutai** is a fem. dat.; **pe** 'and' equals the Lat. enclitic *-que*, and shows the development of PIE $*k^{\mu}$ as *p*, as in Gaulish, in contrast to its velar outcome in Celtiberian, as seen in *-Cue* in the Botorrita inscriptions; **uinom** clearly equals Lat. *vīnum* 'wine', and **našom** appears to be an adjective indicating *Naxium* 'from Naxos', both with final *-m* preserved. An alternate epigraphical interpretation of **uinom** and **našom** treats them as acc. plurals, viz. **uinoś** and **natoś** (< **-ons*) 'brilliant sons', with the whole inscription meaning 'To Latumaros and Sapsuta, (we wish you) brilliant sons', an interpretation which is convincingly refuted by Lejeune (1987).

4.3.2. Independent IE languages

4.3.2.1. Greek

Greek was established on the Greek mainland, the Aegean islands, the western coast of Asia Minor, Pamphylia, and part of Cyprus before 1000 B.C.E. Immigration into Sicily and southern Italy began before 725 B.C.E., and by 500 southern Italy and a large part of Sicily was colonized. The longstanding presence of Greek on Italian soil has resulted in a wealthy inscriptional corpus, not only from the coastal regions and Sicily, but also from Rome, where Greek enjoyed high prestige. Information on Greek and its inscriptional history is plentiful; a few examples from areas that were to become Latin-speaking are included in this survey.

a. The first sample of Greek is a very old three-line graffito, dated to the period

750–700 B.C.E., from a grave on the island of Ischia (earlier Pithekoussai) in the Bay of Naples. The inscription is on a geometric bowl; it seems to allude to the famous drinking cup of Nestor described by Homer in the *Iliad* (11.632–637). The first line attests the ownership of the bowl. Lines two and three are hexameters which were engraved after the vase was fired. Because of the difficulty of providing a fluid literal translation of this selection, the rendition into English is somewhat free.

Meiggs—Lewis (1988: 1–2, no. 1).

Νέστορος: ε̣[..]ι̣ εὔποτ[ον]: ποτέριο[ν:]
hὸς δ' 'ὰ⟨ν⟩ τῶδε π[ίε]σι: ποτερί[ο]: αὐτίκ̣α κ̣ῆνον
hίμερ[ος: hαιρ]έσει: καλλιστε̣[φά]νο: 'Αφροδίτ̣ες

'I am Nestor's cup, very good for drinking.
Longing for beautifully crowned Aphrodite will seize anyone who drinks from this cup, and leave him empty.'

Discussion: While grammatically unremarkable, the graffito is of some phonological interest in the way it does not distinguish some vocalic lengths, such as ε for η in ποτέριο[ν], π[ίε]σι, and [hαιρ]έσει; and *ō* for ου in ποτερί[ο]. (Vocalic values are established metrically.) The sequence ε[..]ι is clearly to be restored as εἰμί 'I am'. The graphic symbol ⟨h⟩ marks aspiration, which is not indicated in the original. Of more general interest from the Indo-European perspective are the stem forms of π[ίε]σι, εὔποτ[ον], and ποτέριο[ν], all from **peh₃(i)-* 'drink'. The root **peh₃(i)-* is also seen in Lat. *bibō* 'I drink' (< **pibō*) and more visibly in *potō* 'I drink heavily' and *pōculum* 'drinking cup' (< **pō-tlo-m*). The first part of καλλιστε̣[φά]νο is made up of καλλιστε̣ (καλλίστη) 'most beautiful', the superlative of καλή (cf. Skt. *kalyá-* 'healthy'). And of course the name 'Αφροδίτ̣ες is that of the Greek goddess of love.

b. The following selection is a curse inscribed on a bronze tablet, discovered in the region of ancient Bruttium in 1755. A date in the third century B.C.E. seems most likely for this inscription. It is one of a number of inscriptions from the Greek-speaking areas of Italy written in a North/West (Doric) dialect, with many features characteristic of this variety. The tablet appeals to an unnamed goddess for the return of some stolen property.

Pisani (1973: 119, no. 66); Schwyzer (1923 [1960]: 160, no. 315); Gager (1992: 192, no. 92).

ἀνιαρίζει Κολλύρα ταῖς προπόλοις τᾶς θεῶ | τὼς τρὶς χρυσέως τὼς ἔλαβε Μελίτα | καὶ οὐκ ἀποδίδωτι. ἀνθείη τᾶι θεῶι | δυωδεκάπλοα σὺν μεδίμνωι λιβάνω⟨ι⟩, | ὧι πόλις νομίζει. μὴ πρότερον δὲ τὰν

ψυχὰν ἀνείη, ἔστε ἀνθείη τᾶι θεῶι. | εἰ δὲ συνπίοι ἢ συμφάγοι, μὴ εἰς ἀῶ σᾶ | ἀθῶιος εἴην, ἢ ὑπὸ τὸν αὐτὸν ἀετὸν ὑπέλθοι.

'Kollura dedicates to the goddess's attendants the three gold coins which Melita took and isn't giving back. May she (Melita) offer to the goddess twelve times the value with a city-standardized measure of incense. May she not breathe freely until she makes this contribution to the goddess. If any woman drinks or eats with her (Melita), or enters under the same roof with her, may she not be safe and sound on the next day.'

Discussion: This inscription evidences many non-Attic features, including θεῶ for θεοῦ, τώς for τούς, τρίς for τρεῖς, χρυσέως for χρυσέους, δυωδεκάπλοα for δωδεκάπλοα, and σᾶ for σῶα. The form ἀποδίδωτι for ἀποδίδωσι shows the well-known dialect isogloss separating North/West Greek, in which the PIE 3rd person verbal marker **-ti* is preserved as -τι, from South/East Greek, in which it is changed to -σι. The phrase τὰν ψυχάν 'the soul' shows another dialect isogloss, in which PIE **eh₂* is realized as *ā* as opposed to the customary Attic-Ionic *ē* (τὴν ψυχήν). Note also the lack of nasal assimilation in συνπίοι, followed by the assimilated nasal in συμφάγοι. Of etymological interest in this selection are προπόλοις 'attendants' (πολέω 'I go about, plough'), which is cognate with Lat. *colō* 'I cultivate' (< **kʷel-*); τρίς 'three' is widely represented in IE, cf. Lat. *trēs*, Skt. *tráyaḥ*; ἀποδίδωτι '(she) gives back' is cognate with Lat. *dō* 'I give', Skt. *dádāmi*; δυωδεκάπλοα 'twelve' is a compound (δυώδεκα) with two widely distributed IE numerals, seen in Lat. *duo* '2', Skt. *dvā́(u)*, and Lat. *decem* '10', Skt. *dáśa*; νομίζει '(the city) holds as a custom' is cognate with Lat. *numerus* 'number', *nummus* 'money'; συνπίοι '(she) drinks with' (πῑ́νω) reflects the PIE root **peh₃(i)-*, seen in Lat. *bibō* (< **pibō*); ἀετόν is literally 'eagle' but has the additional meaning of 'pediment of a temple', here simply 'roof'. It has a cognate in Lat. *avis* 'bird', Skt. *víḥ*.

4.3.2.2. Ligurian

Though the Ligurians seem to have been spread far and wide across Western Europe, very few material remains of their language have survived. Their territory was located between the Apennines and the Gulf of Genoa, and they appear to have been living in a cultural backwater (Trump 1965: 166). Securely identifiable Ligurian material suggests an independent IE language which has been heavily influenced by surrounding Celtic languages. Following are a few Ligurian lexical items and roots, with their Latin equivalents.

Conway—Whatmough—Johnson (1933, 2: 158–165); Pulgram (1978: 35–36, P 1).

1. *asia*	Lat. *secāle*	'rye'
2. λεβηρίς	Lat. *cunīculus*	'cony rabbit'

3. The place names *Berigiema, Comberanea, Porcobera* all contain the common element *-ber-*, which may be related to Lat. *fer-ō* 'I carry' from PIE *b^her- 'carry'

4. *biuo-*	Lat. *vīvus*	'living' (contained in the name *Biuelius*)
5. *bormo-*	Lat. *formus*	'warm' (contained in the name *Bormiae*)
6. *-giem-*	Lat. *hiems*	'winter' (contained in the name *Berigiema*)
7. *tri-*	Lat. *trēs*	'three' (contained in the name *Triullī*)
8. *roudo-*	Lat. *ruber*	'red' (contained in the name *Roudelius*)

4.3.2.3. Messapic

Messapic is the name given to the language of a variety of southern Adriatic tribes from the heel of the Italian boot in Apulia. The tribes whose linguistic remains go under the name Messapic are the Apuli, Daunii, Peucetti, Messapi, Calabri, and Sallentini. Now demonstrated to be an independent IE language, Messapic was for some time connected by scholars with Illyrian, largely because of shared names attributed to Illyrian mythical characters, and also because the ancient tradition connected the Messapians with the Illyrians. (See Polomé 1966, Parlangeli—Santoro 1978 for discussion of "Illyro-Messapic".) Inscriptions from Messapic, of which there are more than 250, run from the sixth to the first centuries B.C.E.; only a few of these exceed four lines. A recent find in the Grotto della Poesia near Lecce in the far southeastern end of the Italian boot has increased the total number by twenty-two; these are still under active investigation (see De Simone 1988 for preliminary analysis). For a sketch of Messapic structure see Prosdocimi (1989–1990). For texts, see Parlangeli (1960), Krahe (1955, 1964a), Santoro (1982, 1984).

a. The first Messapic material discussed here is a dedication written on a stone in the shape of a sarcophagus, about a foot and a half wide and a foot from front to back, found near Ceglie Messapico, northwest of Brindisi and northeast of Taranto (plate 12). It is dated from the second half of the fourth century B.C.E. Several different readings are possible, with different word-divisions, though the general nature of Messapic votive inscriptions and the structure of Messapic onomastic formulas suggest the following reading and analysis.

Conway—Whatmough—Johnson (1933, 2: 306); Parlangeli (1960: 77–78); Krahe (1964a: 75); Pulgram (1978: 69–70, P 15).

dašta morθana ap	'Dasta Morthana gave (this)
rodita hipades	to Aphrodite.'

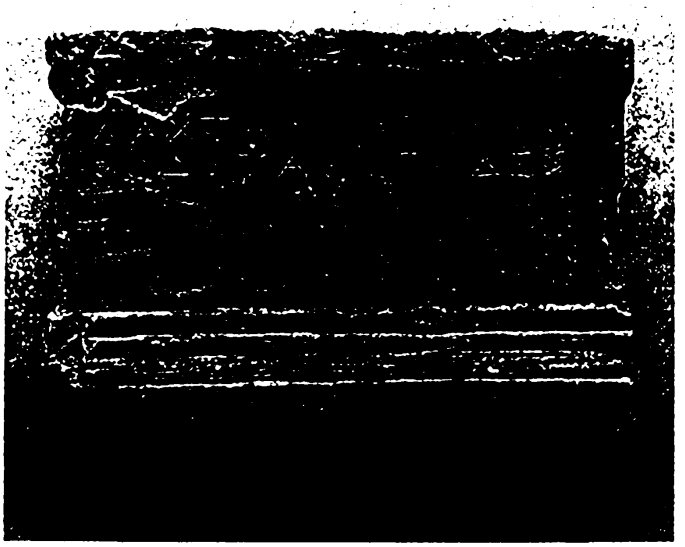

Plate 12. Messapic: Inscription from Ceglie Messapico

Discussion: The precise reading and translation of this text is in doubt, though it is generally agreed that the first two words **dašta** and **morθana** constitute a single name; **aprodita** is most likely a dat. sg.; **hipades** is apparently a verb form made up of a prefix *hipa-* (cf. Gk. ὑπό) and a 3rd sg. aorist of the verb 'give' (cf. Lat. *dō* 'I give'), with the final *-s* a marker of the aorist.

b. The following short text is inscribed on a staff found in 1795 in Taranto. There is a possibility that the staff is a copy of a lost original, though "the inscription itself is in any case perfectly good Messapic" (Conway—Whatmough—Johnson 1933, 2: 297). The inscription has three words, all in the genitive, indicating the owner of the staff.

Conway—Whatmough—Johnson (1933, 2: 295–297); Parlangeli (1960: 122–123); Pisani (1964: 237–238, no. 75); Krahe (1964a: 101); Parlangeli—Santoro (1978: 931).

blatθihi | kalatoras | baletθihi

'(This is the staff) of Blates, the town crier from Baletium.'

Discussion: The first and last words, **blatθihi** and **baletθihi**, show the genitive marker *-ihi*, which may be traceable back to PIE ***-osio***,* with *h* a weakened outcome of ***s***;* **kalatoras** is the gen. sg. of *kalator-* 'public crier'. The interpretation of **baletθihi** as a place name connected with Baletium is uncertain. It may be part of the name formula itself (Untermann in Krahe 1964a: 204).

4.3.2.4. North Picene

The North Picene inscriptions are dramatically different from those in the south of the Picene territory, which are clearly Italic. In fact, there is no agreement on whether the language represented in the North Picene inscriptions is even IE. Poultney (1979) has made a tentative classification of North Picene as IE based on his analysis of the Novilara Stele (below), the position adopted in this volume. Poultney's analysis is based on the occurrence of some IE-looking vocabulary, as well as on his observations of the overall phonological and morphological structure of the material in the inscription, which is of a decidedly IE character.

a. The longest example of North Picene is the Novilara Stele, which was discovered in Novilara in 1889. The stele itself is a rectangular block of sandstone 25 inches high and 17.5 inches wide. On one side is the inscription itself, consisting of twelve lines written in the Etruscan alphabet, plus several additional characters present in other Italic inscriptions. Surrounding the inscription is a zig-zag ornamental design along with a five-spoked wheel at the top. On the other side is an incised drawing of what appears to be a hunting scene. Accompanying archaeological material dates the stele to the sixth or fifth century B.C.E. The Novilara Stele contains only a few possibly recognizable words (e.g. **mimniś** = Lat. *men-* 'mind, remember', **polem** = Gk. (acc.) πόλιν 'city', **iśairon** = Gk. ἱερός 'mighty') but is otherwise unintelligible. The consonant clusters present in the text such as *kr*, *tr*, *tn*, *mn*, *pr*, *rt*, *sp*, *st*, and *nds* have a marked IE look about them and are consistent with what is reconstructed as PIE phonotactics. The prominence of the accusative-looking word ending *-em* in **roṭnem**, **polem**, **rotem**, and **teletaúṇẹm** also suggest IE declension.

Conway—Whatmough—Johnson (1933, 2: 215–216); Pisani (1964: 224, no. 66); Durante (1978); Poultney (1979). Text follows Pisani.

> **mimniś . erút . caareśtadeś | roṭnem . úvlin . parteṇ . úś | polem . iśairon . tet | šṷt . trat . neśi . krúš | tenạc . trút . ipiem . rotneš | lútúiś . θạlú . išperion . vúlłteś . rotem . teu . aiten . taśúr | śoter . merpon . kalatnelniś . vilatoś . paten . arnlúiś . baleśtenac . andś . etlšút . ḷakút . treten . teletaúlṇẹm . pọlem . tišú . śotriś . eúś**

b. A second possible example of North Picene is the following bilingual inscription from Pesaro (ancient Pisaurum), from the first century B.C.E. (plate 13). The North Picene (?) inscription probably means the same as the Latin, provided that the names are the same in both languages. There is a chance, however, that this inscription is in fact a Latin-Etruscan bilingual, as indicated by Rix (1984: 238, 1991).

Plate 13. North Picene/Latin: Bilingual inscription from Pesaro

CIL 1^2.2127; Conway—Whatmough—Johnson (1933, 2: 218–219); Pisani (1964: 225, no. 67); Pulgram (1978: 74–75, P 18); Rix (1991, 2: 315, no. 1.7).

(Latin) L•CAF] ATIVS•L•F•STE•HARVSPE[X] FVLGVRIATOR
(N. Picene?) **c]afates• lr• lr• netšvis• trutnvt• frontac**

'Lucius Cafatius, son of Lucius, (of the tribe) Stellatina, soothsayer (who inspects the entrails of the victims), lightning-interpreter.'

Discussion: A few noteworthy features of this inscription are the following: the sequence of the names in the native text and the Latin equivalent reflect a different order. In Latin the praenomen precedes the nomen gentile, while in the native text the order appears to be nomen gentile followed by praenomen; **netšvis trutnvt** may be a compound which mirrors Lat. HARVSPEX 'soothsayer', though the chances are good that *haruspex* is an Etruscan loan; **frontac** seems to be equivalent to Lat. FVLGVRIATOR 'lightning-interpreter', though the possibility of an Etruscan word exists here as well. The prominence of Etruscan vocabulary suggests the possibility that the native text is in Etruscan.

4.3.2.5. Raetic

Though the Raeti were apparently numerous and geographically widespread in what is now the north of Italy, southern Switzerland, and parts of Austria, they have left very little of their language. The texts that have survived are written in an Etruscan-like alphabet and seem to evidence some Etruscan-like features. Though the status of Raetic as an IE language is unclear, it is at least more likely that it is IE than that it is connected with Etruscan (Brunner—Toth 1987 claim that it is Semitic; Beekes 1993 shows that is not Etruscan). Raetic inscriptions exist from a variety of

different locales, most stemming from the fourth–third centuries B.C.E.

a. The Caslir Situla (also known as the "Situla Giovanelli"), discovered in 1825 at Caslir, about six miles north of Trento, is a bronze pot which contains a multiple inscription on five different parts of the vessel (plate 14). The words, though not fully understood, are best interpreted as a dedicatory formula in which somebody gave the object (a wine tankard?) to somebody else. Much of the material in this inscription appears to be names, but it is difficult to be sure of their grammatical roles in the dedication. The translation is therefore highly tentative.

Conway—Whatmough—Johnson (1933, 2: 26–29); Pisani (1964: 323–324, no. 137); Pulgram (1978: 39–41, P 4); Tibiletti Bruno (1978b: 233–234); Morandi (1982: 201–202); Schumacher (1992: 155).

lavisešeli
velχanu
lųp.nu pitiave
kusęnkus trinaχe
φelna vinutalina

'(Of the son of Lavis), to Velχanu (someone) gave (this) wine-bearing tankard, for Pitiave of Kusenku.'

Discussion: The first word **lavisešeli** has no secure interpretation, and it is possible that it is completely independent of the rest of the text. One suggestion (Pisani 1964: 323) is that it is a genitive of an Etruscan proper name 'of the son of *lavis-*'; **velχanu** may be a dative reflecting Lat. *Volcānus*, the god of fire, joined together with the following **lųp.nu** in a compound name, or part of one; **pitiave** may be a dative indicating the person to whom the gift is offered, or on whose behalf, followed by a genitive of another name, **kusęnkus**; most commentators agree that **trinaχe** is a verb indicating 'gave' or 'sent'; and finally **φelna vinutalina** is best interpreted as 'wine-bearing pail', with **vinutalina** evidencing the root *vinu-* 'wine' and **talina** possibly relatable to Lat. *tollō* 'I carry'.

b. The following two-line inscription was incised boustrophedon on the handle of a shovel found in Padua in 1899 (plate 15). The meaning of the inscription on the "Paletta di Padova" cannot be securely determined, though its status as a dedicatory text seems certain.

Conway—Whatmough—Johnson (1933, 2: 49–51); Pisani (1964: 321–322, no. 136); Pulgram (1978: 42–43, P 6); Tibiletti Bruno (1978b: 240–241); Schumacher (1992: 170).

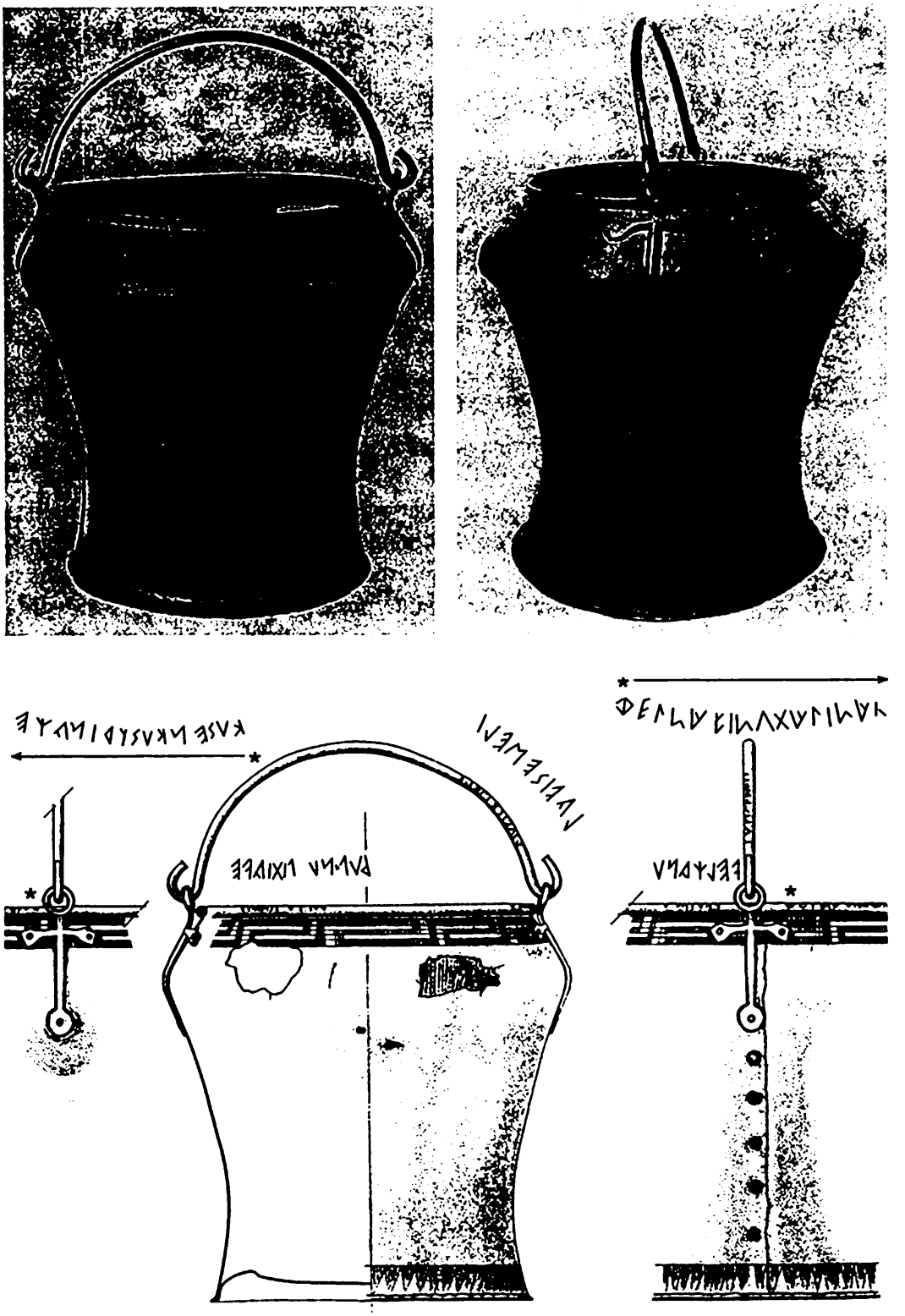

Plate 14. Raetic: Caslir situla

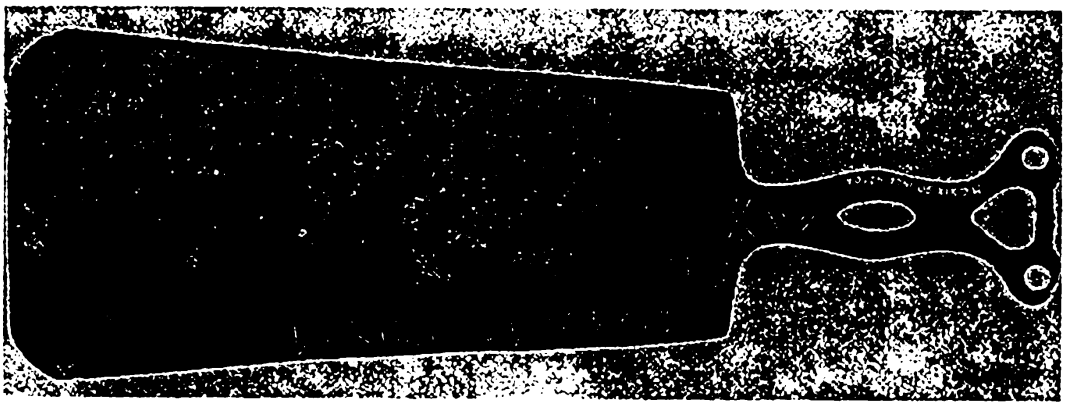

Plate 15. Raetic: Paletta di Padova

ęṭ•sualeutikukaiaṇ•nakinatarisakvil•

'Etsua gave (this) to Kaianakina Tarius Aquilius.'

Discussion: The sequence **ęṭ•sua** may be a name, *Etsua*; the next possibly recognizable word is **leutiku**, which either could contain a suffix indicating a gentilicum, recalling Etr. *-ke*, or could possibly carry a verbal suffix attached to a form which indicates 'X gave or made'. With this latter interpretation the following two words can be segmented as **kaiaṇ nakina**, a compound name; **taris** suggests an Etruscan genitive in *-s* 'of Taris', and the *-l* of **akvil** may reflect an Etruscan genitive in *-l*, though the morphological uncertainties are severe and the above translation seems to be the most neutral given the nature of dedicatory formulas.

4.3.2.6. Sicel

Sicel, or Siculan, is the name of the language ascribed to the Siculi, who inhabited most of Sicily and scattered areas of southern Italy. There are some points of comparison between Messapic and Sicel which suggest that the Siculi were an ancient tribe who once ranged far beyond Sicily and southern Italy. Sicel place names are found in Latium and elsewhere. However, all that remains of Sicel is a handful of inscriptions and a number of possible glosses. While there is general agreement that Sicel is IE, the evidence depends largely on the assumption of word breaks at certain locations in the available inscriptions, such as **esti** and **durom** in the following example.

a. The best known of the Sicel inscriptions is the Centuripa Vase, found at Centuripa in 1824 (plate 16). It is very old, from the fifth century B.C.E., written in the Siculan alphabet. This inscription has received so many irreconcilable translations that it seems pointless to reproduce any one of them, nor to attempt a new one. See Pisani (1964), Vetter (1962) for samples. The inscription follows, without word breaks.

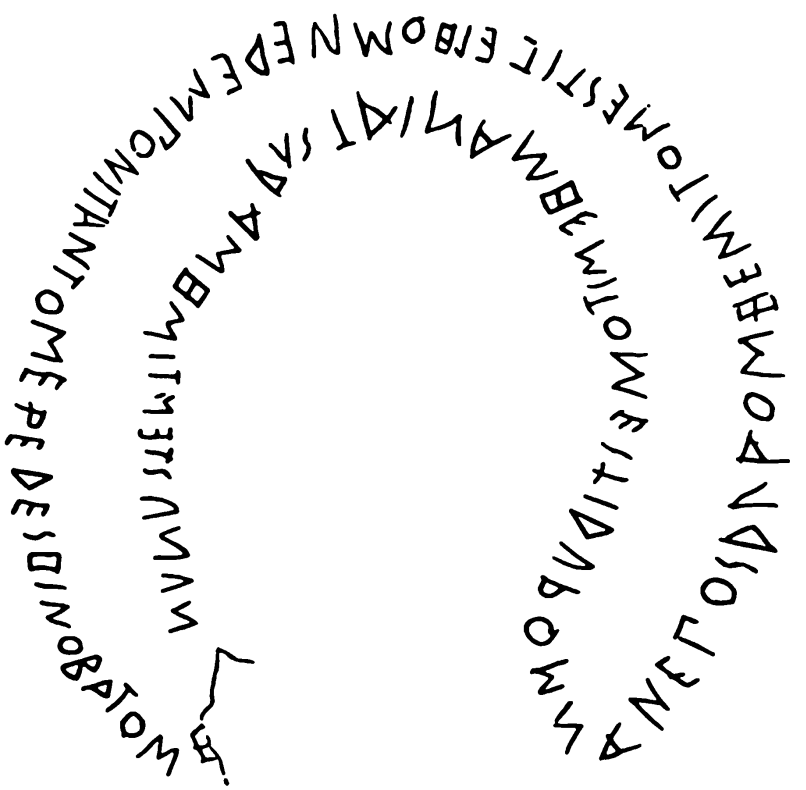

Plate 16. Sicel: Centuripa vase

Conway—Whatmough—Johnson (1933, 2: 445–449); Vetter (1953: 359–360, no. 514;1962); Pisani (1964: 294–296, no. 126); Pulgram (1978: 72–73, P 17); Zamboni (1978: 957); Morandi (1982: 168–170).

nunusteṇtimímarustainamʃemitomestiduromnaneposdurom-
ʃemitomestivelʃomnedemponitantomeredesvịṇobrtome

Discussion: Apparently identifiable in this inscription are the following: **nunus** '*Nōnus*' is in the nom. sg. masc., though a dat. sg. interpretation is also possible (**nunu**); **teṇti** could be equivalent to Lat. *tendit* 'X holds', and **mím** may equal Lat. *mē* 'me'; **stainam** may be cognate with OHG *stein*, Eng. *stone*, indicating a stone vase; **ʃemitom** could be the participle of a verb indicating 'to offer' (cf. Skt. *yam-* 'hold out, offer'); **esti** 'is' mirrors Gk. ἐστί, Skt. *ásti*; **durom** is probably equivalent to Lat. *dōnum* 'gift'; **nane** is most likely the dative of the name of a common Mediterranean deity *nanā*; **pos** may reflect Lat. *post* 'after'; **ned imponitantom** is quite possibly a negative prohibition equivalent to Lat. *nē imponuntō* 'they shall not fill'; **eredes** suggests Lat. *hērēdēs* 'heirs'; **vịṇobrtome** is probably to be analyzed as a compound *vīnifertum*, composed of **vịṇo** 'wine' (Lat. *vīnum*) followed by **brtome** 'carried' (Lat. **fertum*, from *ferre*).

b. Sicel glosses. Cf. Conway—Whatmough—Johnson (1933, 2: 449–473); Vetter (1953: 362–378).

1. ἀρβίννη	'flesh'	(cf. Lat. *arvīna*)
2. κάμπος	'hippodrome'	(cf. Lat. *campus*)
3. κάτινος	'receptacle for money'	(cf. Lat. *catīnus* 'serving dish')
4. **dos**	'gift'	(cf. Lat. *dōs*)
5. λέπορις	'hare'	(cf. Lat. *lepus*)

4.3.2.7. Venetic

Venetic is among the best known of the pre-Roman dialects of ancient Italy. The Veneti occupied an area in northeastern Italy, with the primary centers at (modern) Este, Padua, and Vicenza. Most Venetic inscriptions (slightly more than 250 in all) are written in a North Etruscan alphabet and are dated from the sixth to the first centuries B.C.E. A few are written in Roman characters. Of this considerable corpus of Venetic material, most is contained in inscriptions of only a few words. However, some inscriptions contain two lines, and one recent find exceeds four lines. Despite the brevity of the texts, however, there is more continuous material in Venetic than in Raetic, Lepontic, Ligurian, Messapic, South Picene, Sicel, or even many of the later languages such as Paelignian or Volscian.

For some time, Venetic was considered to be a non-Italic IE language with genetic proximity to Illyrian and Messapic. This view, which originated in the nineteenth century, has few modern adherents. Others regard Venetic as a close relative of Celtic and especially Italic, specifically the Oscan–Umbrian group. For this view see Beeler (1949: 57); for further discussion see Polomé (1966). While there are some reasons to consider Venetic as Italic, its inclusion in the Oscan–Umbrian dialect group is doubtful, since Venetic preserves PIE $*k^{\mu}$ as *-kv* (cf. Lat. *-que* 'and', Umbr. *-pe*, Ven. *-kve*) and $*g^{\mu}$ as as *w* (cf. Lat. *vīvus* 'alive', Osc. **bivus**, Ven. **vivoi**). The overall structure of Venetic suggests a separate western IE language with Italic and Celtic affinities, the classification followed here. For general information on Venetic and the culture of its speakers, see Pellegrini (1978), Untermann (1980), Fogolari—Prosdocimi (1988). Wallace (1998) reviews recent linguistic scholarship.

a. Found near Padua in 1875, the following inscription from about the fifth century B.C.E. is on a tablet of white stone (plate 17). It is perfectly preserved and easily read. Because of the uncertainty surrounding the proper case of **pupone•i** and **rako•i**, as well as the meaning of **e•kupetari•s•**, several translations are possible; the one provided may or may not be accurate.

Plate 17. Venetic: Epitaph from Padua

Conway—Whatmough—Johnson (1933, 1: 128–130); Beeler (1949: 47); Pisani (1964: 262, no. 103); Pellegrini—Prosdocimi (1967, 1: 324–328); Lejeune (1974: 250); Pulgram (1978: 53–59, P 10); Prosdocimi (1978c: 294); Fogolari—Prosdocimi (1988: 284–285).

pupone•i• e•go rako
•i• e•kupetari•s•

'I am the tomb (?) for Poponeius Racus.'

Discussion: pupone•i and **rako•i** are apparently datives of a bipartite name formula, though it is possible that they are in the genitive; **ego** is transparently equivalent to

Lat. *ego* 'I', Gk. ἐγώ, etc.; and **e•kupetari•s•** is sometimes interpreted as 'tomb' or 'tombstone'. However, the appearance of this word elsewhere on a bronze tripod and on a bronze vessel underlines the tenuousness of this interpretation. Pulgram (1976) suggests the reading 'charioteer' or 'priest'.

b. The following two-line inscription is cut on a writing stylus deposited as a gift for the goddess Reitia. A large number of such items have been found near Este. The puncts in this dedicatory inscription are used to mark syllable and word boundaries. See Pulgram (1978: 45) and Lejeune (1974: 33–40) for discussion of interpunction in Venetic.

Lejeune (1974: 205); Pellegrini—Prosdocimi (1967, 1: 150); Prosdocimi (1978c: 288); Morandi (1982: 183); Fogolari—Prosdocimi (1988: 279).

mego doto re•i•tia•i•
bu•k•ka kolia•i

'Bucca gave me to Reitia for Colia.'

Discussion: mego is an accusative of the pronoun **ego** 'me' (cf. Lat. *mē*, etc.); **doto** is apparently a root-aorist of the verb 'give' with middle inflection, parallel to Gk. ἔ-δοτο, though the *o*-vocalism in the root opens the possibility that it is an active form; **reitiai** is a dative 'to Reitia'; **koliai** is most likely a dative indicating the beneficiary.

4.3.3. Non-IE languages

4.3.3.1. Etruscan

It was in the coastal cities in the south of the Italian peninsula that the Etruscans learned to write from the Greeks. The use of the alphabet, adapted from Greek, seems to begin at about the same time throughout the Etruscan world, despite the wide geographical spread of the cities. This uniformity of adoption reflects the extreme speed with which writing must have spread among the Etruscans. The use of the alphabet arose as a result of close cultural contacts with the Greeks, who were especially influential with the Etruscans during the eighth century.

Though the Etruscans left behind thousands of inscriptions, there is no literature in the form of texts or discourse from which the elements which make up the Etruscan language can be learned. The earliest Etruscan inscription which has thus far been discovered is on a Proto-Corinthian cotyle found at Tarquinia; it has been dated to the seventh century. Other seventh century inscriptions have been found at Caere (Cerveteri), Vulci, Veii, and Chiusi. All these inscriptions are written in the Euboean alphabet, though there are at least three alphabetic types discernible in the

overall Etruscan corpus which reflect local developments. The Etruscan writing system was eventually adopted by the speakers of Latin and the other Italic languages, especially Oscan and Umbrian. For a detailed account of the development of writing in the Etruscan world, see Cristofani (1978, 1979).

A few representative inscriptional monuments of Etruscan follow.

a. A funerary inscription on a sarcophagus from Tarquinia, from the end of the fourth century B.C.E. Bonfante—Bonfante (1983: 116); Rix (1991, 2: 47, no. 1.15).

partunus. vel. velθurus. śatlnalc. ramθas. clan. avils. XXIIX. lupu.
Partunus Vel of Velthur and of Satlnei Ramtha the son of years 28 dead

'Vel Partunus, son of Velthur and Satlnei Ramtha, was dead when he was 28 years old.'

b. An inscription on a bronze statuette from Cortona, fourth or third century B.C.E. Bonfante—Bonfante (1983: 128); Rix (1991, 2: 303, no. 3.4).

v. cvinti. arntiaś. culśanśl alpan. turce
V(elia) Quintia (the daughter) of Arnth to Culsans willingly gave

'Velia Quintia, the daughter of Arnth, willingly gave this to Culsans.'

By the first century B.C.E., there is every indication that Etruscan culture and language were approaching extinction. In fact, in 89 B.C.E. it was decreed that only Latin could be used as an official language in Rome. Though there are reports of Etruscan soothsayers in Rome as late as the third century C.E., they probably did not speak Etruscan. From all the evidence, it seems that Etruscan was dead as a language by the first century C.E. It is said that the Emperor Claudius (41–54 C.E.) was the last person alive who spoke Etruscan.

The complete corpus of Etruscan inscriptions spans a period of about 600 years and evidences noticeable changes in the structure of the language over this period. Because of the nature of the corpus, most of what is visible are changes in phonology reflected in spelling differences between the earlier and later periods. Many words from so-called Archaic Etruscan (7th and 6th centuries B.C.E.) can be contrasted with words in Late or Neo-Etruscan (5th–1st centuries B.C.E.) by the high incidence of vowel reduction (syncope) in the later language. This phenomenon, which is also seen in the Latin of roughly the same period, is typically brought about by the presence of a strong expiratory accent, as in Etruscan and in Latin, on the initial syllable. Cf. Lat. *praesentīs* (*praesentēs*) represented in Late Etruscan as *preśnts*, as well as the Early Etruscan names *Ramutha*, later *Ramtha*; *Rasenna*, *Rasna*; *Menerva*, *Menrva*; *Klytaimestra*, *Clutumsta* (see Bonfante—Bonfante 1983: 68).

The majority of the Etruscan inscriptions are found in Etruria, but others have

been found in Latium, Campania, northern Italy, Corsica, and North Africa. The total number of texts, from all sources, is about 13,000, a number which is steadily increasing with new excavations and discoveries (see Rix 1991 for a recent edition of Etruscan texts, arranged mostly by geographic location). Of the 13,000 or so monuments of Etruscan which are known, most are dedicatory and contain little more than names of individuals, their ages, and, in the case of important people, the name of the office they held. There are numerous repetitions throughout the extant inscriptions which significantly reduce the value of many of them. Apart from the Zagreb mummy (see below), the direct sources of the Etruscan language are archaeological in nature; that is, they are inscribed or painted on a variety of objects, including architectural monuments, tomb walls, cippi, sarcophagi, urns, roof tiles, statues, household objects, metal tablets, vases, and so on (Rix 1984). These inscriptional remains constitute the main part of the extant Etruscan corpus. Additionally, there is the information which can be gleaned from indirect sources such as glosses and other information provided by classical and post-classical writers. Examples of such data are Etruscan borrowings in Latin, Etruscan elements which have survived in place names, and fragments of presumed Latin versions of original Etruscan texts.

The following listing of the most significant items in the Etruscan corpus is adapted from Bonfante—Bonfante (1983: 48–51).

a. The Zagreb mummy text. This is a sacred linen book (*liber linteus*), parts of which were used as a wrap on the mummy of a thirty-year-old woman. The wrapping was bought in Egypt in the last century by a Croatian traveler and donated to the Zagreb National Museum in Croatia. It is the only surviving sacral book from Greco-Roman antiquity and was no doubt preserved because of the dry Egyptian climate. The book was probably brought to Egypt during the Roman occupation. It contains prayers, names of gods, and dates, with the total of clearly readable words numbering about 1,200. But as is so often the case with testaments of the Etruscan language, the number of words drops to about 500 when repetitions are eliminated from the count. Despite this, however, the Zagreb mummy text is by far the most precious single representative of Etruscan.
b. An inscription on a lead tablet from about 500 B.C.E., found near Santa Marinella in the vicinity of Cerveteri in northern Italy. It contains about eighty words, forty of which have certain readings.
c. A roof tile from Capua, from the fifth–fourth century B.C.E. It contains about three hundred legible words on sixty-two lines and represents one of the richest extant inscriptions of Etruscan.
d. A small lead plaque from the fifth century B.C.E. found at Magliano. It contains about seventy words.
e. Three gold tablets discovered in 1964 at the port of Pyrgi at Caere, from about 500 B.C.E. These are important not only for their linguistic, but also for

their historical value. Two of the tablets are inscribed with Etruscan text, while the third is in Phoenician (Punic), a known Semitic language. One of the Etruscan inscriptions contains fifteen lines with a total of thirty-six or thirty-seven words. This corresponds to the Phoenician inscription, forming a kind of bilingual text. The second Etruscan inscription contains nine lines, with about fifteen words. Unfortunately, the Phoenician text is not a word-by-word translation of the Etruscan, but rather a paraphrase which describes the same event as the Etruscan text.

f. A stone cippus found at Perugia, from the third or second century B.C.E. It has forty-six lines and contains about one hundred thirty words. It is noteworthy among the later Etruscan inscriptions, primarily for its length.

In addition to the foregoing, there are some extended funerary inscriptions and many shorter inscriptions on mirrors, vases, armor, furniture, coins, votive offerings, and other monuments. There are also about thirty Latin–Etruscan bilingual inscriptions. They are all quite short, the translations are very loose, and they are not systematically helpful in advancing the inventory of Etruscan evidence or the understanding of the existing material. This is because most of the bilingual material consists of corresponding personal names.

One of the most significant finds concerning the Etruscans, their origins, and their language is the inscription found in 1885 on the island of Lemnos, from the sixth century B.C.E. This material was discussed in connection with the Etruscan origins question in the previous chapter. The inscription contains thirty-three words, and while it is not in Etruscan itself, the language of these Lemnian texts is strikingly close to Etruscan. Additionally, the West Greek alphabet in which they are written is close to the Etruscan alphabet. There are similarities in the inflectional endings, in roots, and even in whole expressions which indicate unambiguously some degree of relatedness between the two languages. (Lemnian itself is otherwise known primarily from a single document). As noted earlier, these Lemnian inscriptional materials add substance to the theory of eastern origins of the Etruscans. Whatever ethnic conclusions one might draw, at least the genetic relatedness of the two languages seems assured.

There are two questions which are commonly asked in connection with the Etruscan language. The first concerns the depth of knowledge of Etruscan, while the second concerns its genetic affiliations.

On the matter of the language, because of the ease of reading the alphabets in which Etruscan is written, Etruscan words and texts can be quickly deciphered. However, since there are no documents in closely related languages other than the sparsely attested Lemnian, it is often difficult to confirm interpretations of Etruscan data. Also, with bilingual texts such as those from Pyrgi being little more than loose translations of the corresponding Etruscan, the kinds of lexical and structural keys that such texts can provide are lacking. Similarly, bilingual Latin–Etruscan texts

(which number about 30) are either free translations, like the Pyrgi tablets, or else contain primarily names and titles, thus providing little structural data. And, of course, the indirect evidence provided by glosses and other fragmentary evidence is of limited overall value.

In addition to the information provided by the bilingual texts and glosses, analysis of Etruscan is advanced by several internal methods. One method is the technique of "combinatory analysis", which deals with the language as if it were a code and attempts to discover patterns by trying out different combinations of words in different contexts. Another method is referred to as the "quasi-bilingual method", which takes as its starting point the many shared formulae found in the languages of ancient Italy and compares them contextually to Etruscan material. The Zagreb mummy wrappings, for example, contain some of the same structural formulae as the Iguvine Tables (Bonfante—Bonfante 1983: 61). See also the parallel Etruscan and Faliscan texts at the end of this section. These methods of analysis supplement the information contained in bilingual texts, glosses, and inscriptions to produce a detailed, though necessarily incomplete, knowledge of the Etruscan language. The analysis of the phonological system seems most secure, followed by the morphology and syntax; there has even been progress in the area of sociolinguistic understanding (Cristofani 1979). Thus there is little doubt that at least the foundations of the Etruscan language are known by modern scholars. For further information, see Pfiffig (1969), Pallottino (1978), Bonfante—Bonfante (1983), Rix (1984), and Rix (1991).

The issue of the genetic connections which Etruscan might have with other languages of the world is a popular one, and it has attracted its share of speculation based on the misapplication or non-application of the principles of historical-comparative linguistics. A commonly held position on the genetic affiliations of Etruscan is that it is a linguistic isolate without confirmed genetic affiliations. Another position identifies Etruscan among the "Etrusco-Asian and pre-Indo-European" stratum of languages. This conclusion was reached by researchers using the "etymological method", proponents of which attempt to make lexical comparisons with as many of the world's languages as possible and to identify those languages which they deem to be related to Etruscan as part of some "family". Another position, popular among amateurs, is that Etruscan is related to Basque, another language isolate. Connections with other non-IE languages such as Hattic, Hurrian, and the Caucasian languages have also been proposed, without scientific foundation. Other analyses, based at least on a more serious methodology, have identified Etruscan as a "peri-Indo-European" language, i.e. a language which developed in the region of IE languages but which was itself one of the non-IE languages of the Mediterranean. Some scholars, especially those in favor of a northern-origins theory for the Etruscans, have attempted to connect Etruscan with Raetic. While there are a few similarities between the two, such a connection is at best poorly demonstrated at this point.

Still other analyses have sought to establish connections between Etruscan and languages of Anatolia (particularly Luwian and Lycian). Georgiev (1981) asserts that Etruscan is related to late Hittite. Adrados (1989) presents a number of correspondences between Etruscan and the IE languages of Anatolia. To support his position, Adrados proposes three stages in the development of PIE: pre-inflectional PIE (IE I); minimally inflectional PIE of the Anatolian type (IE II); and fully inflectional PIE of the classical type (IE III). Adrados claims (1989: 380) that Etruscan is "a sort of Proto-Anatolian" which is intermediate between IE I and IE II. In a similar vein, Woodhuizen and Best (1989) make a case for a Tyrrhenian branch of Luwian, which includes both Lemnian and Etruscan, and Woodhuizen (1991) provides detailed morphological data in which he attempts to link Etruscan and Anatolian. In the end, however, the only language which meets the requirement of regular phonological and morphological correspondences with Etruscan is Lemnian, allowing for the postulation of a Proto-Tyrrhenian ancestral language. What wider family connections there might be, including those with Indo-European, remain a matter of conjecture. See Beekes (1993) for a refutation of Etruscan as an IE language.

4.3.3.2. Etruscan influences on Latin

The Etruscan alphabet, which is of the Euboean Greek type, exists in several local varieties. It was probably learned by the Etruscans in the eighth century B.C.E. and passed on to the Romans in the seventh. According to Wallace (1989: 122–123), the transmission of writing from the Etruscans to the Latins probably came about as part of the Etruscan practice of "gift exchange" between wealthy people, in which a precious object like a wine vase or piece of jewelry is incised with an inscription which bears witness to the exchange. Several exchange patterns can be discerned. One indicates the name of the owner of the gift, as in *mi larthia* 'I am the property of Larth'; another indicates the name of the donor of the gift, as in *mini mulvanice mamarce velchanaś* 'Mamarce Velchana gave me'; yet another marks the name of the person who produced the gift, as in *mi qutun lemauśnaś ranazu zinake* 'I [am] the pitcher of Lemausna. Ranazu made [me]'. According to Wallace, the practice of gift exchange was adopted by wealthy Latin families, who in turn learned to write in imitation of this practice.

Beyond the fact of the writing system, however, the Etruscan effect on Latin is largely limited to items in the lexicon which demonstrate Etruscan political power from the establishment of the Etruscan dynasty in 616 B.C.E. until its fall in 510/509 B.C.E., and an apparent cultural influence which survived centuries longer.

The marginal effect of Etruscan on Latin is perhaps surprising in light of the cultural role thought to have been played by the Etruscans in the development of Roman culture and life, especially in the areas of political organization, military terminology, the arts, and architecture. But it may be very well explained by Cornell's (1995) assessment of Etruscan Rome as a myth. Indeed, little structural carry-over

from Etruscan to Latin is evident, which indicates a low degree of bilingualism, the primary condition for robust linguistic influence. Etruscan influence is primarily lexical, with vocabulary from a variety of domains. Among the words thought to derive from Etruscan are *mundus* 'world', *fullō* 'cloth-fuller', *nacca* 'fuller', *histriō* 'actor', *ātrium* 'entrance hall,' *sūbulō* 'flute player', *pulcher* 'beautiful', *lurchō* 'glutton', *cacula* 'servant', *scurra* 'a dandy', *verpa* 'male member', *balteus* 'girdle, belt', *bārō* 'simpleton', *fenestra* 'window', *popa* 'a lower-ranking priest', *populus* 'people', and a variety of others. In addition, there are personal names, e.g. *Volturnus*, *Sāturnus*, *Laverna*, *Manturna*, *Carmenta*, and place names, e.g. *Tiberis*, *Hister*, *Sīsenna*, *Caecīna*, *Ravenna*, *Populōnia*, *Vetulōnia*, and others. The borrowed Etruscan vocabulary clusters around a few morphological types. For example, there are nouns ending in *-na*, *-īna*, *-ēna*, *-enna*, *-enas*, *-rna*, and *-sa*. Here are *persōna* 'mask worn by an actor, character', *sculna* 'mediator', *santerna* 'borax', and *verna* 'home-born slave'. A number of hybrid formations were created using these suffixes, either from Latin–Etruscan (e.g. *taberna* 'wooden hut, booth, inn', *lacerna* 'mantle, cloak', *laena* 'a woolen double cloak', *catēna* 'wooden bracket', and *sagīna* 'a fattening') or from Greek–Etruscan (e.g. *cisterna* 'cistern' and *lanterna* 'lantern'). Other morphological types represented in the corpus of Etruscan borrowings are those in *-mno-*, *-mna*, *-mnia*, *-mēna*, and *-mīna* (cf. *autumnum* 'autumn', *Vertumnus* 'god of the changing year', *aerumna* 'hardship', *columna* 'column', *crumēna*, *crumīna* 'change purse') and those in *-issa*, *-īsa*, *-ussa*, and *-ūsa* (cf. *mantīsa* 'a worthless addition', *favīsae* 'underground reservoirs near temples', and *cērussa* 'white lead'). But overall the number of borrowed words is too small, and the pattern is too skewed, to make a claim for large-scale, productive morphological patterning. The influence is best characterized as lexical and does not suggest any measurable substratal effect. See Ernout (1930, 1954).

Apart from the lexicon, there are several other features from Etruscan language and culture which are evident in everyday Latin and Italic life. One such feature is reflected in the counting system, with the Latin pattern of subtracting two and one from twenty to form 'eighteen' and 'nineteen' respectively probably based on an Etruscan model (it could be inherited, though this appears less likely). Another is the onomastic designation of Romans by their *praenōmen*, *nōmen*, and *cognōmen* (e.g. *Marcus Tullius Cicero*). Yet another Etruscan cultural pattern that shows itself is the structure of the dedicatory formulae ("talking inscriptions") common in Latin and Italic epigraphy (see Agostiniani 1982). The pattern "I am the property of X" seems to be fashioned after an Etruscan model, though Greek influence is another possibility. A good example (cf. Vetter 1953: 285, no. 242 B; G. Giacomelli 1978: 527) comes from a seventh century inscription from the old town of Falerii (Falerii Veteres), the first three words of which read as follows.

Falisc. **eco quton Evotenosio**
I am the vase of Evotenos

This formula patterns perfectly with the following seventh century Etruscan text, on a pitcher from Caere. Bonfante—Bonfante (1983: 109); Rix (1991, 2: 34, nos. 2.18, 2.19).

Etr. **mi qutum karkanas**
I am the pitcher of Karkana

When put in the context of a total language system, however, the effect of Etruscan on Latin and the neighboring Italic languages is slight, a mere handful of words that represents only a fraction of the overall vocabulary, and no permanent structural features.

4.4. Interrelationships within Italic

As might be expected, there is no universally accepted scheme for the classification of the Italic languages, nor any single proposal which accounts for the subdivisions and internal relationships of the individual languages. The issues are predictably complex, and agreement is elusive, not only because the data are uneven and incomplete, but also because the criteria for classification can vary significantly among specialists. The issues are familiar ones: What kind of classification is being proposed, a geographic or a genetic one? What counts more, a syntactic, morphological, or phonological similarity? How many similarities are enough to establish close links between two languages or dialects? How important are lexical facts, since languages, especially those in close geographical proximity, can borrow freely from each other? How can archaisms be securely differentiated from innovations?

4.4.1. A real/chronological classifications

Conway (1897) and Conway—Whatmough—Johnson (1933) propose two major divisions of the languages of ancient Italy, called "Prae-Italic" and "Italic." The classification is partly chronological, partly geographic, and partly genetic, since by Prae-Italic is meant "languages spoken in districts of Italy in which they were afterwards superseded by a language or languages belonging to the Italic group properly so-called, namely Latin, and those closely akin to it, such as Oscan, Umbrian, and Volscian ..." (1933, 1: v). This multiple grouping allows the inclusion of languages like Raetic, Lepontic, and Ligurian in the classification, though it excludes non-IE languages like Etruscan. The IE languages of ancient Italy are divided as in

Table 4.2. Conway's classification of Prae-Italic and Italic languages

Prae-Italic	Italic
Venetic	Oscan
Raetic	Volscian
Kelto-Liguric	Latinian
(Lepontic, Ligurian)	Umbrian
Gallic	Picene
East Italic	
Messapic	
Sicel	

Table 4.3. Pulgram's classification of Prae-Italic and Italic languages

Prae-Italic	Italic	Latinian
Ligurian and Lepontic	Oscan	Latin
Raetic	Umbrian	Faliscan
Venetic	Paelignian	Praenestinian
Messapic	Aequian	
East Italic	Marsian	
Sicel	Marrucinian	
	Vestinian	
	Volscian	

table 4.2. It should be noted that several of these entries have internal subdivisions. For example, Latinian can be further subdivided into Roman Latin and Praenestinian.

Pulgram (1958, 1978) maintains the division of Prae-Italic and Italic, but with the extraction of Latinian from Italic to make a third group (table 4.3). As with Conway—Whatmough—Johnson, Pulgram's classification includes non-Italic IE languages.

4.4.2. Genetic classifications

Genetic classifications of the languages of ancient Italy can be found in Devoto (e.g. 1944, 1967), Pisani (1960–1964), Poultney (1959), Prosdocimi (1978d), and Coleman (1986). Poultney's genetic classification assumes a Proto-Italic common language as a purported hypothetical stage from which the similarities among all the attested Italic languages can be derived.[4] He arranges the Italic languages in the configuration shown in figure 4.1 (1959: 9).

Coleman (1986) proposes a genetic grouping of the Italic languages which is

4 For a view opposing the notion of "Common Italic", see Jeffers (1973); arguments supporting Proto-Italic are found in Joseph—Wallace (1987), Wallace—Joseph (1989).

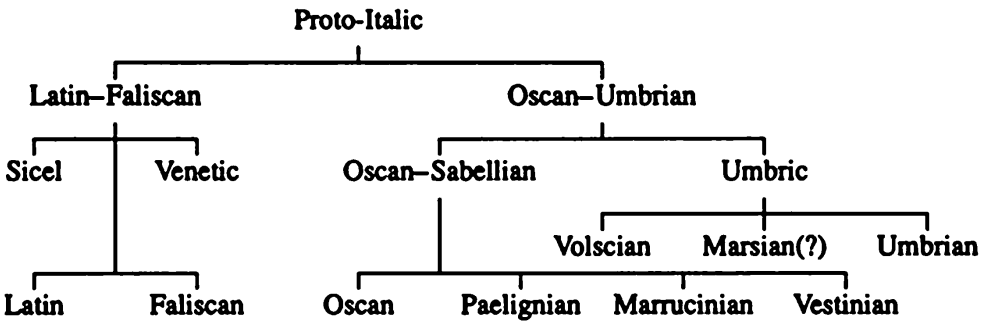

Figure 4.1. Poultney's classification of the Italic languages

based on general facts of dialect geography. Coleman argues that speakers of the Italic languages participated in a steady multi-directional linguistic and cultural intercourse with each other over a period of hundreds of years. The combination of common genetic inheritance and shared linguistic space results in irregular patterns of mutual retention and gradations of similarity among various groups. Language A may share some phonological or lexical feature with B, yet A may have another feature in common with C which is not present in B. Volscian (A), for example, shares with both Oscan (B) and Umbrian (C) a labial reflex of PIE $*k^{\mu}$ as *p*: cf. Volsc. *sepis* 'if anyone', Osc. *pis* who', Umbr. sve-pis 'if anyone' vs. Lat. *sī quis*: (A:B:C). Volscian also retains final *m* (cf. Volsc. *statom* 'decree', *bim* 'ox'), a typical Oscan characteristic: (A:B). On the other hand, loss of final *d* after long vowels in Volsc. *toticu* 'public', *estu* 'be'(< **-ōd*) and *façia* 'let X perform' (< **-ād*) is more Umbrian: (A:C).

Based on such collocations, Coleman proposes a three-way genetic division for the Italic languages. He attempts to relate the various languages and dialects to each other and among themselves according to their degree of similarity judged against available morphological and phonological features. In his scheme there is a Latin–Faliscan group; an Oscan–Umbrian group; and a third one, the Sabellian group. The Sabellian group is made up of seven languages, viz. Paelignian, Marrucinian, Vestinian, Marsian, Aequian, Sabine, and Volscian. He subdivides these further into the "Oscanic" and "Umbrianic" languages according to their degree of similarity to Oscan and Umbrian. To varying degrees, Paelignian, Marrucinian, and Volscian show a greater affinity with Oscan than with Umbrian, while Sabine, Aequian, Marsian, and Vestinian are closer to Umbrian.

Coleman's classification might be represented as in figure 4.2, incorporating Southworth's (1964) suggestions for combining family trees and dialect isoglosses (see Anttila 1989: 307–309 for further discussion).

In order to finally propose a defensible scheme of representation for the Italic languages, it is first necessary to define more closely the relations between Latin and Faliscan, Oscan and Umbrian, and between Latin–Faliscan and Oscan–Umbrian.

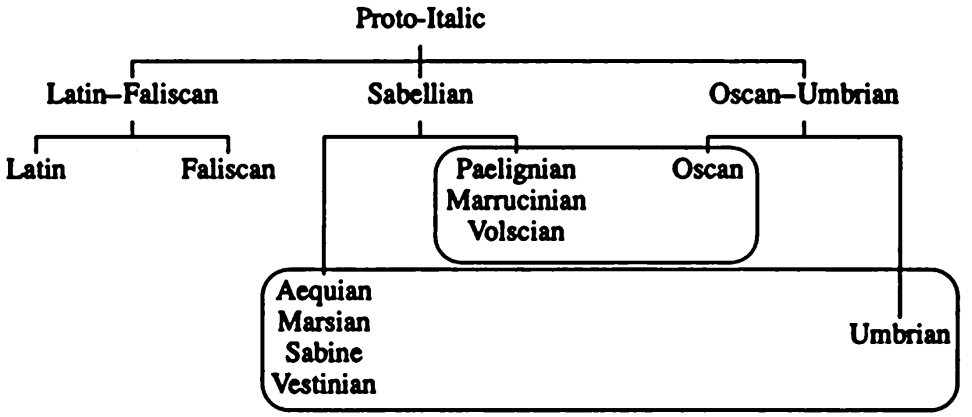

Figure 4.2. Coleman's classification of the Italic languages

4.4.2.1. The relationship between Latin and Faliscan

There are broadly three schools of thought on the relationship of Latin to Faliscan. The majority view holds that the Italic languages have two main divisions, the Latin–Faliscan group and the Oscan–Umbrian group. On this view, Faliscan is held to be a language which is separate from Latin, but is the closest relative to Latin on the family tree. Relationships are represented as in figure 4.3a, with the addition of S. Picene to the roster, following Marinetti's (1985) analysis.

A second view holds that Faliscan constitutes a separate node on the Italic tree, independent of both the Latin and the Oscan–Umbrian subgroups. This position, which has few adherents (cf. Campanile 1968: 107, Beeler 1966: 57), can be schematized as in figure 4.3b.

The third position holds that Faliscan is a dialectal variant of Latin, one which would presumably be mutually intelligible with Latin. This view can be represented as in figure 4.3c.

The view that Faliscan constitutes a separate node under Italic (4.3b) is not linguistically justifiable and will not be considered further. The present discussion will center primarily on the other two positions in an attempt to establish the degree of closeness between Latin and Faliscan. From this review some conclusions concerning this relationship should emerge.

Different periods in the history of Faliscan can be distinguished. Faliscan inscriptions can be traced back to the late sixth and perhaps even the seventh century B.C.E. These inscriptions are said to represent what is called "Old" or "Archaic Faliscan". Inscriptions from the fifth century B.C.E. up until the destruction of the city of Falerii Veteres by the Romans in 241 B.C.E. are called "Medio-Faliscan". "Neo-Faliscan" is used to refer to inscriptions which stem from Falerii Novi, where the Faliscan-speaking population was relocated after the fall of the old city.

The following is a sample of the most probative similarities and differences between Latin and Faliscan, based in large part on G. Giacomelli (1963), Campanile

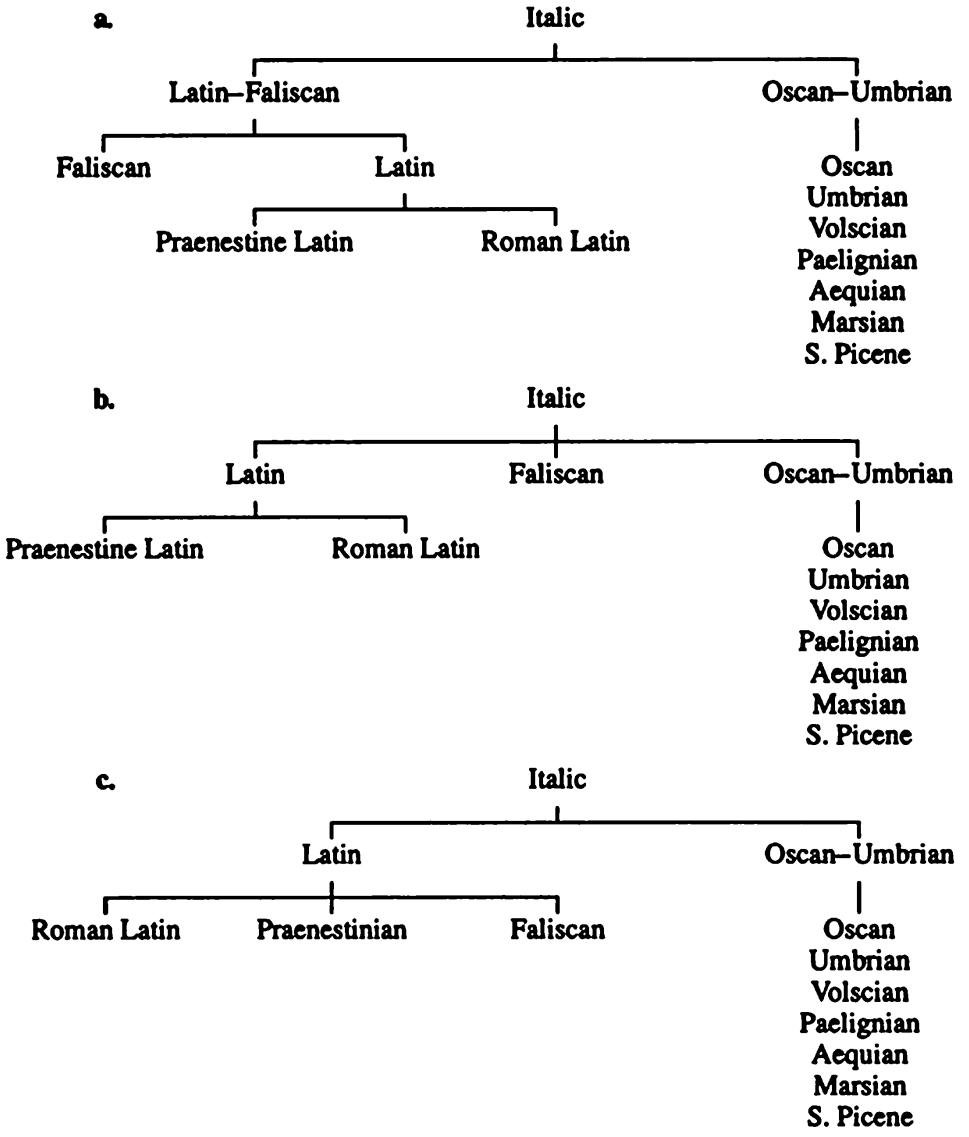

Figure 4.3. The relation of Latin and Faliscan

(1968), and the reinterpretation of the evidence provided in Wallace—Joseph (1991). Conclusions about the relations between Latin and Faliscan must involve consideration of issues such as the dialectal differences between Roman and non-Roman Latin, the differentiation of archaisms and innovations and the relative weighting of each, and the reliability of vocabulary as a means of measuring degree of genetic relatedness.

4.4.2.2. Similarities between Faliscan and non-Roman Latin

1. Monophthongization of diphthongs—**ai* > *e*; **ei* > *e*; **oi* > *o*; **ou* > *o*; **au* > *o*.
   Examples: Falisc. **efiles** 'magistrates of public works' : Rom. Lat. *aedīlēs* (**ai*); **hec** 'here' : Rom. Lat. *hīc* (**ei*); **loferta** 'freedwoman' : Rom. Lat. *līberta* (**oi*); Praen. *losna* 'moon' : Rom. Lat. *lūna* (**ou*); *plotia* 'fem. praenomen' : Rom. Lat. *plautia* (**au*).
2. The feminine dative singular in *-a* (< **-āi*).
   Examples: Falisc. **menerua** 'to Minerva' : Rom. Lat. *Minervae* (**ai*); Praen. *filea* 'to the daughter' : Rom. Lat. *fīliae* (**ai*).
3. The vocalic sequence *iV* > *eV*.
   Examples: Falisc. **filea** 'daughter' : Rom. Lat. *fīlia* (**fīlea*);. Praen. *fileai* 'to the daughter' : Rom. Lat. *fīliae*.
4. The loss of word-final *-t* (*-d*).
   Examples: Falisc. **cupa** 'lies' : Rom. Lat. *cubat*; Tibur. *dede* 'gave' : Rom. Lat. *dedit*; Praen. *coraueron* 'they administered' : Rom. Lat. *cūrāvērunt*.
5. The loss of word-final *-s* after long vowels.
   Examples: Falisc. **cra** 'tomorrow' : Rom. Lat. *crās*; Praen. *sueq* 'by, from their own' : Rom. Lat. *suīs-que*.
6. The change of *f* > *h* word-initially.
   Examples: Falisc. **hileo** 'son' : Rom. Lat. *fīlius*; Falisc. **foied** 'today' : Rom. Lat. *hodiē*; "Rustic" *horda* 'pregnant cow' [Varro *Rust.* 2.5.6] : Rom. Lat. *forda*.
7. The genitive ending *-os* in consonantal stems (which later becomes *-us*, *u* in non-Roman Latin, *-is* in Roman Latin).
   Examples: Falisc. **lartos** 'gen. sg. of a masc. praenomen', **loifirtato** 'of freedom' : Rom. Lat. *lībertātis*; Praen. *salutus* : Rom. Lat. *salūtis*, Praen. *nationu* : Rom. Lat. *nātiōnis*.
8. The genitive of *-o* stems in *-osio*.
   Examples: Falisc. **euotenosio** 'gen. sg. of masc. name', **kaisiosio** 'gen. sg. of masc. name' (= Rom. Lat. *caesī*). This ending is found in the Early Latin Lapis Satricanus: POPLIOSIO VALESIOSIO 'of Publius Valerius' (= Rom. Lat. *Publī Valerī*).
9. The sequence *erC* > *irC*:
   Examples: Falisc. **loifirtato** 'of freedom' : Rom. Lat. *lībertātis* (**-ert*); Praen. *mircurios* 'Mercury' : Rom. Lat. *Mercurius* (**-erc*).
10. Medial *f* from PIE **b^h* and **d^h*.
   Examples: Falisc. **carefo** 'I will do without' : Rom. Lat. *carēbō* (**b^h*); Falisc. **pafo/pipafo** 'I will drink' (**b^h*);"Rustic" Lat. *rūfus* 'reddish' : Rom. Lat. *ruber* (**d^h*).

Wallace and Joseph (1991) argue that the correspondences between Faliscan and non-Roman Latin are not sufficient to establish the dialectal status of Faliscan with

Latin (figure 4.3c). They point out in particular that many of the changes in Faliscan which produced these similarities are relatively late in the language, in most cases not evident until the final stages of the Medio-Faliscan period, or well into the Neo-Faliscan period. Thus most are not attested until about 300 B.C.E., a period which is too late for them to be considered archaic retentions with Latin. In addition, they point out that several of the features mentioned in the list above are also found in the Oscan–Umbrian subgroup and are not unique to Latin and Faliscan, and therefore cannot be considered diagnostic for this issue. Cf. the following.

4.4.2.3. Features shared between Faliscan and Oscan–Umbrian

1. Monophthongization of diphthongs (= 1 above):
   Examples: Umbr. *pre* (< **prai*) 'before : Rom. Lat. *prae*; *toru* 'bull-calves' : Rom. Lat. *taurus*.
2. Dative sg. of *a*-stems in *a* (< **āi*) (= 2 above):
   Example: Paelign. *minerua* 'to Minerva'.
3. The sequence *erC* > *irC* (= 9 above):
   Example: Osc. **amirikum** (acc. sg.) 'advantage, profit' : Rom. Lat. *merx* 'goods'.
4. Medial *f* from PIE **b*^{h} and **d*^{h} (= 10 above):
   Examples: Osc. **mefiaí** (loc. sg.) 'middle' : Rom. Lat. *medius* < **med*^{h}*io-*; Umbr. **alfu** (acc. pl.) 'white' : Rom. Lat. *albus* < **h*$_2$*elb*^{h}*o-*.

In addition to the foregoing, Wallace and Joseph point to a significant number of Roman inscriptions which exhibit many of the same peculiarities commonly associated with non-Roman inscriptional material, and which anticipate Vulgar Latin and later Romance developments. Included here are loss of *t* in final position (cf. Rom. Lat. DEDRO 'they gave' (= DEDERONT, CLat. *dedērunt*); the monophthongization of **ei* > *e* (cf. Rom. Lat. *honōre* < **honōrei*, CLat. *honōrī* 'to honor'); and several others. Because they are found throughout the Latin corpus, these features are of no probative value for the assessment of the relative closeness of Faliscan and Roman Latin.

Instructive also are the following two Faliscan inscriptions, already discussed above, and their Latin counterpart.

i. **foied . uino . pipafo . cra . carefo**
ii. **foied . uino . pafo . cra . carefo**

Latin *Hodiē vīnum bibam; crās carēbō*

'Today I will drink wine; tomorrow I will do without.'

From what is known about Latin pronunciation and word formation, it seems reasonable to claim that while close, these sentences are not automatically recogniz-

able representations of each other. Though some features may have been perceptible to a Latin speaker of 600 B.C.E. (cf. for example the weak pronunciation of final *-m* and *-s*; the allomorphic relationship of *-m* to *-ō* in the first person singular verbs such as *bibam* 'I will drink' vs. *carēbō* 'I will do without'), the Faliscan parallels are not strong enough overall to justify the label of "dialect of Latin" for this language.

It seems safe to conclude that while Latin and Faliscan are close to each other—closer, indeed, than either is to any other language or variety in the Italic family—their relationship is one of language to language, as represented in figure 4.3a above, and not dialect to dialect.

4.4.2.4. The relationship between Oscan and Umbrian

The differences between Oscan and Umbrian are considerably greater than those between Latin and Faliscan, but the similarities between the two are generally taken as compelling for the establishment of a common Oscan–Umbrian (Sabellian) node under Proto-Italic. Oscan is considered to be more conservative than Umbrian in that it preserves many more of the features postulated for Proto-Italic than does Umbrian. Such archaisms are evident in a number of areas, though only a few of the more important ones are cited here. In the discussion which follows Oscan and Umbrian material is cited contrastively with the corresponding Latin form or construction.[5]

4.4.2.4.1. Similarities between Oscan and Umbrian

1. Oscan and Umbrian have the same noun declension system, and these diverge from that of Latin in the same way. For example, the third declension of both Oscan and Umbrian has more distinct endings than does that of Latin, and the fifth declension is represented by only a few forms in both Oscan and Umbrian. Also, there is a distinctly marked locative singular in Oscan and Umbrian (cf. Osc. **eíseí tereí** 'in that district'), which in Latin is syncretized with the ablative and is restricted to certain words with a specified morphological shape (cf. the adverb-like expressions *humī* 'on the ground' and *rūre* 'in the country').

2. There are examples of case endings in both Oscan and Umbrian that are not found, or are found only residually, in Latin, such as the gen. sg. 1st declension

5 Some of the early examples in what follows may give the impression that Latin and Oscan share more features than do Latin and Umbrian. In fact, Latin aligns unpredictably with Oscan on some criteria and with Umbrian on others. For extended, though now dated, discussion and data, see von Planta (1892–1897), more recently Bottiglioni (1954) and Beeler (1966). A recent account of the subgrouping issue is Meiser (1986), who dispels several of the features traditionally adduced in discussions of this question, such as the location in the conjugational systems of verbs of the (Lat.) *capiō* 'I take' type. (Meiser 1986: 201).

feminine in *-ās* (Lat. *-ae*) or the nom. pl. in *-ās* (Lat. *-ae*).

3. There are no gerunds (though there are gerundives), perfect active infinitives, future infinitives, or future active participles in Oscan or Umbrian, all of which are well-established categories in Latin.

4. There are parallels between Oscan and Umbrian in their respective formations of infinitives in *-om* (Osc. *ez-um*, Umbr. *er-om* vs. Lat. *-se* (cf. *es-se* 'to be') and perhaps present passive infinitives (Rix 1976b); they also share an *-s-* future which contrasts with the Latin–Faliscan forms in *-bō* or in *-ā-/-ē-* (cf. Osc. *deiuast* 'X will swear', Umbr. **ferest** 'X will carry' vs. Lat. *amābit* 'X will love' or Lat. *feret* 'X will carry').

5. Oscan and Umbrian have a perfect in *-f-*, e.g. Osc. **aíkdafed** 'it has decreased' (?), Umbr. *andirsafust* 'X will have made the circuit' vs. Lat. *dēcrēvit* 'it has decreased', with its characteristic *-v-* perfect. The variation found in the Italic perfect tense formations is somewhat mystifying, with several unique innovations which prevent the reconstruction of a common Italic formation.

6. The Oscan and Umbrian third singular and third plural passive are marked by a form *-ter*; in Latin these categories are marked by *-tur*, *-ntur*. Cf. Osc. *uincter* 'X is convicted', Umbr. **herter** 'it is fitting', Lat. *amātur* 'X is loved'.

7. There are correspondences in syntax which set Oscan and Umbrian off from Latin. For example, both make freer use of impersonal constructions than does Latin, as seen in Osc. **sakarater** 'a sacrifice is made', Umbr. *muieto fust* 'a noise shall be made'; both have a distinct locative singular form, with wider usage than the corresponding residual Latin locatives, as seen in Osc. **víaí** 'on the road', Umbr. **tafle** 'on the table'; and both make freer use of certain case-constructions, such as the partitive genitive, as in Umbr. **struhçlas fiklas sufafias kumaltu** 'break into pieces (**kumaltu**) some cake (**struhçlas**), sacrificial cake (**fiklas**), sacrificial parts (**sufafias**)'. In this sentence all the nouns are in a partitive genitive construction without an accompanying head nominal, which Latin strongly prefers, as in *pars hominum* 'part of the men'. Headless partitives proliferate in Lithuanian, and are found in Greek and Avestan (Schmalstieg 1980: 75).

8. Oscan and Umbrian share about fifteen lexical items which are not found in Latin, including *her-* 'wish' (Osc. *herest* 'X might wish', Umbr. **heri**, 'X wishes' vs. Lat. *velle* 'to wish'); also *toutā-* 'people, city' (Osc. *toutad* (abl.), Umbr. *totam* (acc.) vs. Lat. *populus* [Lat. *tōtus* 'whole' is probably borrowed]); *pūr-* 'fire' (Umbr. *pir*, Osc. **purasiaí** (loc. sg.) 'fiery' vs. Lat. *ignis*); *uero-* 'door'; Osc. **veru** (acc. sg.), Umbr. *uerir* (abl. pl.) 'door' vs. Lat. *porta*.

Of course, some of the aforementioned structural similarities between Oscan and Umbrian are not compelling. For example, the types of texts which are represented in the Oscan–Umbrian corpus lend themselves strongly to impersonal constructions, and because of the scarceness of the extant Oscan–Umbrian material, they may appear to be more preferred than they actually were in the spoken language, or than they would have been in other types of literature.

4.4.2.4.2. Differences between Oscan and Umbrian

1. Oscan preserves what are thought to be original diphthongs, while in Umbrian these develop into monophthongs. For example, the dat./abl. pl. endings of *ā*- stem nouns appear as Osc. *-ais* for feminines and as *-ois* for masculines, while in Umbrian they appear as *-es*, *-ir*, *-er*. The correspondence of diphthong to monophthong can also be seen in lexical examples like Osc. **avt** 'or', Umbr. **ute**, *ote* (Lat. *aut*); Osc. **prai** 'before', Umbr. *pre* (Lat. *prae*).
2. Oscan makes more systematic contrastive use of inherited long vowels than does Umbrian.
3. Oscan preserves original **s* as *s* or *z*, while in Umbrian it changes to *r* both medially and finally (in Latin it changes to *r* only intervocalically and under certain analogical conditions). Cf. nom. pl. masc. ending Osc. **-ús**, *-us*, and Umbr. **-us**, **-u**, **-ur**, *-ur*, from *-ōs* (later replaced by *ī* in Latin); gen. pl. 1st declension ending Osc. **-asúm**, *-azum*, Umbr. **-aru**, *-arum* (Lat. *-ārum*).
4. Oscan preserves final **-d*, which is usually lost in Umbrian and lost in Latin after long vowels. Cf. Osc. *toutad*, Umbr. **tuta** 'by the people'; Osc. **aragetud** 'with silver', Lat. *argentō*.
5. Oscan preserves intervocalic **-d-*, which in Umbrian becomes *ř* [ŕs]. Cf. Osc. **pedú** 'by foot', Umbr. *persi*, **peři** (Lat. *pede*).
6. Oscan retains original **k* before front vowels, while in Umbrian it assibilates (as it does in Late Latin and Romance): cf. Osc. **fakiiad** 'let X perform', Umbr. **façia** (Lat. *faciat*).
7. In Oscan, an original final **-ns* changes to *-ss*; in Umbrian, the change follows a different path, to *-f* (probably via *þ*), while in Latin it becomes simply *-s*. Cf. Osc. acc. pl. **víass** 'ways' (= Lat. *viās*), and acc. pl. fem. pronoun Umbr. *eaf* (= Lat. *eās*). Rix (1986) has reanalyzed this development in Oscan and Umbrian, however, and has shown how the Oscan treatment of this sequence may have been the same as the Umbrian (i.e. to *-f*), with the further Oscan development of the accusative plurals to **-f-s* > *-ss*. Thus this difference may turn out to have no historical significance.

When the overall shapes of Oscan and Umbrian are considered together, it appears legitimate to group them under a common node, since the similarities far outweigh the differences.

This outline provides some justification for the grouping of Latin with Faliscan and Oscan with Umbrian, and the reasons for separating the two groups from each other. What remains is to investigate the relationship between Oscan–Umbrian and Latin–Faliscan, and to determine what they suggest about the notion of Proto-Italic.

4.4.2.5. The relation of Latin–Faliscan to Oscan–Umbrian

4.4.2.5.1. Similarities

Among the most important similarities between Latin–Faliscan and Oscan–Umbrian, the following are noteworthy:

1. The elimination of the PIE ablative **-eh₂es* in original **eh₂*-stems and its replacement with the ending *-d* from the *o*-stems. Cf. OLat. SENTENTIAD (= *sententiād*) 'by the opinion', Osc. *dolud* (Lat. *dolō*) 'by deceit'. The ablative sg. ending in *-d* spread from *o*-stem nouns to nouns of all five stem classes (this *-d* was eventually lost through normal phonetic change). Cf. the following.

OLat. EOD 'by him' : Osc. **sakaraklúd** 'from the temple'
OLat. MERITOD 'deservedly' : Osc. *contrud* 'against'
Falisc. **rected** 'rightly' : Osc. *amprufid* 'improperly'
OLat. SENTENTIAD 'by the opinion' : Osc. *toutad* 'by the people' (cf. Skt. *áśvāt* 'by horse')

2. The organization of the nominal system into five inflectional groups and the verb system into four.
3. The formation of the imperfect tense in **bā-* (< **bʰueh₂-*), which is unknown outside Italic: cf. Osc. **fufans** 'they were' (**bʰ* > *f* in Osc.), Lat. *amābam* 'I was loving' (**bʰ* > *b* medially in Lat.). This comparison is not universally accepted, however, since **fufans** is the only example of this formation in Oscan–Umbrian, and it is a debated form.
4. The merger of the PIE aorist and perfect into a single category of perfect: cf., for example, the perfects Lat. *dīxī* (*dīc-s-ī*) 'I said', Umbr. *benust* '*vēnerit*' [X will have come], vs. the Greek aorist seen in ἔδειξα 'I showed'.
5. Merger of the PIE optative and subjunctive moods. Morphological relics of the optative in Latin are *sim*, *sīs* (OLat. *siem*, *siēs*) 'I, you might be' (*es-se* 'to be'), and *velim*, *velīs* 'I, you might wish' (*velle* 'to wish').
6. The specialized derivation of the relative pronoun from the interrogative. Cf. the following:

Lat. *quis*, *quid* : Osc. **pís**, **píd** 'who, what' (interr.)
Lat. *quī*, *quae*, *quod* : Osc. **pui**, **paí**, **púd** 'who, which' (rel.)
Lat. *quisquis*, *quicquid* : Osc. **pispis**, *pitpit* 'whoever'

7. The formation of a gerundive in *-nd-*: cf. Osc. **úpsannam** 'to be carried out' (*-nn-* < *-nd-*), Lat. *operandam*.
8. The formation of an imperfect subjunctive in *-sē*: cf. Lat. *foret* 'X was' (subj.) < **fusēd*, Osc. **fusíd**.
9. The merger of the reflexes of PIE **bʰ* and **dʰ* as *f* in initial position:

Lat.	*frātrum*	'brothers' (gen. pl.)	< PIE **b*^{h}*reh*$_2$*trŏm*
Umbr.	**fratrum**		
Osc.	**fratrúm**		
Lat.	*faciat*	'let X perform'	< PIE **d*^{h}*h*$_1$-, zero grade of **d*^{h}*eh*$_1$-
Osc.	**fakiiad**		
Umbr.	**façia**		

10. General agreement in forms of the verb 'to be', e.g. the 1st as Osc. *súm*, Lat. *sum*, the 3rd as Osc. **est**, **íst**, Umbr. **est**, Lat. *est*. These verb forms do not conform to corresponding forms from other IE languages, e.g. Skt. *ásmi*, *ásti*, OLith. *esmì*, *ẽsti*, Gk. εἰμί, ἐστί, Goth. *im*, *ist*, Alb. *jam*, *është*, Hitt. *ešmi*, *ešzi*, OIr. *am*, *is* (< **h*$_1$*es-ti*) in that they lack the primary marker **-i*. Because of its uniqueness, the 1st person parallels are particularly revealing. The correspondence of the first person singular has been strengthened by recent finds of Oscan–Umbrian dialects and Latin which reveal an alternate form of **súm**/*sum*, namely *esum*/*esom*, which point directly to a Proto-Italic **esom*.[6] For detailed arguments on the genetic grouping of the Italic languages based on the distribution of forms in this verb, see Joseph—Wallace (1987) and Wallace—Joseph (1989).

11. Dissimilation of the sequence *l* ... *l* to *l* ... *r*, as in Lat. *mīlit-āris* 'military' (< **mīlit-ālis*—cf. Lat. *cīv-īlis* 'civil', *mort-ālis* 'mortal'), Sab. *flusare* (Lat. *Flōrālis*) 'belonging to the goddess Flora'. The Sabine derivation skips over the unrhotacized *s*, viz: **flusale* > *flusare*.

12. Agreement in the PIE root **deik*- in its meaning 'say', which in other IE languages means 'point out': cf. Gk. δείκνῡμι 'I show, point out' vs. Lat. *dīcere* 'to say', Osc. **deíkum**.

13. Use of third-singular passive impersonally: cf. Umbr. *ferar* 'let one carry', Lat. *ītur* 'one goes'.

4.4.2.5.2. Differences

Some of the differences between Oscan–Umbrian and Latin–Faliscan have been summarized above, in the discussion of Oscan–Umbrian as a subgroup. Several are

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6 The recently discovered Latin **ESOM** 'I am' on the Garigliano bowl can be added to four non-Latin examples of *esum* and three examples spelled *esú* in the inscriptional corpus, strengthening the list of similarities based on this verb. See Baldi (to appear) for the attestations of *esum*/*esú*. The distribution of forms in the present tense of CLat. *esse* has been heavily debated, with various proposals advanced to account for the presence (in *es*, *est*, *estis*) or absence (in *sum*, *sumus*, *sunt*) of the initial *e*. The archaic form **ESOM** confirms the existence of the initial *e* in the Proto-Latin period, as had been conjectured, for example, by Joseph—Wallace (1987: 687). For a discussion of this verb, see, in addition to Joseph—Wallace (1987) and Wallace—Joseph (1989), Bonfante (1932), Bader (1976), Nyman (1977), and Mancini (1997). For an account of the Indo-European prehistory of *sum* and its status as an archaism among the IE languages, see Schmalstieg (1980, forthcoming). For the full text of the Garigliano inscription, see chap. 5.

repeated here.

1. Oscan–Umbrian retains the PIE **-eh₂es* of the nom. pl. of *-ā* stems, while Latin replaces it with *-ae* (< *-āi*) from the pronominal declension (e.g. *quī*, *quoi* 'who'): cf. Lat. *ārae*, Osc. **aasas** 'altars'. This innovation, which is also apparent in *o*-stem nouns such as *servī*, (OLat.) *servoi* 'servants', occurs independently in Greek *ā*- and *o*-stems: cf. φοραί 'burdens', λύκοι 'wolves'.
2. Oscan–Umbrian shows a genitive in *-s* in inherited **o*-stems, whereas Latin has **-ī*: cf. Lat. *fīlīī* 'of the son', Osc. **sakarakleís** 'of the temple'. This *-s* is quite possibly borrowed from the *i*-stems.
3. Latin has a future tense formation form in *-b-* (e.g. *amābō* 'I will love' < **am-ā-bu-ō*) corresponding to the imperfect in **bā-* (e.g. *amābam* 'I was loving' < **am-ā-bu-ām*); Oscan–Umbrian has the future in *-s-*: Umbr. **ferest** 'X will carry', Lat. *feret*.
4. Latin has a future in *ā/ē* in third and fourth conjugation verbs (e.g. *regēs* 'you will rule'); Oscan–Umbrian lacks this formation.
5. Rhotacism (*s* > *r*/V__V), which occurs in Latin and Umbrian, does not occur in Oscan:

Lat. *amā-re* (< **amā-se* 'to love'); cf. *es-se* 'to be'
Lat. *genus, generis* (< **genes-es*) 'race' (nom. and gen. sg.)
Umbr. *erom* 'to be', Osc. *ezum* (< **es-om*)

6. The Latin perfect in *-v-* (e.g. *amāvī* 'I have loved') is not found in Oscan–Umbrian. In Oscan–Umbrian a perfect in *-f-* is characteristic, though others are found as well. Cf. Osc. **aíkdafed** 'it has decreased', Umbr. *andirsafust* 'X will have made the circuit'.
7. The Latin infinitive in *-se* (cf. *es-se* 'to be') is matched in Oscan–Umbrian by a formation in *-om* (*-um*), unknown in Latin as an infinitival marker: cf. Osc. *ez-um* 'to be', Umbr. *er-om*.
8. The two groups differ in their treatment of the PIE labiovelars:

**kʷ* > Lat. *qu* : Oscan–Umbrian *p*:
  Lat. *quanta* : Umbr. **panta** 'how much' (< **kʷeh₂m-teh₂-*)
  Lat. *quis* : Osc. **pís** 'who' (interr.) (< **kʷis*, **kʷid*)
  Lat. *quī* : Osc. **pui** 'who' (rel.) (< **kʷo-*, **kʷeh₂-*)
**gʷ* > Lat. *w* (initially) : Oscan–Umbrian *b*:
  Lat. *veniō* 'I come' : Umbr. *benust* 'X will have come' (< **gʷem-*)
**gʷʰ* > Lat. *f*, *u*, *gu* : Oscan–Umbrian *f*:
  **gʷʰen-* > Lat. *dē-fen-d-ō* 'I defend' (*f*);
  **snigʷʰ-* > Lat. *niv-em* (acc.) 'snow' (*u*);
  **snei-n-gʷʰ-* > Lat. *ningu-it* 'it snows' (*gu*);
  uegʷʰ-* > Umbr. **vufru 'vow' (*o*-grade) (*f*)

9. Certain important lexical differences:

Osc. *touto* :	Lat. *cīvitās* 'state, people'
(cf. Goth. *þiuda*);	
Osc. **puklum** (acc. sg.) :	Lat. *fīlius* 'son'
(cf. Skt. *putráḥ*);	
Osc. **Fuutreí** (dat. sg.) :	Lat. *fīlia* 'daughter'
(cf. Skt. *duhitā́*)	(cf. *fīlius* 'son');
Umbr. **utur** (acc. sg.) :	Lat. *aqua* 'water'
(cf. Gk. ὕδωρ)	(cf. Goth. *ahva*).

4.4.3. Proto-Italic

The proposal of a Proto- or Common-Italic unity is rooted in the notion that the points of similarity between the Latin–Faliscan and Oscan–Umbrian branches are due to shared retentions from an earlier period, while the differences result from their long and different histories before the expansion of Latin into areas previously dominated by speakers of non-Latin Italic languages. If the similarities and differences are viewed in this way, a single node on the tree beneath PIE is relatively easy to justify. This view is represented in figure 4.4a.[7]

The similarities and divergences can also be evaluated in a somewhat different fashion. If the shared features are seen as the result of about a thousand years of close cultural and linguistic contact in the Italian peninsula, then it is quite reasonable to postulate two distinct prehistoric groups in Italy, one the ancestors of the Latin–Faliscan speaking tribes, the other the ancestors of the Oscan–Umbrian speaking tribes. Similarities between the two groups are explained on the basis of areal or geographical linguistic influences, and differences are explained as archaic retentions from the PIE period, or soon after it. This position, represented chiefly by Pisani, is shown in figure 4.4b.

While it is true that either alternative accounts for the facts (cf. Beeler 1966), the evidence for a Proto-Italic unity with a later split into the two main groups, as illustrated in figure 4.4a, is the most secure position to take on this issue, primarily because the comparative evidence is more strongly suggestive of genetic transmission than of borrowing or areal influence. Clear archaisms such as the existence of **súm**/*sum* and now **esum**/*esom* point directly to a period of Common Proto-Italic unity.

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7 A distinct variant of this position is that the Italic languages belong together, and indeed form a separate branch of the IE languages, but that the different dialect groups had already formed before the Proto-Italic invaders left for Italy.

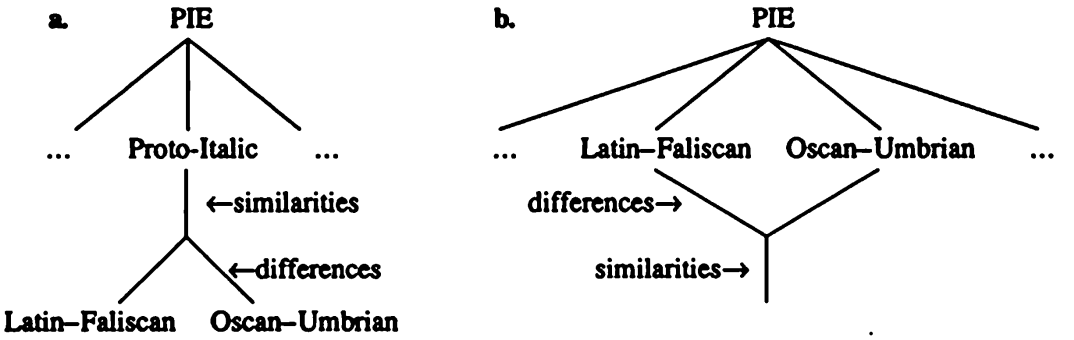

Figure 4.4. Proto-Italic and the relation between Latin–Faliscan and Oscan–Umbrian

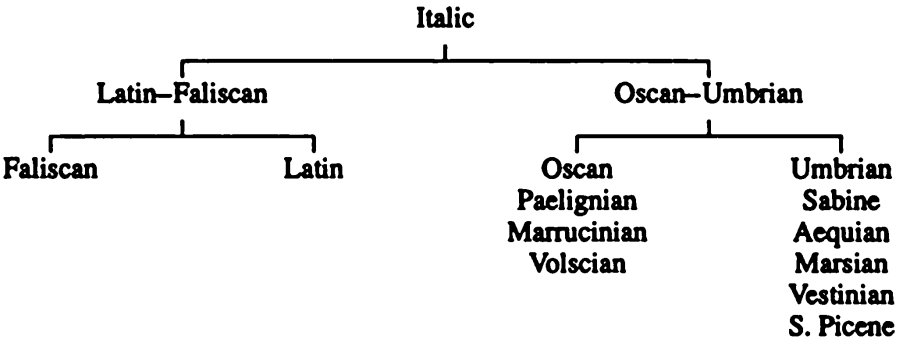

Figure 4.5. A family tree of the Italic languages

In light of the foregoing discussion of the interrelationships and dependencies of the Italic languages and their relation to Latin, the scheme in figure 4.5 is proposed as a model of the genetic makeup of the Italic family. It adopts the notion of a Proto-Italic common language which split into two fundamental groups, with internal divisions as indicated.

4.4.4. Non-Roman elements in Latin

"Whenever members of a social group speaking a given language find themselves in direct contact with other groups speaking another language or dialect, new elements are introduced into the speech of each one of these as a result of economic exchange, political or military relationships—in a word, as a result of the contact of different civilizations. Such is the origin of borrowing." (Ernout 1909: 1).

There are two principal sources of evidence that a given word has been borrowed into Latin from the surrounding languages and dialects. The first is the testimony of some Roman writer who may identify a given word as non-urban, occasionally using such labels as "Sabine". Cicero, for example (*De Or.* 3.44) cautions against *rustica asperitās* 'rustic roughness'; and Quintilian (*Inst.* 6.3.17) praises the *urbānitās* of urban Roman speakers as an indication of learning and education.

Some forms of expression and pronunciation are classified as barbarisms (see the report in Gel. *N A* 13.6).

Another source is the phonological shape of the words themselves. In cases where the non-Latin languages and Latin show different reflexes of the same sound, borrowing is quite easily established. And in cases where the phonology does not provide a clue, as with *popīna* 'cook-shop', which is borrowed from Oscan but could just as easily be Latin, there is the occasional evidence of doublets, in this case the Latin equivalent *coquīna*. Similarly, cf. Praen. *medidies* and Lat. *merīdiēs* 'mid-day'.

There are many phonetic clues to guide recognition and analysis of dialect forms in Latin. Among them are the following (see Ernout 1909: 36–86).

1. Latin tends to weaken unstressed *a* and *e* in interior syllables to *i*: cf. *faciō* 'I make, do' and its compound *cōnficiō* 'I finish'; *capiō* 'I take', and its compound *accipiō* 'I accept'. Many of the Italic languages exhibit no such process, cf. Osc. **Anterstatai** (dat. sg.), Lat. *Interstitae* (the name of a protectress), so that when a word with an etymological *e* or *a* is found in Latin preserved in a weakening environment, it may indicate that the word has been borrowed. Thus Lat. *alacer* 'quick' (not **alicer*), *calamitās* (not **calimitās*) 'loss, harm', *camara*, doublet with *camera* 'vaulted chamber, vault' (< Gk. καμάρᾱ). It should be noted, however, that in these latter cases the Latin forms may reflect a forward vowel assimilation of the syllable-initial *a* to the following vowel, in which case they are not indicative of borrowing.

2. The development of Proto-Italic **au* to *ō* in some rural dialects. Proto-Italic **au* remains *au* in Latin and Oscan but changes to *ō* in Umbrian, which is represented by *o* and *u* in Umbrian texts. For example, cf. Lat. *aut* 'or', Osc. *auti*, but Umbr. *ote*, **ute**; Lat. *taurus* 'bull', Umbr. **turuf**, *toru* (acc. pl.). Latin forms explained as borrowings from dialects which underwent the change of **au* to *ō* are *clōdus* 'lame', *cōdex* 'tree trunk', *ōlla* 'pot, jar', *plōstrum* 'wagon', and *rōdus* 'piece of brass'. Each of these forms exists alongside a doublet in *au*. This development is also identifiable in the popular speech of Rome, which obscures the precise origins of these words. For example, some members of the family of *Claudiī* called themselves *Clōdiī* in order to demonstrate their sympathy for the lower social classes.

3. The reflexes of the PIE labiovelars **k*^{w} and **g*^{w} and **g*^{wh}. In general, Oscan–Umbrian preserves the labial element of the labiovelar, while Latin typically maintains both the labial and the velar (see Sihler 1995: 164–165). When words are found in Latin with a pure labial element in an environment where comparative evidence suggests a labiovelar, borrowing from a "labializing dialect" is a possible explanation. Examples are *bōs* 'cow' for expected **uūs*; *būfō* 'toad' alongside *gūfō*; *lupus* 'wolf' instead of **luquos*; *popīna* 'cook-shop' alongside *coquīna*; and possibly *bāsium* 'kiss' for expected **uāsium*, though the etymology of *bāsium* is obscure and it may not continue an IE labiovelar.

4. In some dialects, initial **g*^{h} develops into *f* instead of the more familiar *h* found in Latin and Oscan–Umbrian. Cf. the following doublets: *harēna*, *fasēna* 'sand'; *haedus*, *fēdus* 'young goat'; *hircus*, *fircus* 'he-goat'; and *hariolus*, *fariolus* 'soothsayer'.

The foregoing sample illustrates the types of phonological criteria that can be used in assessing the status of potential loanwords. When added to the testimony of the ancients, and especially when strengthened by the existence of native doublets, such evidence provides powerful information for the classification of vocabulary.

Certain loanwords in Latin borrowed from rural dialects and neighboring Italic languages include *agāsō* 'driver', *arbiter* 'witness', *asinus* 'ass', *bitūmen* 'bitumen', *boa* 'large serpent', *bōs* 'cow', *botulus* 'sausage', *hircus* (*ircus*) 'he-goat', *lupus* 'wolf', *popīna* 'cook-shop', and *rūfus* 'red'. Words which are most likely borrowed are *(h)ānser* 'goose', *bāsium* 'kiss', *brūtus* 'heavy', *cūpa* 'tub, vat', and *flōrus* 'bright'. Possible loanwords are *af* 'from', *būfō* 'toad', *curis* 'spear', and *dīrus* 'fearful'.

4.5. Relationships between the Italic and other Indo-European languages

4.5.1. Old European, or the civilization of the northwest

There are certain observable parallels between Celtic, Germanic, and Italic. Commonalities of a mostly lexical nature exist between these groups and Balto-Slavic. This has led some scholars, but especially Meillet (see Meillet 1977) and, in a somewhat different form, Krahe (e.g. 1954), to postulate a "northwest civilization" or "Old European" which includes the ancestors of these four groups. Though there are relatively few words that are shared by all four, there are patterns of occurrence which show fairly consistent overlapping, making these parallels jointly stronger than they appear to be when cited singly (cf. Greenberg's "multilateral comparison"). The words come from a wide range of lexical domains, with zoological, agricultural, and sociological terms dominating. Only those groupings which include Latin or some other Italic language are included below; not included are shared items between Germanic and Celtic, Germanic and Baltic, and so on.[8]

4.5.1.1. Italic, Germanic, Celtic, and Baltic

Osc. *touto* 'state', Umbr. (acc.) *totam*, Goth. *þiuda* 'people, nation', OIc. *þjóð*, OE *þēod*, etc., OIr. *túath* 'people', Wel. *tūd* 'land', OPruss. *tauto* 'nation', Latv. *tàuta*

Osc. **trí̄búm** (acc.) 'house', Umbr. *tremnu* (abl.) 'hut, tent', OWel. *treb* 'dwelling', Lith. *trobà*, OE *thorp* 'village'

8 In an evaluative critique of Krahe's theory (see Krahe 1954, 1964b), Vennemann (1994b) proposes that IE toponyms and hydronyms derive from a pre-IE language which is related to Basque, Iberian, and Ligurian. Vennemann calls this family "Old European". For a global genetic view on the early distribution of peoples in Europe, see Cavalli-Sforza—Cavalli-Sforza (1995: 231–235).

Lat. *vērus* 'true', OIr. *fír*, OHG *wār*, OCS *věra* 'faith'

4.5.1.2. Italic and Celtic

Lat. *dē* 'from', OIr. *dí*, Bret. *di*
Lat. *cum* 'with', OIr. *com-*
Lat. *īmus* 'low', OIr. *ísel*, Wel. *isel* 'lower'
Lat. *pectus* 'chest', OIr. *ucht*
Lat. *terra* 'earth', OIr. *tír*
Pronominal forms OLat. *ollo-* 'beyond', *ul-trā*, OIr. *t-all*

4.5.1.3. Germanic and Italic

Lat. *dūcō* 'I lead', Goth. *tiuhan* 'to lead', OHG *ziohan*
Lat. *clāmō* 'I cry out', OHG *hlamōn* 'to cry out'
Lat. *taceō* 'I am silent', Goth. *þahan* 'to be silent'
Lat. *sileō* 'I am quiet', Goth. *ana-silan* 'to be quiet'
Lat. *far* 'barley', OIc. *barr*
Lat. *sulcus* 'plough', OE *sulh*
Lat. *haedus* 'goat', Goth. *gaits*
Lat. *collus* 'neck' (later *collum*), Goth., OIc. *hals*
Lat. *homō* 'man', Goth. *guma*
Lat. *grāmen* 'grass', Goth., OHG *gras*
Lat. *victima* 'animal offered in sacrifice', Goth. *weihs* 'holy'
Lat. *commūnis* 'common', Goth. *gamains*
Lat. *annus* 'year', Goth. *aþnam* (dat. pl.)

4.5.1.4. Germanic, Italic, Celtic

Lat. *ulmus* 'elm', MIr. *lem*, OIc *almr*
Lat. *vērus* 'true', OIr. *fír*, OHG *wār*
Lat. *mentum* 'chin', Goth. *munþs* 'mouth', OHG *munt*, Wel. *mant* 'jaw'
Lat. *vātēs* 'prophet', OE *wōþ-bora* 'poet, prophet', OIr. *fáith* 'poet'
Lat. *captus* (*captīvus*) 'taken, captive', OIc. *haptr* 'serf', OHG *haft* 'taken', OIr. *cacht* 'female servant'
Lat. *vastus* 'ravaged, empty', OSax. *wōsti* 'desolate', OHG *wuosti*, OIr. *fás* 'empty'
Lat. *sāgiō* 'I perceive quickly', Goth. *sōkjan* 'to look for', OHG *suohhen*, OIr. *saigim* 'I look for'
Lat. *alō* 'I nourish', OIr. *alim*, OIc. *ala* 'to nourish, support'

4.5.2. The relationship between Italic and Germanic

There are numerous correspondences between Italic and Germanic, some of which have been considered strong enough by scholars to suggest a prior special relationship. While it is true that many of the commonalities are not unique to Italic and Germanic, making them less probative for an earlier unity, it is also the case that they are at least as powerful, and in some areas (especially the lexicon) even more so than those between Italic and Celtic. See Whatmough (1937: 116–117), Palmer (1968: 16–17), Krahe (1954), and Krahe—Meid (1967–1969, 1: 13ff).[9]

1. The development of two contiguous dental consonants (such as *-tt-*) into *-ss-* or *-s-*: cf. Lat. *sessus* < **sed+tos* 'seated', or *vīsus* < **uoid+tos* 'seen', OHG *giwis(s)* 'certain'. This sibilantization is in contrast with the Sanskrit development of *-tt-* as *-tt-* (cf. *vitta-* 'known') or that of Greek as -στ- (cf. ἄιστος 'unseen'). The change to *-ss-* is also found in Celtic; cf. OIr. *ro-fess* 'it was known'. See Vennemann (1989a).
2. There is some parallelism in the Latin and Germanic treatments of PIE voiced aspirates $*b^h$, $*d^h$, and $*g^h$ in that they develop as plain voiced stops in both groups, at least in some environments. This is not an uncommon phonetic development, however, and might be explained as an independent process in each group.
3. The PIE categories of aorist and perfect are merged in both groups into a single preterit form. However, morphological evidence from Italic provides clear evidence of this merger, and partly on this account it has been suggested that the merger probably took place rather late in this group, thereby indicating nothing of significance with respect to Germanic.
4. The root of the Italic demonstrative pronoun (Lat. *is, ea, id*) is paralleled exactly in Germanic (cf. Goth. *is, ija, ita*), from PIE $*h_1is$, $*h_1ih_2$, $*h_1id$. These forms have a more restricted distribution throughout the IE family than do the forms $*so$, $*seh_2$, $*tod$, which are represented more widely throughout the IE languages (cf. Skt. (unchanged form) *sás, sá, tát*, Gk. ὁ, ἡ, τό).
5. In both Italic and Germanic there is a fusion of two verbs, $*b^huH$- and $*h_1es$-, to form the suppletive verb 'to be': cf. Lat. *sum, est* 'I am, X is', *fuī, fuit* 'I, X was', OE *bēo, is* 'I am, X is'. However, the two roots appear in different parts of the paradigms of the respective languages, and Germanic also evidences the root $*h_2ues$- 'remain' (cf. Eng. *was*, Goth. *wisan*). Furthermore, Celtic also shows two roots for 'be'.
6. There is some distributional similarity in perfect active verb forms with long vowels, e.g. Goth. *sētum* we sat', Lat. *sēdimus*; or Goth. *qēmum* 'we came', Lat. *vēnimus*. This similarity may be fortuitous, however, since the source of the lengthened vowel in each may be secondary. There are also some parallels in certain verbal endings: cf. OHG *heffu, hevis, hevit* 'I, you, X takes' : Lat. *capiō, capis, capit*.

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9 The following summary is drawn primarily from Krahe—Meid (1967–1969).

7. Morphological commonalities can be seen in the formation of adverbial/prepositional items such as Goth. *hvaþrō* 'from where', *jáinþrō* 'to there', and Osc. *contrud* 'against', Lat. *contrā*, Lat. *ultrō* (*ultrā*) 'beyond'.
8. See the list of shared lexical items between Germanic and Italic above. If the list is extended to include wider Italic lexical representatives, such as Oscan and Umbrian, it grows even longer.

Although the Italic–Germanic question has not received the widespread attention of modern scholars that other subgrouping issues have (especially Italo-Celtic),[10] this connection is strikingly strong in several domains, but in particular the lexical one. It becomes even stronger when considered in the context of the "Old European".

4.5.3. The relationship between Italic and Celtic

"Italic and Celtic are closely related. This is universally admitted by Indo-Europeanists ..." (Watkins 1966: 32). The notion of a prehistoric Italo-Celtic unity, reflected as a node intermediate between PIE and Proto-Italic and Proto-Celtic on a family tree, has been debated for well over a century. The Italic and Celtic branches of the IE language family are two historically distinct groups which seem to share a number of characteristics setting them apart from the other languages. The special characteristics are of the usual type: phonological parallels, such as the identical treatment of certain sounds from PIE; morphological parallels, such as the generalization of a given morpheme at the expense of an alternative, or the parallel suppression of a morpheme known to have existed in PIE; and lexical parallels reflected in items shared to the exclusion of other groups.

The familiar methodological issues loom large. Is there a principled way to distinguish archaisms from innovations? Can a weight be assigned to some particular shared characteristic? How many similarities are enough to guarantee a special prior relationship? How reliable is shared cultural vocabulary, or vocabulary in general? For example, Lat. *vātēs* 'seer' has an exact correspondence in OIr. *fáith*; similarly, Lat. *rēx* 'king' is matched by OIr. *rí*. But the first set is joined by Goth. *wōds*, and the second by Skt. *rā́jā*. Does this weaken the lexical parallelism? Should a higher degree of lexical correlation (27% of core vocabulary according to Coleman 1987: 199) be expected between two languages which have purportedly descended from a common intermediate node?

The issue of Italo-Celtic will not be resolved here, since the evidence is merely suggestive, not conclusive. However, the total systems of the two groups and the

10 See however Taylor—Warnow—Ringe (1995), who claim that Germanic came into close contact with Italic and Celtic and borrowed basic lexical items from them. Because they took place very early in the evolution of the IE languages, many of these borrowings cannot be detected from the examination of sound correspondences in cognate forms.

possibility of chance parallel development and shared retentions render the case for Italo-Celtic uncompelling.

What follows is a review of the evidence brought to bear in the Italo-Celtic issue, with some commentary. Further information and discussion in Meillet (1937, 1967, 1977), Watkins (1966), Cowgill (1970), Ringe (1988), and Schmidt (1992); for Old Irish, see Thurneysen (1946).

4.5.3.1. Phonological parallels

1. The PIE sequence *p ... k^{μ} > k^{μ} ... k^{μ} in both Italic and Celtic: cf. *$penk^{\mu}e$* 'five' > Lat. *quīnque*, OIr. *cóic* (Skt. *páñca*, Av. *panča*, Gk. πέντε). This assimilatory change affects only three Latin words (*quīnque* 'five', *coquō* 'I cook', and *quercus* 'oak'), and there is at least one example (*prope* 'near' < *$prok^{\mu}$-) which shows the opposite assimilatory pattern (though *prope* could be a loan). There is some evidence to suggest that the assimilation could have been independent in each group.

2. The parallel development of *$\mathring{r}$ and *$\mathring{l}$ plus vowel as *ar*, *al* in both Celtic and Italic, in contrast to the development of *$\mathring{r}$, *$\mathring{l}$ as *or*, *ol* in Italic (generally), and *ri*, *li* in Celtic (before stops): cf. OIr. *scaraim* 'I separate', Wel. *ysgar* 'separation', Lat. *carō* 'flesh', Umbr. **karne** (dat. sg.), Umbr. **kartu** 'division', all from the root *$(s)krV$-, vs. Lat. *porca* 'ridge between two furrows', Wel. *rhych* 'ridge', from *prk-; or Lat. *ulmus* 'elm' (< *$olmo$- < *h_1lmo-), MIr. *lem*.

The detail here is so minute, and the possibility of parallel but independent development so great, that these phonetic changes should not be taken as indicative of an earlier unity. Consider the parallel rules of accent placement in Greek, Latin, and Modern German, which specify that the accent cannot fall further back than the antepenultimate syllable (actually, accent is trimoraic in Greek, trisyllabic in Latin and Germanic); or the prehistoric first-syllable accent of Latin and Early Etruscan, a commonality between two unrelated languages; or the identical treatment of PIE labiovelars in Oscan–Umbrian and Greek (in some environments) as labials, while in Latin they remain labiovelar (cf. Gk. ποῦ 'where', Umbr. *pue*, Lat. *quō* 'where, how'). Such developments as these, which occurred separately and independently in each language, are of no consequence in assessing prior unities.

4.5.3.2. Morphological parallels

1. Both Italic and Celtic represent the genitive singular of *o*-stem nouns as *-ī* (< *$\bar{\imath}$), which is distinct from either the typical PIE genitive in *-*os* (cf. Goth. *gibōs* 'of the gift'), or the "extended" genitive singular *-*osio* (cf. Skt. *áśvasya* 'of the horse'). Representative forms typically cited are Ogham Ir. *maqī* 'of the son' alongside Lat. *lupī* 'of the wolf'. However, Faliscan preserves the form *-*osio* (**eco quton Evotenosio** 'I am the vase of Evotenos' (Vetter 1953: 285, no. 242 B), as does the

Latin in the Lapis Satricanus forms POPLIOSIO and VALESIOSIO (discussed in chap. 5). Furthermore, there is by some accounts a possibility that the genitive form in **-osio-* provides the basis for Latin pronominal genitives such as *eius* 'his, hers' (< **h₁ei-sios*) and *cuius* 'whose?' (< **kᵘo-sios*), further extending its range in Italic, though the phonology of this development is difficult to resolve. Lepontic (and Venetic) archaic genitives in *-oiso* (cf. Lepontic **χosioiso**, **Plioiso**, Venetic **Kaialoiso**) further confuse the issue (are they metatheses of *-osio*?), though it seems that these endings are distinct from the genitives in *-osio*.

2. A significant parallel between Italic and Celtic are the shared middle verbal endings characterized by *-r*: cf. 1st, 2nd, 3rd sg. Lat. *-or*, *-ris*, *-tur*, OIr. *-ur*, *-ther*, *-thir*, etc. Note here Lat. *loquitur* 'X speaks', OIr. *labrithir*; Lat. *loquimur* 'we speak', OIr. *labrimmir*, as opposed to the endings seen in Gk. τῑμῶμαι, τῑμώμεθα 'I, we are honored'. Additionally, both Italic and Celtic use a completely different participial form in the 2nd plural which is derived from **-meno-* (or **-mh₁no-*). Both use the *-r* form as a marker of the impersonal passive, e.g. Lat. *ītur* 'one goes', Umbr. *ferar* 'let one carry', OIr. *berir* 'one carries', Wel. *gweler* 'one sees'. However, this correspondence has been called into question, first because the *-r* forms are also found solidly in Tocharian and Hittite, two IE languages from far outside the European core (traces also in Phrygian and Armenian); and secondly, because their internal histories in both Italic and Celtic are quite different and show high likelihood of chance parallel evolution from some common archaic form. Indeed, the *-r* is now generally taken as an archaism, reducing this Italic/Celtic commonality to a non-significant shared retention.

3. Old Irish and Latin preserve a common subjunctive form in *-ā-* (Lat. *feram* < **ferām* 'I might carry', OIr. *bera* < **berā*); and a common future form in *-s-* (Lat. *faxō* 'I might do', OIr. *tíasu* 'I will go'). There is evidence, however, that these forms do not share a common origin. The Celtic *-s-*, for example, may continue an aorist indicative, while the Latin *-s-* may continue an aorist subjunctive. A similar situation holds for the *-ā-*, and the common origin of these two formations seems far from secure.

4. Both Italic and Celtic have a future formation which may be unique to these two languages. It is the future in *-b-* (in Latin, cf. *amābō* 'I will love') and *-f-* (in Old Irish, cf. *labraſammar* 'we will speak'). Though the phonetic and morphological equation of these two has been called into question, counterarguments (e.g. by Bammesberger 1970) seem to make it rather secure.

5. Another morphological parallel is that of the superlative formations from **-(i)somo-*, as in Lat. *maximus* 'greatest', Osc. **nessimas** 'nearest', OIr. *nessam*, Wel. *nessaf* 'nearest'. Like the *-b-* :*-f-* correspondence, this one has been called into question on distributional grounds. The two are similar, but not identical in formation and use. For an evaluation, see Cowgill (1970).

6. Both Celtic and Italic make use of a suffix **-tiō̯-n-/-tei-n-*, as seen in Lat. *nātiō*, *nātiōnis* 'nation', Umbr. **natine** (abl.), OIr. *toimtiu*, *toimten* 'thought'. At

least part of this suffix seems to exist in other languages, however (e.g. Gothic, Armenian), raising the possibility of accidental parallelism.

4.5.3.3. Lexicon

Among the lexical correspondences the following appear to be the strongest:

Lat. *dē* 'from', OIr. *dí*, Bret. *di*, in which this meaning is unique to Italic and Celtic

Lat. *trāns* 'across', Umbr. *traf*, tra, Wel. *tra-*, a specifically Italic and Celtic derivative of PIE **terh₂-* 'cross, penetrate, defeat'

Lat. *cum* 'with', OIr. *com-*

Lat. *īmus* 'low', OIr. *ísel*, Wel. *isel* 'lower'

Lat. *pectus* 'chest', OIr. *ucht*

Lat. *terra*, OIr. *tír*, with the unique meaning of 'earth' in Italic and Celtic

Lat. *saeculum* 'century, generation', Wel. *hoedl* 'century, life', OBret. *hoetl*

Pronominal forms OLat. *ollo-* 'beyond', *ul-trā*, OIr. *t-all*.

The lexical evidence for Italo-Celtic is surely the weakest of all. According to Coleman (1987: 199), Latin has more affinity in its core vocabulary with Gothic (38%) than with any other IE language, including Celtic.

A final phonological note. The Italic and Celtic languages can be broadly classified as either "*Q*-dialects" or "*P*-dialects" according to the outcome of the PIE labiovelars **k*^{w} and **g*^{w} as either (labio-)velars or labials. Latin, Faliscan, and Old Irish are "*Q*-dialects", while Oscan, Umbrian, Welsh (and Gaulish) are "*P*-dialects" (cf. Lat. *quattuor* 'four', OIr. *ceth(a)ir* vs. Osc. *petora*, OWel. *petguar*). This distribution might be taken to indicate a narrow Italo-Celtic isogloss in which the Oscan–Umbrian subgroup and the Brythonic subgroup of Insular Celtic form one dialect group and the Latin–Faliscan subgroup and the Goidelic subgroup of Insular Celtic form another. However, the centum languages generally show a *P*/*Q* distribution, so nothing more can be made of the Italic and Celtic evidence.

In the final analysis, the evidence for an Italo-Celtic common language is not systematically strong. As Watkins (1966: 31) and others have pointed out, there are many more divergences in structure between the two than there are commonalities. Furthermore, many of the apparent similarities between Italic and Celtic are not the result of common innovation, but rather common retention, which is of no probative value in establishing subgroups. The conclusion seems secure that there is no such intermediate common language as "Italo-Celtic" in the IE family of languages.

4.5.4. The relationship between Latin and Greek

It is well known and easily demonstrated that Italy was culturally indebted to Greece from the earliest times. Southern Italy and Sicily differed fundamentally

from the regions to the north, these differences being largely due to the direct influence of Greece from at least the eighth century B.C.E. and continuing right up through the high point of Roman civilization.

The influence of Greece is noticeable throughout the cultural and archaeological record of Italy and can be found in the language as well from a very early period. Some of the most important borrowings in Latin are from Greek and can even be traced back specifically to the Doric dialect because of the phonological patterns of the borrowed words. Many of the borrowings from Greek were filtered through the medium of Etruscan, a process which left its mark on the phonological structure of the borrowings by a variety of distortions. The forms themselves show not only their antiquity, but also their route into the language.

A good illustration of an ancient borrowing from Greek into Latin is a form of the ethnic name *Achīvī* 'Achaeans, Greeks'. This form must have been borrowed from Greek before the loss of the digamma (Ϝ), which represented the sound /w/ in early Greek texts but was lost as an independent phoneme in Attic–Ionic before the earliest inscriptions. The presence of the *v* in *Achīvī* suggests a Greek form Ἀχαϝοί as the source, in contrast with the form *Achaeī*, borrowed from later Attic–Ionic Ἀχαιοί.

Other phonological evidence is available for roughly dating Latin borrowings from Greek. One of the best-known changes in Attic-Ionic is the continued development of PIE **eh*$_2$ into *ē* from *ā*, which is preserved as *ā* in Doric and other dialects; cf. such pairs as Dor. μᾱ́τηρ, Attic–Ionic μήτηρ 'mother'; Dor. μᾱχανᾱ́ 'machine', Attic-Ionic μηχανή. Thus a word like Lat. *māchina* 'machine' (later written *māchina*) either was borrowed into Latin from an *ā*-preserving dialect of Greek such as Doric (cf. Ernout—Meillet 1967, s.v.), or was borrowed from an *ā*-changing dialect before the change of *ā* to *ē*. But since this word has also undergone vowel weakening of the unstressed medial *a*, changing it to *i* (cf. *faciō* 'I make, do', *cōnficiō* 'I finish', etc.), and vowel weakening is thought to have been completed in Latin sometime between 400 and 250 B.C.E., it is safe to assume that this word was borrowed into Latin before 250 B.C.E. This pattern of vowel reduction is also seen in *camera* (Gk. καμάρᾱ) 'vault', providing information on the date of the loan into Latin from Greek.

The intermediacy of Etruscan is apparent in some Greek loans into Latin, a fact which also indicates an early date for the process. Among these are *amurca* (ἀμόργᾱ) 'water from olives', *sporta* (σπυρίδα (acc.)) 'basket', *triumpus* (Gk. θρίαμβος) 'procession'. In these words the key to the Etruscan intermediacy, and hence to the early date of the loan, is the phonological distortion as the words are rendered into Latin. Etruscan had no voiced stops (*b d g*), so the substitution of the corresponding voiceless stops (*p t k*) in these words suggests Etruscan intermediacy.

Greek influence on Latin, and on Italy, did not end in the early period. Even as Rome established itself as the dominant political and military presence in the Medi-

terranean area, Greek influence continued. The Romans imitated the Greeks in literature, the rhetorical arts, philosophy, fashion, and science. From the use of formulae, to meter, to word-formation, to grammar, even down to archaic word uses, the pervasive influence of Greek on Roman writers is evident. For example, Latin borrowed a large number of Greek words containing the suffix -ιζειν. This suffix usually showed up in Latin as *-issāre* (e.g. *rhētorissāre* 'to speak rhetorically', *cymbalissāre* 'to strike cymbals'), later *-izāre* and *-idiāre*. The use of this suffix was extended in some authors to novel formations such as *trullissāre* 'to plaster' and *moechissāre* 'to ravish' (see Leumann 1959: 156–170).

The effect of cultural dependence on Greece is most clearly seen in the lexicon of Latin—not only the learned literary lexicon, but also the everyday speech of Romans. Table 4.4 is a brief selection from a variety of semantic areas, including nautical terms, warfare, business, love, vice, virtue, and others (see Palmer 1968: 74–94). The source for most of these words is the comedies of Plautus, which are thought to closely mirror the speech of the everyday Roman of the time. There are even words borrowed from Greek which violate the phonotactic pattern of Latin, such as those beginning with *ps-*, *pt-*, or *mn-*. (Note that in many of the examples the Latin and Greek words have different meanings). This list could be greatly expanded, especially from the literary, philosophical, and other cultured traditions.

Greek influence on Latin is evident elsewhere as well. For example, the placement and use of interjections and the use of some formulae are clearly based on Greek models. Some scholars even argue that Hellenisms have found their way into Latin syntax, as the following example from Catullus illustrates (*Carm.* 4.1).

> *Phaselus ille, quem videtis, hospites, ait fuisse navium celerrimus.*
>
> 'That ship, which you see, guests, says that it was the swiftest of ships.'

Cf. also the following example from Ovid (*Met.* 13.141).

> *... quia rettulit Aiax, esse Iovis pronepos ...*
>
> 'Because Ajax claimed to be the great-grandson of Jove ...'

These constructions are viewed as Hellenisms in Latin because of the structure of the clause after the main verb. Latin requires that embedded sentential complements such as those in the above examples occur with an accusative subject in Latin, the so-called *ōrātiō oblīqua* 'indirect statement' or AcI (*accusātīvus cum infīnītīvō*) 'accusative plus infinitive' construction. The embedded clause is marked by $_S[\ ]_S$.

Phaselus ait $_S$[Ø *fuisse navium celerrimus*]$_S$

or

Aiax rettuliit $_S$[Ø *esse Iovis pronepos*]$_S$

Table 4.4. Greek loanwords in Latin

Latin	Greek	
Nautical terms		
aplustra (pl.)	ἄπλαστα	'carved stern of a ship, with ornaments'
campsō	κάμπτω	'to sail by'
celōx	κέλης	'swift-sailing ship'
lembus	λέμβος	'yacht, cutter'
nauclērus	ναύκληρος	'ship-master'
nauta	ναύτης	'sailor'
nautea, nausea	ναυτία, ναυσία	'nausea'
pausārius	παύσαι	'commander of the rowers'
prōra	πρῷρα	'prow of a ship'
stega	στέγη	'deck'
Terms relating to trade		
danīsta	δανειστής	'money-lender'
exagōga	ἐξαγωγή	'export'
logista	λογιστής	'accountant'
symbolus, -um	σύμβολος, -ον	'sign, mark'
syngraphus	σύγγραφος	'written contract'
trapēzīta	τραπεζίτης	'money-changer'
Technical terms		
architectus	ἀρχιτέκτων	'architect'
ballista	βάλλω	'machine for projectiles'
glaucōma	γλαύκωμα	'cataract'
grammatica	γραμματική	'grammar'
machaera	μάχαιρα	'sword'
paedagōgus	παιδαγωγός	'pedagogue'
pessulus	πάσσαλος	'bolt'
syllaba	συλλαβή	'syllable'
Terms for foods and animals		
bālaena	φάλαινα	'whale'
balanus	βάλανος	'acorn, fruit'
canthērius	κανθήλιος	'gelding'
concha	κόγχη	'mussel'
nārīta	νηρίτης	'a kind of snail'
ptisana	πτισάνη	'barley-groats'
scomber	σκόμβρος	'mackerel'

Table 4.4. Greek loanwords in Latin *(continued)*

Latin	Greek	
Terms for everyday objects		
amphora	ἀμφορεύς	'jar, pot'
batioca	βατιάκη	'drinking vessel'
cadus	κάδος	'bottle, jug'
cantharus	κάνθαρος	'tankard'
cista	κίστη	'wooden basket'
culleus	κολεός	'leather bag for liquids'
cyathus	κύαθος	'small ladle'
fūcus	φῦκος	'rouge'
gaulus	γαυλός, γαῦλος	'pail'
lagoena	λάγηνος	'flask'
macellum	μάκελλον	'meat-market'
marsuppium	μαρσύπιον	'pouch'
patina	πατάνη	'shallow dish'
platēa	πλατεῖα	'street'
psithius	ψίθιος	'a kind of Greek vine'
scyphus	σκύφος	'cup'
spinter	σφιγκτήρ	'a kind of bracelet'
Terms for institutions and related objects		
āthlēticus	ἀθλητικός	'athletic'
chorāgium	χορηγίᾱ	'place where the chorus is trained'
discus	δίσκος	'quoit'
palaestra	παλαίστρᾱ	'wrestling school'
psaltērium	ψαλτήριον	'stringed instrument'
scaena	σκηνή	'stage'
Miscellaneous		
bardus	βραδύς	'stupid'
blennus	βλεννός	'blockhead'
cincinnus	κίκιννος	'lock of hair'
cōmissor	κωμάζω	'to revel'
harpagō	ἁρπάγη	'grab-all'
hilarus	ἱλαρός	'cheerful'
massa	μάζα	'lump'
mnēmosynum	μνημόσυνον	'souvenir'
moechus	μοιχός	'adulterer'
mōrus	μωρός	'foolish'
parasītus	παράσῑτος	'sponger'
sȳcophanta	συκοφάντης	'informer'

These are parallel to constructions like the following:

Diana dicit $_S$[*se esse bonam*]$_S$
Diana says $_S$[herself to be good]$_S$

'Diana says that she is good.'

The omission of the accusative subject *sĕ* in the complement clauses of these two examples is said to be under the influence of Greek, where such a construction is possible when the subject of the complement clause is identical with that of the main verb, as in Hdt. 4.151.

ἔφη ὑπ' ἀνέμων ἀπενειχθεὶς Ø ἀπικέσθαι ἐς Λιβύην
He said by the winds driven out to have come to Libya

'He said that, having been driven out by the winds, he (Ø) had come to Libya.'

There is some debate over the status of such subjectless embedded clauses in both Latin and Greek. Structures such as these must have been grammatical in Latin or else they could not have been borrowed at all. Though Greek influence is at least a possibility here, it is just as reasonable to argue that real syntactic borrowing between languages is not possible, and that structural parallels such as these reflect marked Latin constructions which happen to mirror Greek structures. For discussion see Coleman (1975).

A final example of possible Greek influence on Latin syntax comes from Vergil, who uses the intransitive verb *latēre* 'to be concealed' with an accusative complement, an apparent borrowing of the selectional restrictions of the parallel Greek verb λανθάνω 'I escape notice', which Homer often uses with an accusative construction.

... *nec latuere doli fratrem Iunonis et irae.* Verg. *Aen.* 1.130

'Nor did Juno's wiles and wrath escape the notice of her brother.'

Of course, not all the unique characteristics shared by Greek and Latin are the result of borrowing or copying. There are several features which the two languages share which indicate possible special relationships, though they are too few and too marginal to be indicative of any earlier unity. Among the more salient similarities between the two are certain morphological innovations in nominal endings, such as the inherited nominative plural *o*-stem ending **-ōs* (cf. Goth. *þái wulfōs* 'the wolves', Skt. (unchanged form) *té vṛ́kās*) being replaced by *-oi* in Latin (> *-ī*), and by -οι in Greek (cf. Lat. *lupī*, Gk. λύκοι); and the nominative plural ending **-eh$_2$-es* of the **-eh$_2$-* stem nouns becoming *-āi* (> *-ae*) in Latin and -αι in Greek, replac-

ing **-ās*: cf. Goth. *gibōs* 'gifts', Ved. (unchanged form) *priyấs* 'dear' vs. Lat. *viae* 'roads', Gk. χῶραι 'lands', a development also seen in Tocharian B noun inflection of the thematic class. The source of the new endings in both Greek and Latin is the pronominal system. But not much should be made of these parallels. Old Latin shows the original **-ās* forms in many attestations (e.g. VIAS (= *viās*) 'the roads'), and some are recoverable for the **-os* ending as well. Furthermore, these endings are common in the other Italic languages (cf. Osc. **Núvlanús** 'citizens of Nola', **aasas** 'altars'), showing that the intrusive replacement of the nominative plurals in Greek and Latin is an independent innovation in each language, one which cannot even be taken back to Proto-Italic. Similarly, the parallel treatment of the aspirated variants of the PIE voiced series $*b^h *d^h *g^h$, which become voiceless in both Greek (as φ, θ, χ) and in Latin (as *f*, *f*, *h*) is also an independent innovation in each language, since devoicing of voiced stops is not a development which is exclusive to these two languages. This feature is thus not generally considered to be diagnostic of any special relationship, nor are the lexical items which the two share exclusively.

4.6. Summary

In this chapter the languages of ancient Italy have been surveyed in detail, and specimens of every Indo-European and non-Indo-European language found in the peninsula have been presented and evaluated. Through an analysis of the data provided by these languages, it has been shown that Latin is a member of the Italic family of the Indo-European languages. Various proposals for the precise internal makeup of the Italic group are reviewed. It has been demonstrated that Faliscan is the closest relative to Latin within Italic, and together the two constitute the Latin–Faliscan subgroup. The other subgroup of Italic languages is made up of the Oscan–Umbrian (Sabellian) languages, which comprise all the Italic languages other than Latin and Faliscan. Latin has also been analyzed in terms of its possible wider genetic relationships with other branches of Indo-European. Latin shares a number of lexical, morphological, and phonological characteristics with several other western IE languages, especially Celtic, Germanic, and Greek, each of which is evaluated in terms of potential close genetic links. None of these, however, is close enough to Latin to justify the postulation of an intermediate node on the family tree of IE languages such as "Italo-Germanic" or "Italo-Celtic", nor is Latin in any special genetic relationship with Greek.

Chapter 5
Materials for the study of Latin

To understand Latin as a descendant of PIE, linguistic material should be considered from the earliest attestations (ca. 600 B.C.E.) up to about 200 C.E. Although a terminal point of 100 C.E. might be adequate to accommodate most of the salient structural and lexical features of Latin, extending the investigation to a later date permits access to revealing information which is found in some literature, graffiti, late inscriptions, and papyri. Additionally, grammarians writing as late as the fifth or sixth century C.E. can be mined for information on the earlier language, since they often provide discussion or illustration of old words and forms, alternate meanings, and borrowings which are otherwise not part of the historical record.

5.1. Samples of Latin inscriptions, with commentary

See chap. 4 for two additional Latin inscriptions, and a brief discussion of the infamous Praenestine Fibula (chap. 4, n. 2).[1]

5.1.1. The Castor and Pollux dedication

From Rome, ca. 550–525 B.C.E. (plate 18), found in 1958 about 30 km from Rome during an excavation of an old sanctuary at Lavinio (ancient Lavinium; for the archaeology of Lavinium see Holloway 1994: 128–141). Castor and Pollux were popular figures in Roman mythology and ritual who are recognized in the ceremonial interjections *edepol* 'by Pollux' and *(m)ecastor* 'by Castor'.

CIL 1^2: 4.2833; Pisani (1960: 11, A 6 *ter*); Gordon (1983: 76–77); Wachter (1987: 85–90).

CASTOREI•PODLOVQVEIQVE | QVROIS
Castōrī Pollūcīque κούροις

1 Material reviewed in this section is based primarily on the following sources: Conway (1897), Conway—Whatmough—Johnson (1933), Pisani (1960–1964), Pulgram (1978), and Gordon (1983). See also Dessau (1892–1916), Ernout (1957), Diehl (1964), and the *Corpus Inscriptionum Latinarum* (*CIL*). For an orientation to Latin epigraphy, in addition to Gordon (1983), see Sandys (1927), Lindsay (1897 [1970]), Almar (1990), and Keppie (1991). Discussions of selected individual inscriptions can be found in Wachter (1987) and Vine (1993). For a review of epigraphical conventions used in this volume, see chap. 4, page 121. For a general discussion of the contribution of archaic inscriptions to the knowledge base of Latin studies, see Flobert (1991).

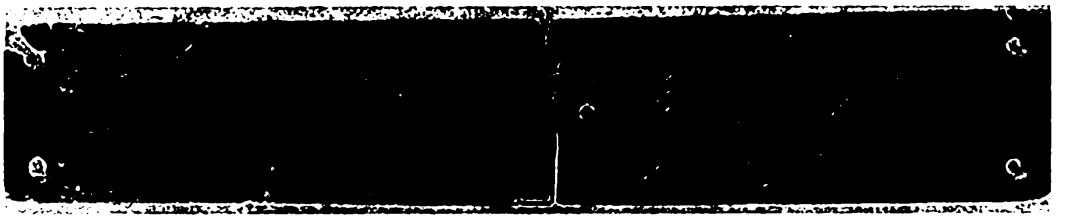

Plate 18. Latin: Castor and Pollux dedication

'To Castor and Pollux sons (of Zeus)'

Discussion: The inscription is interesting in its preservation of the OLat. dat. in *-ei* (= CLat. *ī*), and for the form PODLOVQVEI, which seems to be a misrepresentation of Greek Πολυδεύκης. QVROIS is a transliteration of Greek (Ion.) κούροις 'to the sons', in the dat. pl. masc.

5.1.2. The Duenos inscription

Discovered in Rome in 1880, from ca. 580–570 B.C.E., the Duenos inscription is inscribed around a three-part terracotta bowl (plate 19). It is one of the most heavily studied yet poorly understood of the Early Latin inscriptions. There are numerous interpretations of the text (Gordon 1983 mentions that there are "over fifty interpretations, no two in full agreement").[2] Although most commentators agree on the general meaning of the first and third lines, the second remains a near mystery. The lack of word-divisions in the inscription is less an impediment to understanding than the unclear meanings of the words.

CIL 1^2.4; Stolz—Debrunner (1953: 66); Pisani (1960: 6-8, A 4); Pulgram (1978: 167-171, L 4); Gordon (1983: 77-78); Wachter (1987: 70-75); Rix (1985); Eichner (1988-1990); Vine (1997).

IOVE/SATDEIVOSQOIMEDMITATNEITEDENDOCOSMISVIRCO-
SIED
ASTEDNOISIOPETOITESIAIPAÇARIVOIS
DVẸNOSMEDFEÇEDENMANOMEINOMDVẸNOINEMED-
MAḶOSTATOD

A possible partial interpretation of the inscription follows, with an equivalently partial Classical Latin rendition. Note that MED 'me' refers to the bowl.

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2 See Pisani (1960: 6–7), Gordon (1983: 77). Eichner (1988–1990) analyzes the Duenos vase in metrical terms. His overall position is that the text is a kind of advertisement for the cosmetic substance which he assumes was stored in its three chambers. Vine (1997) is sharply critical of Eichner's interpretation.

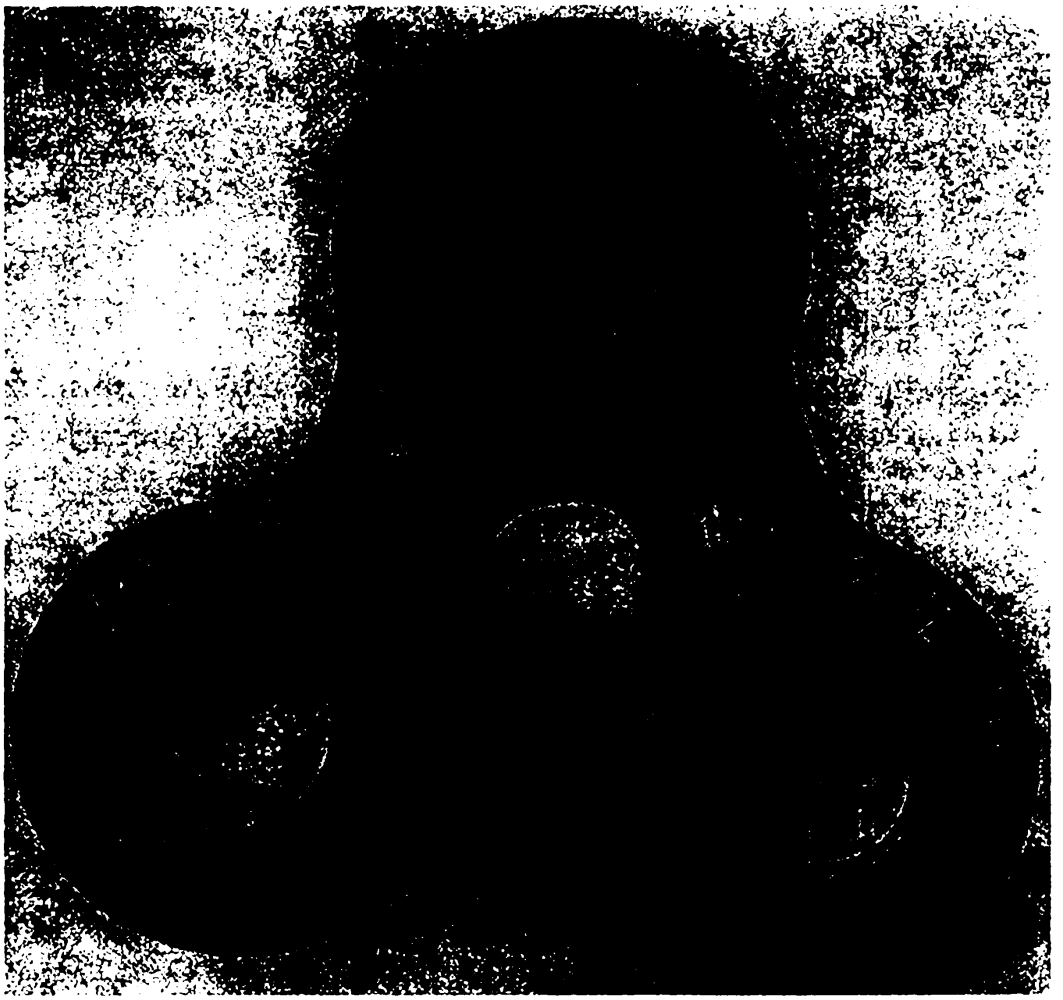

Plate 19a. Latin: Duenos inscription

Iovesat deiuos qoi med mitat nei ted endo cosmis uirco sied | asted noisi opetoi tesiai pakari uois | duenos med feked en manomeinom duenoi med malos tatod.

Iūrat deōs quī mē mittit—ni in tē [= ergā tē] cōmis uirgō sit
ast tē nisī [OPETOITESIAIPAÇARIVOIS]
Bonus mē fēcit in MANO(M) MEINOM bonō. nē mē malus tollitō.

'The one who gives me swears by the gods—if the girl is not friendly toward you, and if you ... Bonus made me as a fine gift for a good man: let an evil person not steal me.'

Discussion: The first line seems securely interpretable except for the form MITAT. It is not clear what verb or verb form this is, the similarity with CLat. *mittit* 'X

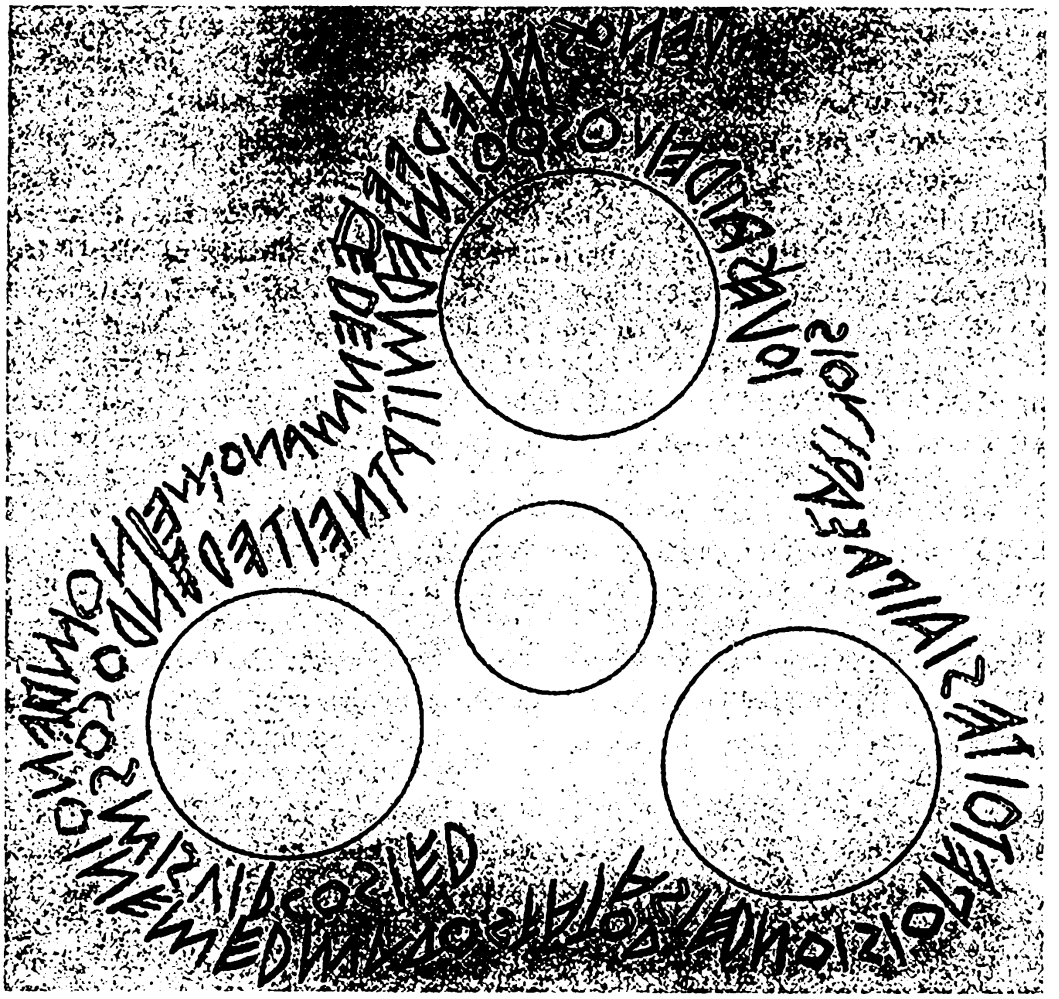

Plate 19b. Latin: Duenos inscription

sends' notwithstanding. It is probably an indicative of a "first conjugation" verb, not a subjunctive (= CLat. *mittat*), with a meaning something like 'gives' or 'offers'. The other forms in this line seem to have fairly transparent classical equivalents. The second line, from ASTED to RIVOIS, has defied clear interpretation. ASTED looks like the OLat. connective *ast* followed by *tē*; NOISI may be Lat. *nisī* 'if ... not'; OPETOITESIAPAÇARIVOIS has been variously interpreted: OPETOIT may be a thematic optative of *oppetere* 'to meet a violent death'; or a form of *optāre* 'to select'; or a form of *portāre* 'to carry'; other possibilities exist as well. The first part of ESIAIPAÇARIVOIS has been represented as *esiai pācā* 'subdue her', in which *esiai* is dative after *pācā*; RIVOIS could be equivalent to CLat. *rīvus* 'stream', metaphorically here 'streams of perfume'. Steinbauer has suggested (1989: 35) that the sequence PAÇARIVOIS represents CLat. *pācā rīvīs* 'pacify by means of libations', though the context does not favor this interpretation, since *rīvus*

is not otherwise found with this meaning. Further possibilities are that the sequence should be segmented as PAÇAR IVOIS, with PAÇAR a passive infinitive (cf. GNOSCIER in the *SC de Bacch.*) 'to be pacified', though the meaning of IVOIS is not apparent. A final, perhaps far-fetched, possibility, is that RIVOIS is a metathesized deformation of (dat.) VIROIS 'men', joined together with PACA to mean 'pacify (the) men'. This interpretation is not well supported contextually, however. The final part of the inscription beginning with DVẸNOSMEDFEÇEDENMANOMEINOM is generally agreed upon except for MANOMEINOM. MANO(M) in MANOMEINOM is obviously an old word for *bonum* reported by Varro (*Ling.* 6.4). Vine (1997) connects MEINOM with Lat. *mūnus* 'duty, service, offering', taking ENMANOMEINOM to mean 'as a fine gift', making the whole line mean 'Duenos made me as a fine (exchange-)gift for a good man'. The remainder of the line, DVẸNOINEMEDMAḶOSTATOD, has been analyzed by Rix (1985). Rix proposes to read DVẸNOI as a dative 'for a good man', followed by NE MED MAḶOS TATOD, a negative future prohibition made up of MAḶOS 'a bad man', MED 'me', and NE ... TATOD (cf. Hitt. *tāyazzi* 'steals') 'should not steal', i.e. 'let a bad man not steal me', an interpretation which seems preferable to others which have been proposed (cf. the final few words of the next inscription, the Garigliano bowl, viz. NEI PARI MED 'do not take possession of me'). Further points of morphological or phonological interest in this specimen are the inherited diphthongs in DEIVOS (*deōs*), NEI (*nī*), EINOM (cf. Umbr. *enom* 'then'); the unrhotacised *-s-* in TESIAI and IOVESAT (= *iūrat*); unchanged consonant cluster *-sm-* in COSMIS (*cōmis*); the final *-d* in SIED (*siet*), FECED (*fēcit*), and TATOD, and in the acc. forms MED (*mē*) and TED (*tē*); the preservation of initial *du-* in DVẸNOS (*bonus*) 'good', cf. *duellum* = *bellum* 'war'; and the old dat. sg. ending in DVẸNOI.

5.1.3. The Garigliano bowl

The following inscription is written on a bowl discovered along the Garigliano river in west central Italy, between Lazio and Campania, in the ancient territory occupied by the Aurunci, between the Latini and the Volsci. It was first reported and discussed by Cristofani (1996), with further elaboration by Mancini (1997) and a reinterpretation by Vine (1998). The inscription, which has been dated by Cristofani to the first half of the fifth century B.C.E., is written in a form of the Western Greek/Etruscan alphabet. There are several unclear letters on which the variant readings are centered. The inscription is written on two parts of the bowl. The first (A below) contains a single name; the second (B below) is much longer and contains several interesting archaic forms. B is written without word breaks in a continuous circle. Both parts are read left to right. As interpreted by Cristofani, it runs as follows.

A. αhυιδιεσ
B. παριμεδεσομκομμεοισσοκιοιστριϝοιαδδεομδυο[---]νει

With word breaks:

παρι μεδ εσομ κομ μεοις σοκιοις τριϝοιαδ δεομ δυο[---]νει

Mancini (1997) reorders the first two words παρι μεδ to form a syntactic unit with νει, reads the final δ of τριϝοιαδ as an ι, and conjectures [ναι] after δυο, with the following (transliterated) interpretation.

A. AHUIDIES

'Avidius'

B. ESOM KOM MEOIS SOKIOIS TRIVOIAI DEOM DUONAI NEI PARI MED

'I belong [lit. 'am'], together with my companions [scil. the other votive objects], to Trivia, the good (one) of the gods. Do not take possession of me.'

Vine (1998), while accepting **NE PARI MED** and **KOM MEOIS SOKIOIS**, reinterprets the remainder of the inscription significantly, as follows.

A. AHUIDIES

'Audius/Audeius'

B. ESOM KOM MEOIS SOKIOIS TRIβOS AUDEOM DUO[M] NEI PARI MED

"I am, together with my three companions [the bowl/possession] of the two Audii (i.e. 'I, together with my three companions, belong to the two Audii'). Do not take possession of me.'

Discussion: The form **AHUIDIES** (part A) is most likely a nominative singular (it could be plural, though this appears less likely), marking the simple citation of the owner's family name. It is not a Latin word, but is rather in a non-Latin/Faliscan language of the Italic group. It has syncopated equivalents in Oscan as **ahvdiu** and **avdiis**, which correspond to Lat. *Audius/Audeius*, as Mancini notes (1997: 11ff.). Part B of the inscription contains a number of interesting features, among which is the form **ESOM** (= CLat. *sum*). This **ESOM** is the first specifically Latin attestation of the older form of the first person singular of *esse* which contains the initial *e*. The

non-Latin inscriptional form *esum* had already led investigators to posit a Proto-Latin and Proto-Italic **esom*, so the discovery of the form **ESOM** on the Garigliano bowl has a strong confirmatory effect. Beyond **ESOM**, the form **KOM** equals CLat. *cum*; **MEOIS SOKIOIS** (= *meīs sociīs*) shows the older ablative plural ending *-ois*, previously found only in the Castor and Pollux dedication (plate 18), and the controversial RIVOIS of the Duenos inscription (plate 19); **TRIβOS** (= *tribus*) modifies **MEOIS SOKIOIS**; **AUDEOM DUO[M]** shows the predicted OLat. genitive plural form *-om* (later *-um*), which preceded the CLat. form *-orum* (cf. DVOMVIR (*CIL* 1^2.1225) 'one of (a committee of) two men'). Vine's elegant analysis of **AUDEOM DUO[M]** as a genitive places it with other "talking inscriptions", which uniformly express ownership with *ego/sum* plus the genitive, not the dative as the other reading requires. Vine's interpretation has the further merit of matching the name **AUD(E)IUS** of Parts A and B, and eliminating the need to justify the unexplainable *o* in Cristofani's (τριϜοιαδ) and Mancini's (**TRIVOIAI**) readings of the name for the goddess *Trivia*; the phrase **NEI PARI MED** contains an older form of the negative particle *nī* with diphthong preserved, **PARI** appears to be an imperative of *pariō* 'I acquire', and **MED** is the well-attested older accusative for 'me', CLat. *mē*. The sense here of 'do not take possession of me' parallels almost exactly the injunction found in other inscriptions, notably Duenos, where the bowl urges 'do not let a bad man steal me'.

5.1.4. The Forum Romanum cippus

From Rome, ca. 570–550 B.C.E. This inscription was found in the Roman Forum on a pillar beneath the *lapis niger* pavement in 1899 (plate 20). For the archaeology of the Forum and the following cippus see Holloway (1994: 81–90). The text is probably a religious or funerary dedication.

The stone is badly damaged and the beginnings and endings of lines are lost, making word divisions and clear readings difficult. The original text is written in boustrophedon form, in which lines of the text run alternately left to right and right to left, with a direction change at lines 11 and 12; additionally, lines 8, 9, and 16 of the original are written upside-down. Neither the boustrophedon nor the inverted lines are reproduced in the following citation. The standard view of how the cippus may have come to be written this way, when the stonecutter accidentally changed his position relative to the cippus, is illustrated graphically in Wachter (1987); against this is Vine (1993), who assumes a significance to the inversion relative to other lines.

CIL 1^2.1; Pisani (1960: 1, A 1); Gordon (1983: 78–80); Wachter (1987: 66–69); Vine (1993: 31–64).

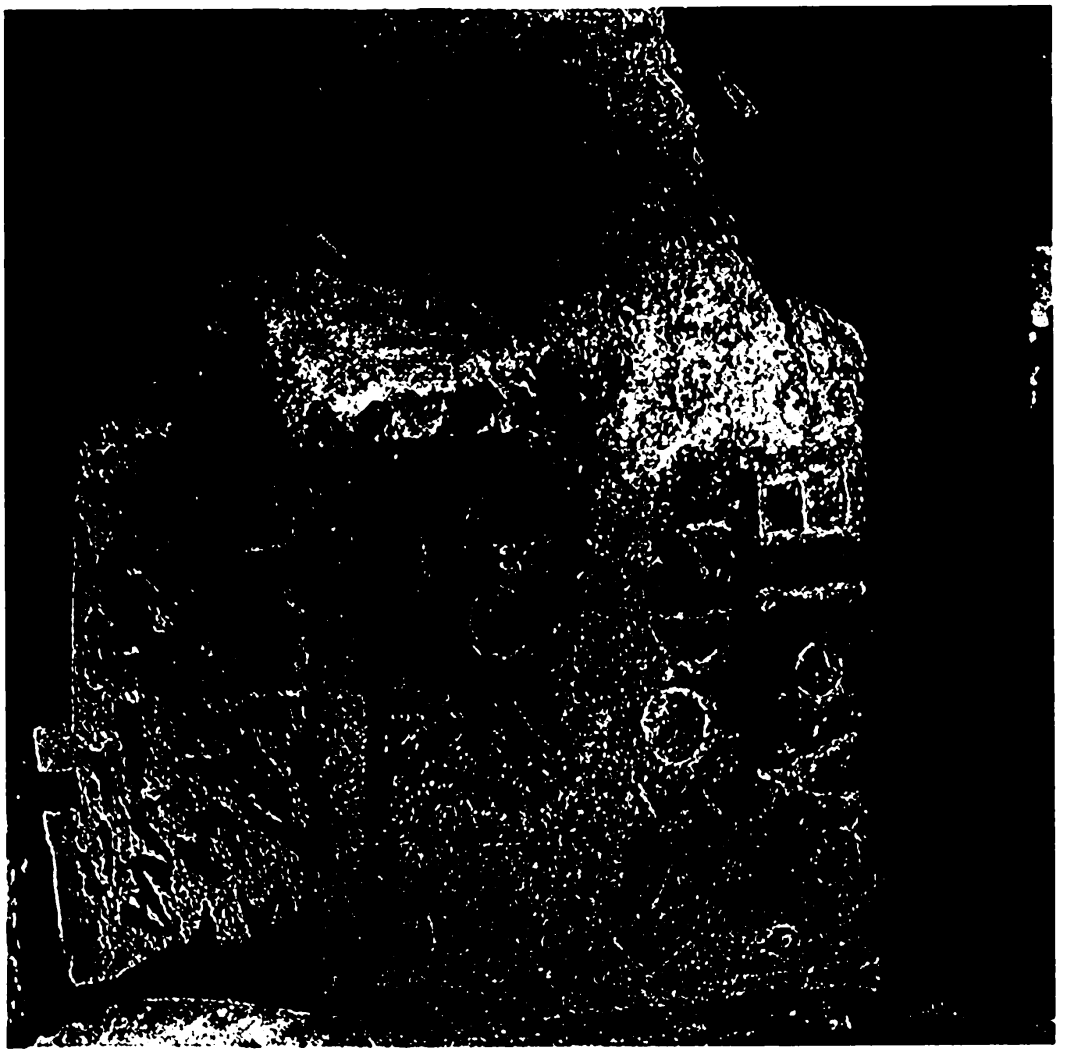

Plate 20. Latin: Forum Romanum cippus

1. QVOIHO [.]...
2. ...]ṢAKROSES
3. EDSOR[.][...
4. ....][..]A[..]AS
5. RECEII(Ç) (*or* Ọ)[...
6. ...]EVAM
7. QVOS:RE[...
8. ...]MKALATO
9. REM:HAB[...
10. ...]ṬOD:IOVXMEN
11. TA:KAPIA:DOTAV[...
12. M:ITE:R[..][...

13. AHIOVQ:M[...
14. VELOD:NEQV[...
15. ...][.]ODIOVESTOD
16. LOI̯QVIOD[QO][...

Discussion: (Numbers in parentheses refer to lines.) Partly because word divisions are very difficult to determine, this inscription is largely uninterpretable except for a few items. Certain are SAKROS (*sacer*) 'sacred' (2) and ESED (*esset*) 'was' (subj.) (2–3); an old dat. sg. RECEI (*rēgī*) 'king' (5); KALATOREM (*calātōrem*) 'crier, priest's attendant' (derived from *calō* 'proclaim', with cognates in Umbrian (*carsitu*, **kařetu**, **kařitu**) and Greek (καλήτωρ) (8–9); and IOVXMENTA (*iūmenta*) 'beasts of burden' (10–11). There is less agreement on QVOI (1) (*quī*?), SOR[.][... (3), which may reflect *sord-* and be interpreted as the first part of *sodālēs* 'members of a fraternity'. This is an unlikely reading, however, since there would be no reason for the *-r-* to drop. Perhaps SOR[.][... reflects the *o*-grade of *serm-*, the first part of the root seen in *sermō* 'speech', indicating a putative form **sormōn-*; and IOVESTOD, which is most likely equivalent to *iūstō* 'right' (15), though it may go with LOI̯QVIOD in the last line; KAPIA (11) may reflect later Latin *capiat* 'let X take'. Finally, LOI̯QVIOD (16) has been interpreted as reflecting Lat. *lūcus* 'grove', in an adjectival form. It has also been suggested that LOI̯QVIOD might be connected with *ēloquium* 'eloquence', with *liquidus* 'clear' (in the sense of a clear (favorable) augury), or is perhaps to be collocated with IOVESTOD to mean something like 'a just weaving', an unlikely and otherwise unknown concept.

5.1.5. The Lapis Satricanus

The Lapis Satricanus is a two-line example of archaic Latin which dates to the period just before 500 B.C.E. (plate 21). It was discovered in the fall of 1977 during an archaeological investigation at the ancient city of Satricum, about 60 km to the south and slightly to the east of Rome. The inscription is incised on stones that formed part of the substructure of the temple of Mater Matuta which had been covered over by growth and debris. For the archaeology see Stibbe (1980) and Holloway (1994: 142–155). Though there is debate about the essential Latin character of the inscription, with some scholars seeing Oscan, Faliscan, or Volscian features, especially in the genitive *-osio* (Coleman 1986: 120–122), its essentially Latin character seems as secure as the alternatives. Translations of the inscription generally agree on the division and meaning of all the words beginning with POPLIOSIO.

CIL 1^2.2832a; Stibbe et al. (1980), Prosdocimi (1984a), Wachter (1987: 75–80), Lejeune (1989).

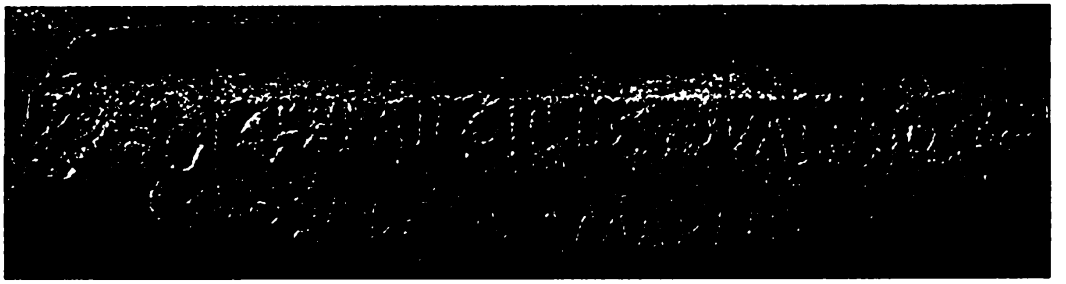

Plate 21. Latin: Lapis Satricanus

IEISTETERAIPOPLIOSIOVALESIOSIO | SVODALESMAMARTEI

With secure word-divisions:

IEISTETERAI POPLIOSIO VALESIOSIO SVODALES MAMARTEI

Discussion: Several plausible readings of this inscription have been offered. The following one reads STETERAI as a verb.

'The companions of Publius Valerius have erected [this] to Mars.'

By this analysis, IEISTETERAI 'they have erected' should be segmented as IEI STETERAI and may parallel CLat. *eī stetērunt*, with IEI a pronoun linked to SVODALES, and STETERAI the 3rd pl. of CLat. *sistō* (De Simone 1980). However, if IEI is an anaphoric pronoun equivalent to CLat. *eī*, its use in an inscription would be quite unusual. An alternative reading (Campanile 1985), which maintains STETERAI as a verb, treats the form IEI as the last part of a word which has been partially destroyed on the stone, perhaps [SAL]IEI = [*Sal*]*iī* 'The Salic (priesthood or fraternity)', suggesting the following representation.

SAL]IEI STETERAI POPLIOSIO VALESIOSIO SVODALES MAMARTEI

'Members of the Salic fraternity of Publius Valerius have erected [this] to Mars.'

STETERAI is also troublesome; if a 3rd perf. pl., it should represent the Latin perfect ending *-ēre*. But the final *-erai* of STETERAI would correspond to a later Latin **-ērī*, suggesting that some other development has taken place here. Silvestri (1993: 109–112) suggests that STETERAI is in fact not a verb at all but a substantive in the dative reflecting Lat. *Stator* 'the one who sustains, supporter', referring to *Māter Mātūta*. This reading leaves the inscription without a verb. Apart from the troublesome IEISTETERAI, there are several matters of linguistic interest in this inscrip-

tion, namely the old genitives in *-osio* in POPLIOSIO and VALESIOSIO; the unrhotacized *s*'s in the same two words; and the dative ending *-ei* in the reduplicated theonym MAMARTEI. The form SVODALES 'members of a fraternity' is particularly interesting. The traditional etymology of this word (CLat. *sodālis*) has derived it from a putative **suodālis*, which according to established sound laws would yield *sodālis*. The PIE background of the word is **sue-d^h(e)h$_1$-* 'own established usage, custom'. The SV- of the Lapis Satricanus confirms the traditional etymology achieved by comparative and internal analysis (Watkins 1989: 786–789).

5.1.6. Epitaph from the Scipionic sarcophagus

From Rome, ca. third century B.C.E. (plate 22). This elogium to the consul Cornelius Lucius Scipio Barbatus is preceded by an erasure which may have been part of an earlier text, though there are some indications that the erasure was part of the elogium itself (Wachter 1987).

CIL 1^2.6, 7; Pisani (1960: 12, A 7); Gordon (1983: 80–82); Wachter (1987: 301; 333–342).

CORNELIVS LVCIVS SCIPIO BARBATVS [-] GNAIVOD PATRE | PROGNATVS FORTIS VIR SAPIENSQVE — QVOIVS FORMA VIRTVTEI PARISVMA | FVIT — CONSOL CENSOR AIDILIS QVEI FVIT APVD VOS — TAVRASIA⟨M⟩, CISAVNA⟨M⟩ | SAMNIO CAPIT — SVBIGIT OMNE⟨M⟩ LOVCANAM OPSIDESQVE ABDOVCIT

'Lucius Cornelius Scipio Barbatus, son of Gnaeus, a brave man and prudent, whose looks were fully equal to his valor; he was aedile, consul, (and) censor among you; he took Taurasia (and) Cisauna in (or from) Samnium (or: he took Taurasia, Cisauna (and all) Samnium); he subdues all Lucania and takes away hostages.'

Discussion: Noteworthy in this specimen are the older ablative in GNAIVOD (*Gnaevō̆*); the preservation of *q* in QVOIVS (*cuius*) 'whose'; the older dative *-ei* in VIRTVTEI (*virtūtī*) 'to valor'; the form of PARISVMA (*parissima*) 'most equal', with single *s*, and *u*, which is often confused with *i* in certain environments; CONSOL (*cōnsul*) 'consul' shows *o* for *u* in the final syllable; OPSIDES (*obsidēs*) 'hostages', which indicates the assimilatory effect of *s* on *b*; AIDILIS (*aedīlis*) 'aedile', which shows the earlier form (*ai*) of the diphthong *ae*; and finally QVEI (*quī*) 'who', LOVCANOM (*Lūcānum*), and ABDOVCIT (*abdūcit*) 'takes away', which show diphthongal forms that were later monophthongized.

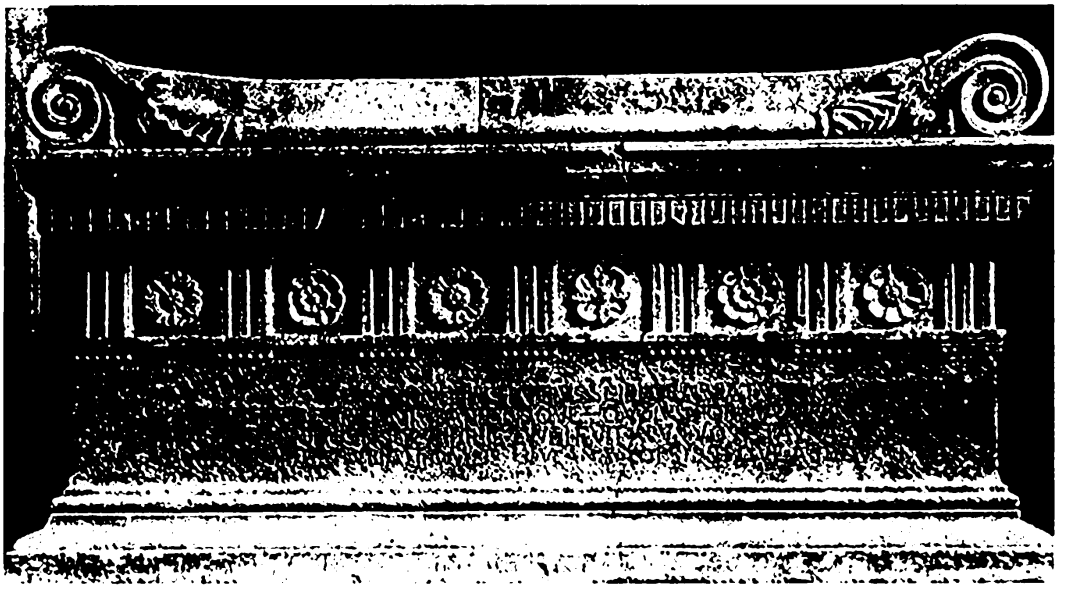

Plate 22. Latin: Epitaph from the Scipionic sarcophagus

5.1.7. Dedication to Hercules by M. Minucius

Found in the Campo Verano, Rome, in 1862, this inscription is cut onto what was apparently a statue base and is datable to 217 B.C.E. (plate 23). Like Castor and Pollux, the legendary hero Hercules is remembered in an interjection, *hercule*, *mehercule*, etc. 'by Hercules'.

CIL 1^2.607; Pisani (1960: 15, A 18 *bis*); Gordon (1983: 82); Wachter (1987: 277, 286).

L.I.XXVI HERCOLEI | SACROM: | M.MINVCI.C F | DICTATOR VOV | IT

'To Hercules, it is sacred. Marcus Minucius, son of Gaius, dictator, vowed (it).'

Discussion: Several noteworthy features of this inscription are the old *o* (for *u*) and dat. ending *-ei* (for *-ī*) in HERCOLEI, both of which are typical for this date, which contrasts with the neut. ending *-om* (for *-um*) seen in SACROM, which may be archaizing. The form MINVCI to represent a nominative is an abbreviation for *Minucius*.

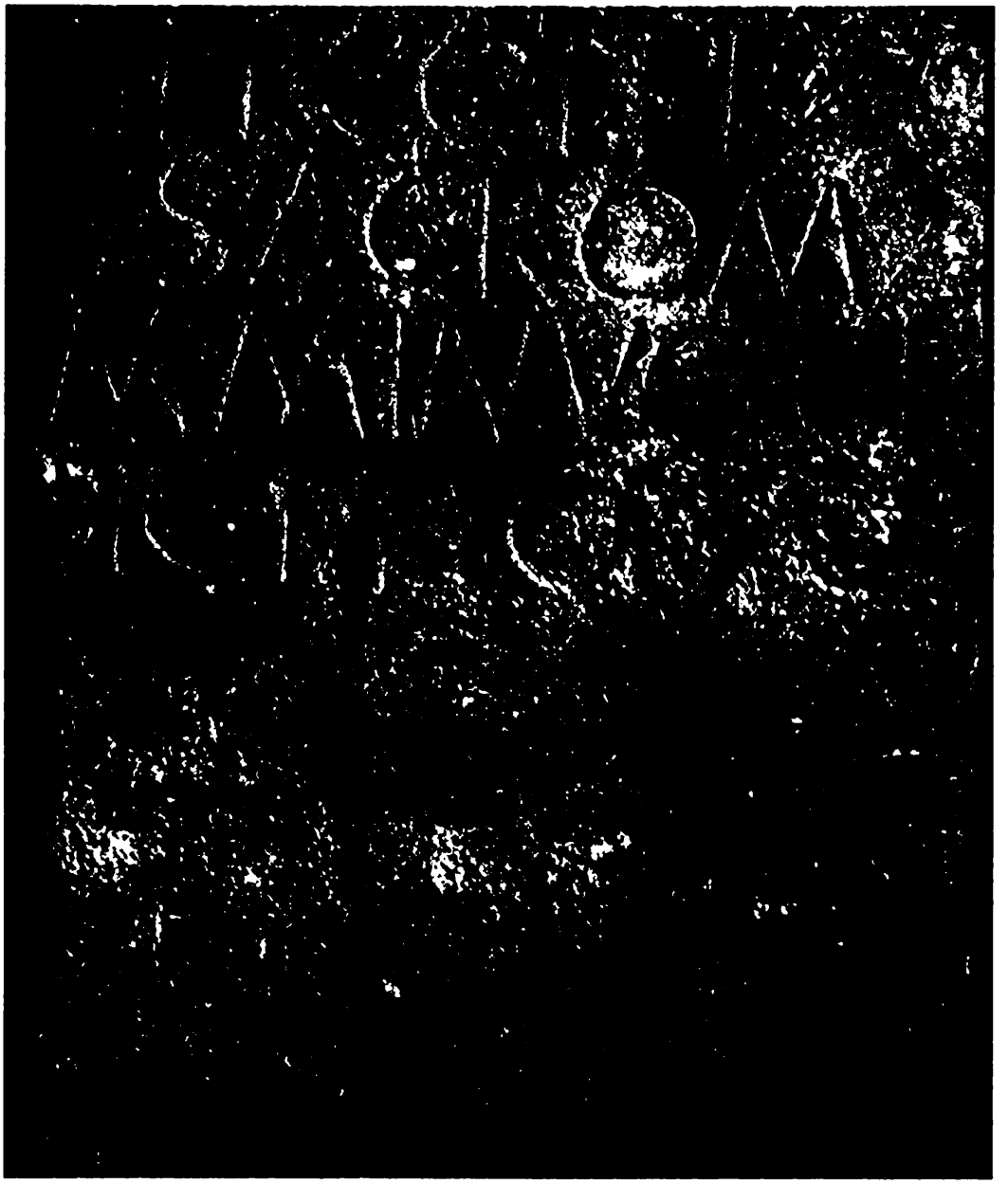

Plate 23. Latin: Dedication to Hercules

5.1.8. The Senatus Consultum de Bacchanalibus

Discovered in 1640 in southern Italy, this inscribed bronze tablet has been dated to 186 B.C.E. and is the oldest specimen of non-literary Latin of any length (plate 24).

CIL 1^2.581; Warmington (1940: 254–259); Pisani (1960: 21–24, A 29); Gor-

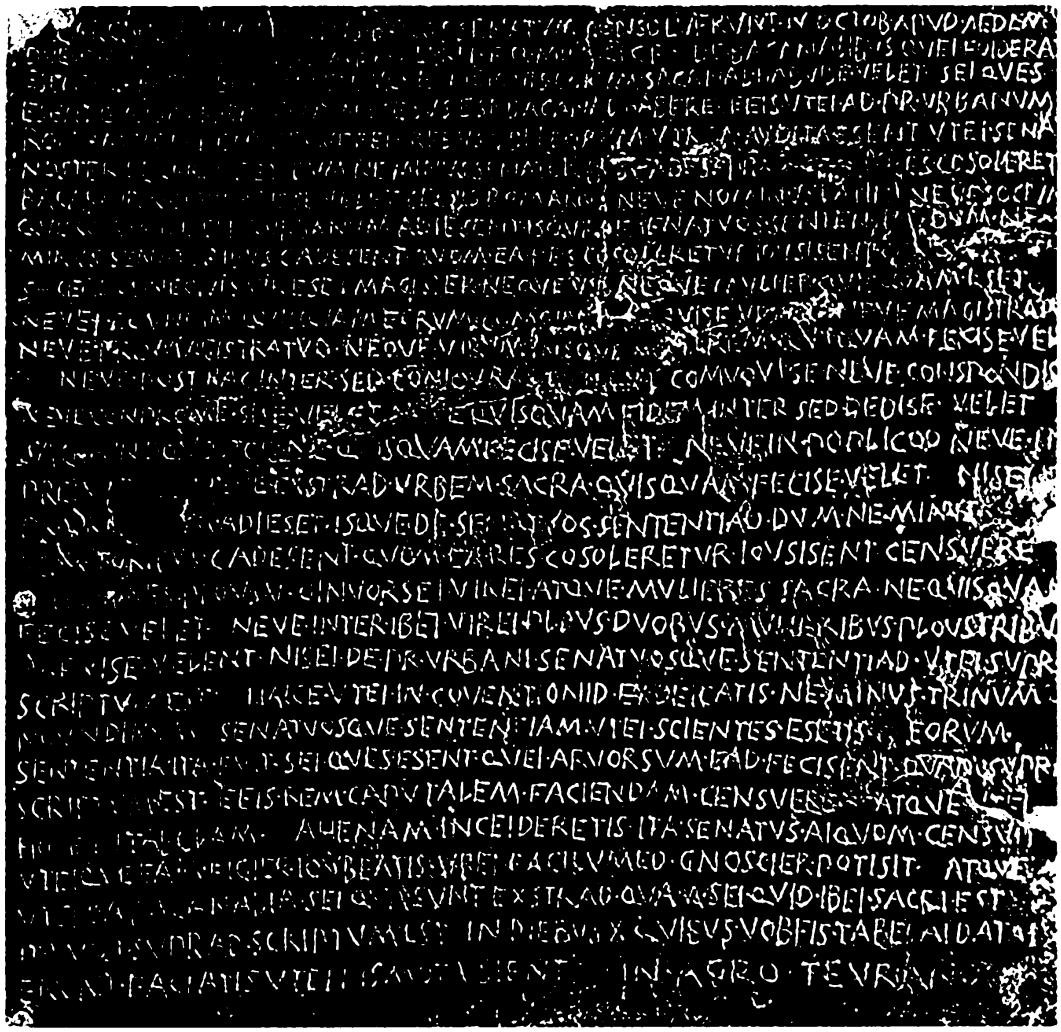

Plate 24. Latin: Senatus Consultum de Bacchanalibus

don (1983: 83–85); Wachter (1987: 289–298). Text based on Gordon. Numbers in parentheses refer to lines.

(1) [Q(VINTVS)] MARCIVS L(VCI) F(ILIVS), SPVRIVS POSTVMIVS L. F., CO(N)S(VLES), SENATVM CONSOLVERVNT N(ONIS) OCTOB(RIBVS) APVD AEDEM (2) DVELONAI. SC(RIBENDO) ARF(VERVNT) M(ARCVS) CLAVDI(VS) M(ARCI) F., L(VCIVS) VALERI(VS) P(VBLI) F., Q. MINVCI(VS) G(AI) F. DE BACANALIBVS, QVEI FOIDERATEI (3) ESENT, ITA EXDEICENDVM CENSVERE: NEIQVIS EORVM SACANAL HABVISE VELET; SEI QVES (4) ESENT QVEI SIBEI DEICERENT NECESVS ESE BACANAL HABERE, EEIS VTEI AD PR(AETOREM) VRBANVM (5) ROMAM VENIRENT DEQVE EEIS REBVS, VBEI

EORVM VTRA AVDITA ESENT, VTEI SENATVS (6) NOSTER DECERNERET, DVM NE MINVS SENATOR<I>BVS C(ENTVM) ADESENT [QVOM E]A RES COSOLERETVR. (7) BACAS VIR NEQVIS ADIESE VELET CEIVIS ROMANVS NEVE NOMINVS LATINI NEVE SOCIVM (8) QVISQVAM NISEI PR. VRBANVM ADIESENT ISQVE DE SENATVOS SENTENTIAD DVM NE (9) MINVS SENATORIBVS C ADESENT QVOM EA RES COSOLERETVR IOVSISENT. CENSVERE. (10) SACERDOS NEQVIS VIR ESET; MAGISTER NEQVE VIR NEQVE MVLIER QVISQVAM ESET (11) NEVE PECVNIAM QVISQVAM EORVM COMOINEM [H]ABVISE VELET NEVE MAGISTRATVM (12) NEVE PRO MAGISTRATVO NEQVE VIRVM [NEQVE MVL]IEREM QVIQVAM FECISE VELET; (13) NEVE POSTHAC INTER SED CONIOVRA[SE NEV]E COMVOVISE NEVE CONSPONDISE (14) NEVE CONPROME SISE VELET NEVE QVISQVAM FIDEM INTER SED DEDISE VELET. (15) SACRA IN DQVOLTOD NE QVISQVAM FECISE VELET; NEVE IN POPLICOD NEVE IN (16) PREIVATOD NEVE EXSTRAD VRBEM SACRA QVISQVAM FECISE VELET NISEI (17) PR. VRBANVM ADIESET ISQVE DE SENATVOS SENTENTIAD DVM NE MINVS (18) SENATORIBVS C ADESENT QVOM EA RES COSOLERETVR IOVSISENT. CENSVERE. (19) HOMINES PLOVS V OINVORSEI VIREI ATQVE MVLIERES SACRA NE QVISQVAM (20) FECISE VELET NEVE INTER IBEI VIREI PLOVS DVOBVS MVLIERIBVS PLOVS TRIBVS (21) ARFVISE VELENT NISEI DE PR(AETORIS) VRBANI SENATVOSQVE SENTENTIAD VTEI SVPRAD (22) SCRIPTVM EST. HAICE VTEI IN COVENTIONID EXDEICATIS NE MINVS TRINVM (23) NOVNDINVM SENATVOSQVE SENTENTIAM VTEI SCIENTES ESETIS, EORVM (24) SENTENTIA ITA FVIT. SEI QVES ESENT QVEI ARVORSVM EAD FECISENT QVAM SVPRAD (25) SCRIPTVM EST, EEIS REM CAPVTALEM FACIENDAM CENSVERE; ATQVE VTEI (26) HOCE IN TABOLAM AHENAM INCEIDERETIS, ITA SENATVS AEQVOM CENSVIT, (27) VTEIQVE EAM FIGIER IOVBEATIS VBEI FACILVMED GNOSCIER POTISIT; ATQVE (28) VTEI EA BACANALIA SEI QVA SVNT EXSTRAD QVAM SEI QVID IBEI SACRI EST, (29) ITA VTEI SVPRAD SCRIPTVM EST, IN DIEBVS X QVIBVS VOBEIS TABELAI DATAI (30) ERVNT FACIATIS VTEI DISMOTA SIENT. IN AGRO TEVRANO.

'The consuls Q. Marcius, son of Lucius and S. Postumius, son of Lucius consulted the Senate on October 7 [186 B.C.E.] in the Temple of Bellona. Present at the writing (of the decree) were M. Claudius, son of Marcus, L. Valerius, son of Publius, and Q. Minucius, son of Gaius. With reference to

the Bacchic cult they passed a decree that the following proclamation should be issued to those allied (with the Romans) by treaty: let none of them have it in mind to have a place for Bacchic worship. If there are any who say that they must maintain a place of Bacchic worship, they should come to Rome to the urban praetor, and when their words have been heard, our Senate shall make a decision about these matters, as long as no less than 100 senators are present when this matter is deliberated. Let no Roman citizen or anyone of the Latin name [i.e. those enjoying *iūs Latī*, a restricted form of citizenship] or any of the allies, have a mind to attend a meeting of Bacchic women unless they go to the urban praetor and with the approval of the Senate they (he) give permission, provided that no less than 100 senators are present when this matter is deliberated. They so voted.

'Let no man be a priest. Let neither man nor woman be a master; nor let any of them have a mind to keep common money; nor let anyone have a mind to make either a man or a woman a master or a vice- master, nor to have a mind henceforth to exchange oaths or vows or pledges or promises with one another; nor to have a mind to swear solemn faith with one another. Let no one have a mind to perform ceremonies in secret, nor let anyone have a mind to perform ceremonies, whether in public or in private or outside the city, unless he goes to the urban praetor and he gives permission in accordance with the will of the Senate, as long as no less than 100 senators are present when this matter is deliberated. They so voted.

'Let no one have a mind to hold services in a group larger than five persons, men and women together, and let no more than two men and three women have a mind to be present there among (them), except by authorization of the urban praetor and the senate, as is written above.

'It was their decree that you proclaim this at a public meeting for a period of not less than three market days and be cognizant of the Senate's decree. If there were any who acted contrary to what is written above, they decreed that a capital charge be made against them. And the Senate considered it proper that you have this engraved on a bronze tablet, and that you order it to be attached where it can most easily become known; and that those places of Bacchic worship, if there are any, unless there is something sacred (there), just as is written above, should be removed within ten days of the delivery of this letter. In the Ager Teuranus.'

Discussion: (Line numbers in parentheses.) The *SC de Bacch.* contains a large number of phonological and morphological features which heighten its linguistic importance, and a few lexical and syntactic ones. In the lexicon, for example, *velle* 'to wish' seen in NEIQVIS VELET (3–4) marks a legal injunction, here translated as

'have a mind to'. Likewise the forms CENSVERE (3, 9, 18, 25) and CENSVIT (26) 'decreed' announce a legal formula indicating an official vote. One interesting syntactic feature is the use of the perfect infinitive instead of the present after the injunctive e.g. in NEQVIS ... HABVISE VELET (3) or NEQVIS ... ADIESE ... VELET (7), indicating legal finality.

On the phonological side, there is the general retention of older diphthongs throughout the text (cf. QVEI for *quī* (2, 4, 24), VTEI for *utī* (4, 5, 21, 22, 23, 25, 28, 29, 30), EXDEICENDVM for *exdīcendum* (3), SIBEI for *sibī* (4), VBEI for *ubī* (5, 27), VIREI for *virī* (19, 20), IBEI for *ibī* (20, 28), CEIVIS for *cīvis* (7), NISEI for *nisī* (8, 16, 21), OINVORSEI for *ūniversī* (19), etc., all with *ei* for later *ī*; VTEI (*utī*) is troublesome in that there is no convincing explanation for the long final (cf. *utinam*); also unpredicted here is the form of OINVORSEI, for which **oinovorsei* would be consistent with the classical form *ūniversī*. Parallel to the retention of *ei* is the preservation of OLat. *oi* for later *ū* in COMOINEM for *commūnem* (11) and OINVORSEI (19). Note however NEVE, not NEIVE (7, 11, 12, 13, 14, 15, 16, 20), as well as NEQVIS (7, 10) alongside NEIQVIS (3). Similar are COMVOVISE for *commōvisse* (13), CONIOVRASE for *coniūrāsse* (13), with *ou* for later *ū*. The diphthongs in PLOVS for *plūs* (20) and IOVBEATIS for *iubeātis* (27) cause some difficulty. Forms cognate to *plūs* are PLEORES in the Carmen Arvale, *pleorēs* in Cicero, and the epigraphically attested superlative forms PLOIRVME and PLOVRMA, suggesting PItal. **plēiōs* (< PIE **pleh$_1$-iōs*), and making the OV exceptional. As for IOVBEATIS, all the evidence from the later language suggests *u*, not *ū* in *iubeō*. ADIESE (7) contains an *e* which seems to result from a dissimilation of *-ii-* in a putative **adiisse*.

The *SC de Bacch.* is consistent in its representation of single consonants where double consonants are found elsewhere. The practice of writing double consonants in Latin is first attested in the decree of Paulus Aemilius (189 B.C.E.), and it was slow to be adopted (Niedermann 1953: 112). Cf. ESET for *esset* (10), ESENT for *essent* (3, 4, 5, 24), also in ADESENT for *adessent* (6, 9, 18); HABVISE for *habuisse* (3), FECISE for *fēcisse* (12, 15, 16, 20, 24), DEDISE for *dedisse* (14), COMVOVISE for *commōvisse* (13), NECESVS for *necessus* (4), TABELAI for *tabellae* (29), and even the forms BACANAL (4), BACANALIA (28), BACANALIBVS (2) where *-cc-* or *-cch-* is expected. The forms COS for *cōnsol* (1) and COSOLERETVR for *cōnsolerētur* (18) show loss of *n* before *s*, at least in the spelling, perhaps indicating that the vowel preceding the etymological nasal was nasalized (but note CONSPONDISE (13), CENSVERE (3, 9, 18, 25), and CONSOLVERVNT). Additionally, COSOLERETVR preserves older *o*, a common feature in older inscriptions, evidenced also in QVOM for *cum* (6, 9, 18), AEQVOM for *aequum* (26), and TABOLAM for *tabulam* (26). Other vocalic archaisms are the *u* for *i* in CAPVTALEM for *capitālem* (25) and FACILVMED for *facillimē* (27).

Note *du-* for *b-* in DVELONAI for CLat. *Bellōna* (2); cf. DVENOS for *bonus*,

and the parallel archaic *qu* for later *c* in QVOM (*cum*). Also, *r* (a flapped or tapped *r*) is substituted for etymological *d* in ARF(VERVNT) for *adfuērunt* (2), ARFVISE for *adfuisse* (21) and ARVORSVM for *adversum* (24).

On the morphological side, the *SC de Bacch.* presents a number of forms which are either typical of the older language or are unique transformations of existing categories. The older genitive ending in *-ai* (later *-ae*) is seen in DVELONAI for *Bellōnae* (2), TABELAI for *tabellae* (29), and DATAI for *datae* (29). Final *-d* to mark the ablative is preserved in a number of forms in this inscription; cf. SENTENTIAD for *sententiā* (8, 17, 21), POPLICOD for *pūblicō* (15), PREIVATOD for *prīvātō* (16), COVENTIONID for *conventiōne* (with some contamination from the *i*-declension (22)), SVPRAD for *suprā* (21, 24, 29), EXSTRAD for *extrā* (16, 28), EAD for *eā* (24); FACILVMED for *facillimē* (27) is actually a false archaism, since it is an adverbial superlative and would not have inherited the final *-d*. QVES for *quī* (3, 24) shows some contamination from the interrogative/indefinite pronoun *quis* with an analogical attachment of *-s*; a similar process may be at work in EEIS for *eī* (4, 5, 25), with influence from the nominal declensions with *-s* in the nom. pl. The gen. sg. form NOMINVS occurs for the expected *nōminis* (7), a relatively common substitution seen in inscriptional DIOVOS for *Iovis* and CAESARVS for *Caesaris*. The form HAICE for *haec(e)* (22) may reflect the attachment of two deictic particles to the neut. pl. pronoun *ha* (viz. *ha-i-ce*), obscured in the later language by the normal passage of *-ai* to *-ae*. Another noteworthy feature of morphology is the presence of the OLat. passive infinitive in *-ier* seen in GNOSCIER for *gnōscī* (27) and FIGIER for *fīgī* (27), which is apparently formed through an analogical extension of the characteristic *-r* passive marker to the present infinitive. Note also SIENT for *sint* (30) with *ie*, and the form POTISIT for *possit* (27) in its etymological form as *potis sit*.

5.1.9. The Carmen Arvale

The Carmen Arvale is a processional hymn of the *Frātrēs Arvālēs* 'Arval Brothers', an ancient priesthood said to have been founded by Romulus. The brotherhood was revived by Augustus and was known to be in existence as late as 218 C.E. (Rose 1949: 4). All that has survived of the Carmen Arvale is a late copy, apparently executed in Rome by a stonecutter who had no idea what he was carving, making the date of the inscription uncertain. Because of the apparent blunders and uncertain letters in the text, this material is very difficult to read and interpret, though it seems clear that the hymn celebrates the rustic origins of the city of the Romans, calling on Mars (Marmor) to protect them from destruction, a theme which can also be recovered from the Iguvine Tables of Umbrian. Interpretations of the hymn vary widely, partly because of uncertainty over word divisions. The text of the Carmen Arvale begins at the sixth line from the bottom of plate 25.

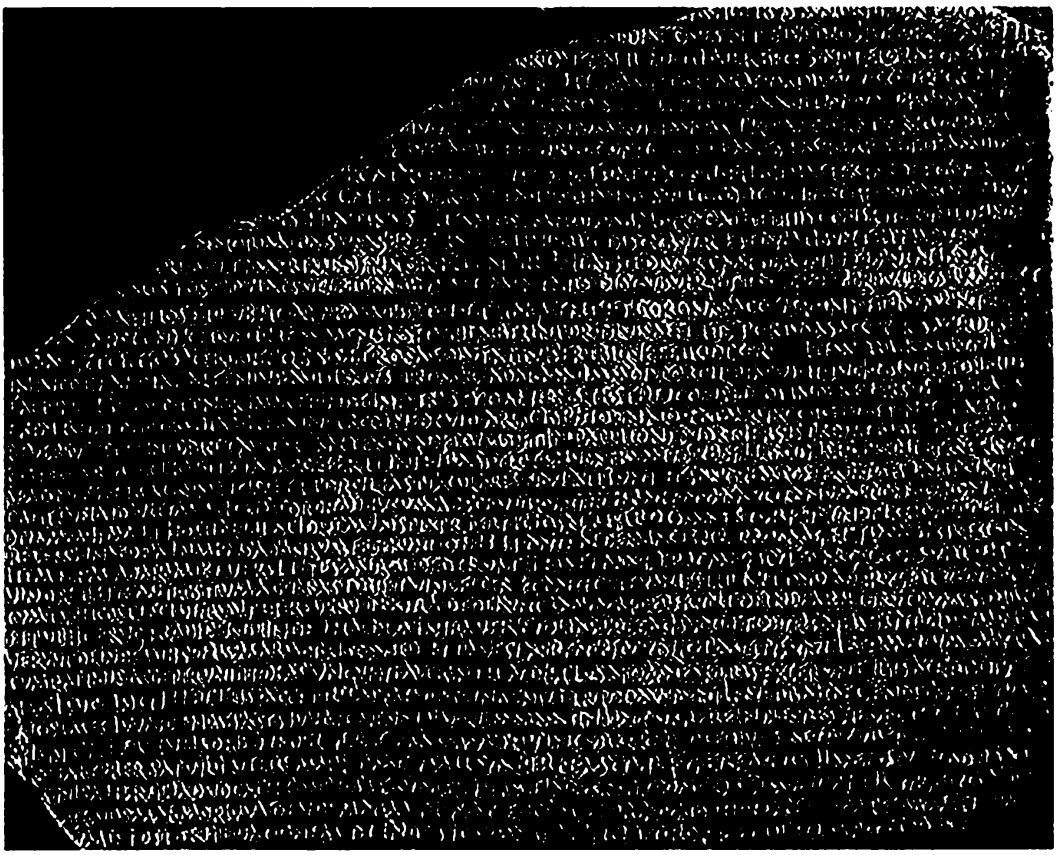

Plate 25. Latin: Carmen Arvale

CIL 6.2104; Warmington (1940: 250–253); Pisani (1964: 2–5, A 2); Gordon (1983: 160–161). For extended discussion of the meaning see Norden (1939) and Dumézil (1970: 228–229). Text from Gordon.

E NOS, LAṢES, IVVATE, I
[E] NOS, LASES, IVVATE, E NOS, L̥ASES, IVVATE; NEVE LVAE RVE, MARMA(R), SINS INCVRRERE IN P̣LEORES, NEVE LVE R̥VE, MARMAR, I
[S]IṆS INCVRRERE IN PLEORIS, NEVE LVE RVE, MARMAR, SERṢ (or SERP̣) INCVRRERE IN PLEORIṢ; SATVR FV, RERE (for FERE) MARṢ, LIMEN I
[SA]LE STA BERBER, SATVR FV, FERE MARS, LIMEN SALL (for SALI) STA BERBER̥, SAṬVR FV, FERE M̥ARS, LIMEN ṢNI (for SALI) STA BE̥R̥BER; I
[SEM]VNIS ALTERNEI ADVOCAPIT CONCTOS, SEMVNIS ALTERNEI ADVOCAP̣IT CONCTOS, SIMVNIS AL̥TE̥RN̥EI A̤DVOCAP̣IT I

[CONCT]OS; E NOS, MARMOR, IVVATO, E NOS MARMOR, IVVATO, E NOS, MA[R]MOR, IVVATO; TRIVMPE, TRIVMPE, TRIVMPE TRIVM[PE TRI]VMPE

Norden's (1939) rendition, partly emended, follows.

'Hail, aid us Lares (three times)
Do not allow pestilence or catastrophe to afflict the people.
Be satisfied, savage Mars, jump the threshold and stop.
Call in turn all the Semones.
Hail, Mars, aid us;
Triumpe.'

Discussion: The E 'hail' in the formula E NOS LASES IVVATE is an old interjection also found in the formula *edepol* 'by Pollux'; LASES (*Larēs*) 'household gods' shows earlier unrhotacized *-s-*; SINS is probably equivalent to CLat. *sinās* 'you may allow', though it is possible that this form represents a stonecutter's blunder; PLEORES and PLEORIS 'people, multitude' are equivalent to comparative *plūrēs* 'more'; FV is an imperative form of *esse* < **b*^{h}*uH-* 'be', which has no corresponding classical form; BERBER may be a reduplication of some stem—further analysis is purely speculative (Pisani 1964: 4–5 reviews some of the possibilities). Alternatively, the division may be TABERBER, with the first part of the word related to *tābēs* 'a wasting away'. Under this interpretation TABERBER might mean something like 'war'; ALTERNEI 'by turns' appears to be an old locative form; and ADVOCAPIT appears to be the reduction of a 2nd pl. imperative, viz. **advocapite*.

5.1.10. Epitaph from Rome

On a tombstone in Rome, late second century B.C.E. This appears to be a highly stylized text, with formal elements common to epitaphs.

CIL 1^{2}.1206; Pulgram (1978: 204, L 22).

FVIT ATISTIA VXOR MIHEI | FEMINA OPITVMA VEIXSIT | QVOIVS CORPORIS RELIQVAE | QVOD SVPERANT SVNT | IN HOC PANARIO

'Atistia was my wife. She lived a very good woman. Of whose body the remains that are left are in this breadbasket.'

Discussion: Note the old dat. sg. MIHEI (*mihī*), and diphthongal *ei* in VEIXSIT (*vīxit*). However, the use of these diphthongs may represent hypercorrection, not

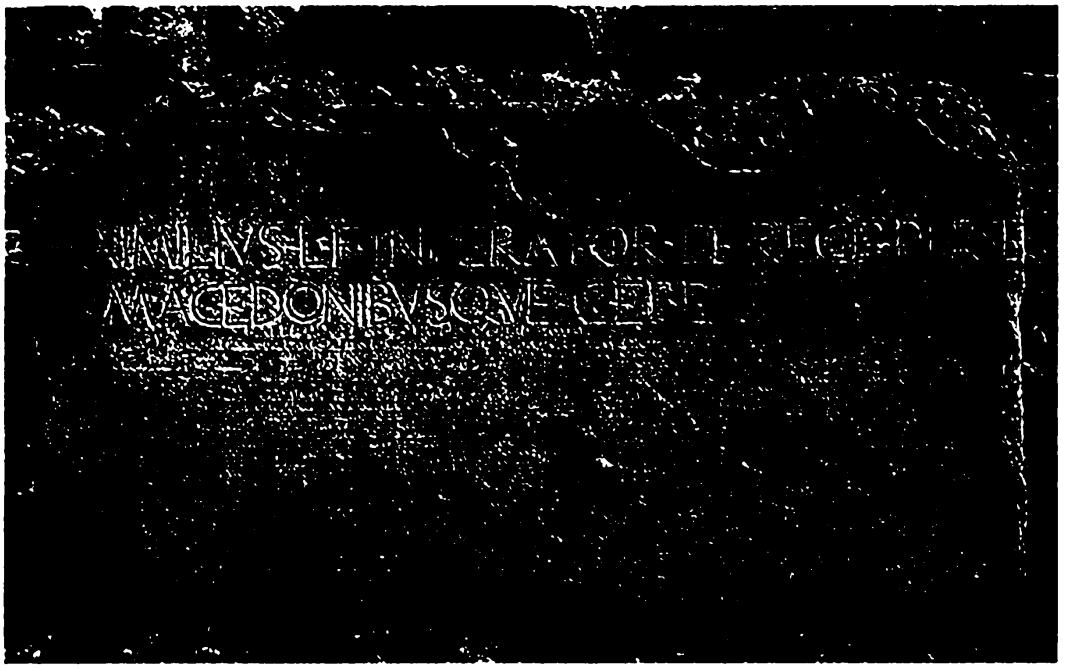

Plate 26. Latin: Commemorative tablet to L. Aemilius Paulus

archaism. The same is true of the *xs* in VEIXSIT (cf. EXSTRAD in the Duenos inscription above), an apparent attempt to segment the word as if *veiks-sit*. The use of QVOD as a relative violates concord rules, which demand *quae*, but this foreshadows future developments of *quod* into the all-purpose Romance complementizer found in Fr. *que*, It. *che*, etc. OLat. OPITVMA 'very good', *optima* in the later language, is an isolated form. It is most likely built on the non-attested form **opiō* 'choose' (which was replaced by the frequentative *optō*). QVOIVS is the ancestor of CLat. *cuius*, faithfully reflecting the stem **o-* with preserved *qu*.

5.1.11. Commemorative tablet to L. Aemilius Paulus

This short inscription commemorating L. Aemilius Paulus was found at Delphi in 1893 (plate 26). It is cut on a tablet thought to have been part of the marble base of a monument pillar and has been dated to about 167 B.C.E.

CIL 1^2.622; Gordon (1983: 85–86); Wachter (1987: 280, 286).

L•AIMILIVS•L•F•INPERATOR•DE•REGE•PERSE |
MACEDONIBVSQVE•CEPET

'Lucius Aemilius, son of Lucius, Imperator, took (this trophy, or spoils of war) from King Perseus and the Macedonians.'

Discussion: Interesting indicators of the older language are the diphthong *ai* in AIMILIVS (later *ae*); the *n* in INPERATOR (for *m*), which probably indicates that preconsonantal nasals were lightly articulated, leaving nasalization on the preceding vowel; and the *e* in the second syllable of CEPET (for *i*).

5.1.12. Dedicatory inscription from Aeclanum

From Aeclanum, in the mountains far from Rome, ca. 90 B.C.E. This inscription has several features characteristic of the older language.

CIL 1^2.1722; Pulgram (1978: 210–211, L 28).

> C QVINCTIVS C F VALG PATRON MVNIC I M MAGI MIN F SVRVS
> A PATLACIVS Q F I IIIIVIR D S S PORTAS TVRREIS MOIROS I
> TVRREISQVE AEQVAS QVM MOIRO I FACIVNDVM
> COIRAVERVNT
>
> 'Gaius Quinctius Valg(anus), son of Gaius, municipal advocate, Marcus Magi(?) Surus, son of Min(?), Aulus Patlacius, son of Quintus, quattuorviri (members of a four-man board) upon order by the senate saw to the building of gates, towers, walls, and towers level with the walls.'

Discussion: Note the archaic diphthongs in MOIRO (*mūrō*), MOIROS (*mūrōs*), and COIRAVERVNT (*cūrāvērunt*); the spelling of *cum* with *q* in QVM; the lack of agreement in PORTAS, TVRREIS, MOIROS with the singular neuter gerundive FACIVNDVM. More formal Latin probably would have preferred a neuter plural (*faciunda*). The neut. sg. form FACIVNDVM may be a sort of syntactic default form which is used to avoid the problem of mixed concord. Alternatively, it could be that FACIVNDVM is a gerund, the direct object of COIRAVERVNT, and that PORTAS, TVRREIS, and MOIROS are direct objects of FACIVNDVM.

5.1.13. The Puteolan funerary tablets

The Puteolan tablets (from Puteoli, modern Pozzuoli, in the vicinity of Pompeii and Herculaneum) give a sample of what might be called "Business Latin". Though variously dated, they seem to be from the first half of the first century B.C.E. (Bodel 1994). These tablets provide instructions and regulations for those involved in the funerary trade. Originally inscribed in several columns over one or more large marble slabs, the text survives in three continuous fragments of a single slab. Reproduced here are lines 22–23 of column 2. This excerpt is chosen for its deliberate use of archaic features. Because the subject matter concerns the removal of the remains

of suicides and dead slaves, it has been suggested that it has perhaps been taken over from some earlier funerary law (Bodel 1994: 75). See further Andreau (1974) and Bove (1979, 1984).

> SVSPENDIOSVM CVM DENVNTIATVM ERIT EAD HORAD IS SOLVEND(VM) TOLLENDVM CVRATO, ITEM SERVOM | SERVAMVE SI ANTE H(ORAM) X DIEI DENVNTIAT(VM) ERIT EAD DIE TOLLEND(VM) CVRATO, SI POST X POSTER(A) D(IE) A(NTE) H(ORAM) II.
>
> 'When a suicide by hanging is announced, see to it that the body is released and removed within that hour; likewise, if a suicide is announced of a male or female slave before the tenth hour of the day, see to it that the body is removed on that day; if the announcement is made after the tenth hour, see to it that the body is removed before the second hour on the next day.'

Discussion: The language of these instructions is brief and direct, with a style not unlike that seen in the Law of the Twelve Tables (below). Future imperative forms like CVRATO and a lack of complex sentences are especially noteworthy. Note the use of the archaic ablatives EAD (*eā*), HORAD (*horā*) and the older accusative SERVOM (*servum*).

5.2. Continuous texts

5.2.1. An excerpt from the Law of the Twelve Tables

Sometime during the period 462–449 B.C.E., a series of laws which were said to be based in part on the Athenian laws of Solon was inscribed on bronze tablets and established in the Roman Forum. The twelve tablets were approved as one *Lĕx*, representing a legal code which guided magistrates and judges in their judicial decisions. The original tablets were lost, probably when the Gauls burned Rome in 390 B.C.E., but the fragments in the texts of later Roman authors provide a fair indication of both the content and the language of the Tables, even though it is likely that the spelling and to some degree the morphology of the Tables have been updated in transmission. The style is short and extremely simple, composed mostly of direct imperatives in straightforward colloquial prose.

The following passage, from Table III, concerns debt. The fragment comes from Gel. *N A* 20.1.45. Text from Warmington (1938: 436–439); the rather literal translation attempts to capture the terseness of the legal style.

> *Aeris confessi rebusque iure iudicatis triginta dies iusti sunto. Post deinde*

manus iniectio esto. In ius ducito. Ni iudicatum facit, aut quis endo eo in iure vindicit, secum ducito. Vincito aut nervo aut compedibus. Quindecim pondo ne minore, aut si volet maiore vincito. Si volet suo vivito. Ni suo vivit [qui eum vinctum habebit] libras farris endo dies dato; si volet, plus dato.

'Of debt acknowledged and for matters judged in the court, let 30 days be legitimate. After this time, let there be a laying of the hand. One shall lead him (the debtor) into court. Unless he brings about a judgment, or unless someone makes compensation for him in the court, let (the creditor) lead him away with him. Let (the creditor) bind him with either fetters or shackles. Let (the creditor) bind him with 15 pounds of weight, not less or, if he wants, with more. If he wishes, let (the debtor) live on his own. If he does not wish to live on his own, let the one [who will keep him bound] give him a pound of grain for each day. If he wishes, let him give more.'

Discussion: Note the 3rd future imperatives *suntō*, *estō*, *dūcitō*, *vincitō*, *vīvitō*, *datō* which follow on presents (*facit*, *vindicit*) or futures (*habēbit*, *volet*), and the corresponding lack of complex sentences apart from the relative clause in the last two lines. Mostly, this selection shows a string of independent sentences without subordination. Lexically, the term *diēs iustī* 'legitimate days' refers to the amount of time allowed to pass in paying debts; *endo*, which occurs twice, is an archaic form of *in* 'in' (translated as 'for' in the phrases *endo eō* and *endo diēs*), reinforced with a enclitic *-do*, *-du* as seen in verbal forms such as *indāgō* 'I track, search for', *induō* 'I put on'.

5.3. Literary texts

5.3.1. Cato

Religious formulas, prayers, ritual chants, and other markers of cultural tradition tend to be quite conservative in nature, often not following the normal flow of linguistic change and preserving features of language that have changed in colloquial speech or even in the conservative written medium. The following religious formula quoted in the *De Agricultura* of Cato (234–149 B.C.E.) preserves several interesting lexical and morphological features of archaic Latin. This passage provides a glimpse into early Roman religious practices, with instructions to farmers on the proper form of an offering.

Dapem hoc modo fieri oportet. Iovi dapali culignam vini quantam vis polluceto. Eo die feriae bubus et bubulcis et qui dapem facient. Cum pollucere oportebit, sic facies: 'Iuppiter dapalis, quod tibi fieri oportet in

> *domo familia mea culignam vini dapi, eius rei ergo macte hac illace dape pollucenda esto.' Manus interluito, postea vinum sumito: 'Iuppiter dapalis, macte istace dape pollucenda esto, macte vino inferio esto.'* (*Agr.* 132.1)
>
> 'One needs to make the offering in this way. Offer to Jupiter Dapalis a cup of wine of whatever size you wish. On that day let there be a holiday for the oxen, the plowmen, and for those who make the offering. When the time is right to make the offering, you should do as follows: "Jupiter Dapalis, it is fitting that a cup of wine be offered to you in my home and household for a feast; for that purpose, therefore, be honored by the offering of this food." Wash your hands, then raise the wine (and say): "Jupiter Dapalis, be honored by the feast which has been offered to you, and be honored by the wine placed before you."'

Discussion: *Dapālis* (from *daps* 'feast') is an epithet of Jupiter based on the old Roman custom of spreading an offering of food before the gods; *macte* is a religious word which accompanies prayers or sacrifices. The form *macte* is a vocative, though it was apparently not understood as such by Romans even of Cato's time, and was considered a sort of adverb (see Ernout—Meillet 1967, s.v.). Through a series of popular etymologies, the word passed through a number of semantic stages. First, if it is assumed that the word is related to *magnus* 'great', then *macte* could mean something like 'the strengthened', the implication being that the god was strengthened by the offering. The semantic evolution passes then from the notion of strengthening, to pleasing, and then to honoring, and finally to a general term of approval or congratulation (Bailey 1932: 74, 84). Szemerényi (1989: 29ff.) suggests that *macte* is an ablative of an IE noun **mag^h-ti-s*, **mak-ti-s* which does not survive with its full paradigm in Latin but is preserved in Germanic (cf. Germ. *Macht*, Eng. *might*). A totally different view of the backround of *macte* can be found in Vennemann (1997: 886–887), elaborated in Vennemann (to appear), who argues that this form ultimately reflects a borrowing from Vasconic **mak-ar-* 'blissful', seen perhaps also in Gk. μάκαρ 'blissful', making the Latin form *macte* something like 'Your bliss', a formation based on the root **mak-* and the enclitic 2nd person pronoun *te*, viz. **mak-te*. According to Vennemann, the form *macte* was reanalyzed as an adjective *mactus, -a, -um*. Finally, on the morphological side, the frequency of third person future imperatives in short, direct style, viz. *pollūcētō, estō, interluitō, sūmitō* recalls the style of the XII Tables.

5.3.2. Testimony of grammarians

Ancient grammarians provide a rich, if unpredictable, source of information on older forms, dialect words, popular usage, and other linguistic phenomena unlikely to emerge in the normal literary context. Of the Roman grammarians, Charisius is

among the most prolific in his citations of archaic Latin, mostly because during his time (4th cent. C.E.) there was a strong archaizing tendency in Latin literature. Other consistent sources of information of this sort are Varro's *De Lingua Latina*, written in 47–45 B.C.E., Priscian's *Institutiones Grammaticae* (5th cent. C.E.), and the *Appendix Probi*, an appendix to a manuscript of the *Instituta Artium* of the grammarian Probus, who lived in the second half of the first century C.E. The *Appendix* (compiled and written in the 3rd century), which provides notes on errors of speech which were current at the time, is more useful as a guide to later Latin than to archaic Latin.

The following selection of examples from Varro, Charisius, and Priscian illustrates the type of information which can be gathered from the grammarians. Citations are from Kent's edition of Varro (Kent 1938), Warmington's *Remains of Old Latin* (1935, 1936, 1938), Keil's *Grammatici latini* (1855–1878), and Barwick's edition of Charisius (1964).

5.3.2.1. Varro

(*Ling.* = *De Lingua Latina*)

1. *Ling.* 7.12:

   'Tueri' duo significat, unum ab aspectu ... unde est Ennii illud:
   Tueor te, senex? Pro Iupiter!
   Quis pater aut cognatus volet vos contra tueri?

   '*Tueri* has two meanings, one derived from the idea of looking at ...
   whence comes Ennius' use of it:
   I really see you, old man? O Jupiter!
   What man, father or kinsman, will wish to look you straight in the face?'

2. *Ling.* 7.42:

   Apud Ennium—
   Olli respondit suavis sonus Egeriai,
   'olli' valet dictum 'illi' ab 'olla' et 'ollo'.

   '*In a passage of Ennius*—
   To him replied Egeria with sweet sound,
   the word *olli* has the force of *illi*, the dative from nom. fem. *olla* and nom. masc. *ollus*.'

3. *Ling.* 7.47:

   Apud Lucilium—
   Occidunt, Lupe, saperdae te et iura siluri!
   ... Piscium nomina sunt, eorumque in Graeca origo.

'*In a passage of Lucilius*—
O pike, the juices of the herring and the sheatfish kill you!
These are names of fish (σαπέρδης and σίλουρος), and their origin is in Greek.'

4. *Ling.* 7.49:

Apud Ennium—
Quin inde invitis sumpserint perduellibus.
Perduelles dicuntur hostes.

'*In a passage of Ennius*—
That they did not take it from there against the will of their foes.
Perduelles is a term used for foes.'

5. *Ling.* 7.92:

Apud Naevium—
Circumvenire video ferme iniuria ...
'Ferme' dicitur quod nunc 'fere.'

'*In a passage of Naevius*—
I see that for the most part it circumvents injustices ...
Ferme is a form used for *fere* of modern usage.'

6. *Ling.* 7.96:

In pluribus verbis *a* ante *e* alii ponunt, alii non ... Lucilius scribit—
Cecilius ⟨pretor⟩ ne rusticus fiat.

'In many words some put *a* before *e*, some do not ...
Lucilius writes—
Let's not let Cecilius (for *Caecilius*) become the rustic pretor.'

7. *Ling.* 7.107:

Apud Naevium—
... in *Lampadione* 'protinam', a 'protinus', continuitatem significans.

'*In a passage of Naevius*—
... in *Lampadio protinam* is from *protinus*, and implies uninterrupted time.'

5.3.2.2. Charisius

(Citations to Charisius are to book number of the *Artis Grammaticae Excerpta* (*Gramm.*), followed by the page number in vol. 1 of *Grammatici latini*, which contains books 1–5 of Charisius' grammar.)

1. (*Gramm.* 1, p. 19):

   ... 'aulai medio' Vergilius, 'terrai frugiferai' Ennius in *Annalibus.*

   'Vergil has *aulai medio* (for *aulae medio*), and Ennius in the *Annals* has *terrai frugiferai* (for *terrae frugiferae*).'

2. (*Gramm.* 1, p. 83):

   Nam quod Ennius ait 'equitatus ut celerissimus', barbarismus est.

   'For the fact that Ennius says *celerissimus* (for *celerrimus*) 'like swiftest cavalry', this is a barbarism.'

3. (*Gramm.* 1, p. 90):

   'Neptis' grammatici nolunt dici...et advocant Ennium, quod dixerit ita—
   Ilia dia nepos, quas erumnas tetulisti...

   'The grammarians prefer that the form *neptis* (granddaughter) not be used ... and they cite Ennius because he wrote *nepos* (grandson) as a feminine, thus—Ilia, godly granddaughter, what hardships you have borne ...'

4. (*Gramm.* 1, p. 95):

   Haec 'ficus' ... hae 'fici' ... Lucilius—
   Fici inquit comeduntur et uvae et adsiduas ficos.

   '*Ficus* [nom. sg. fem.]; *fici* [nom. pl. fem.] ... Lucilius says—"Figs and grapes are eaten up and ever-present figs."' [The masc.-looking *ficus* is feminine, as shown by the modifier *adsiduas*.]

5. (*Gramm.* 1, p. 106):

   'Palumbes' Vergilius feminino genere dixit ... Lucilius XIIII masculine—
   macrosque palumbes.

   'Vergil used *palumbes* in the feminine gender ... Lucilius in book XIIII has it in the masculine—and lean (*macros*) ring-doves.'

6. (*Gramm.* 1, p. 109):

   'Stirps' ... dixerunt ... in significatione sobolis masculino genere, ut Pacuvius—qui stirpem occidit meum.

   '*Stirps* ... in its meaning of 'offspring'— they used this word in the masculine gender; for example, Pacuvius—who cut off my family line.'

7. (*Gramm.* 2, p. 197):

'Dedita opera' declinari quidem ut nomen potest, sed tamen vim adverbii retinet. Naevius in *Agitatoria*—
quasi dedita opera quae ego volo ea tu non vis, quae ego nolo ea cupis.

'*Opera* with *dedita* may indeed be declined as a noun; but still it retains the force of an adverb. Naevius in *Agitatoria*— it's as if intentionally (*opera dedita*) that I want what you don't want; what I don't want you desire.'

8. (*Gramm.* 2, p. 197):

'Donicum' pro 'donec'; ita Livius—
ibi manens sedeto donicum videbis me carpento vehentem domum venisse.

'*Donicum* for *donec*; so Livius Andronicus—there sit and wait until (*donicum*) you see that, driving in my carriage, I have come home.'

9. (*Gramm.* 2, p. 216):

'Quanti', cum interrogamus nec emimus; 'quanto', cum emptam rem quaerimus. Atqui ... Naevius in *Tarentilla*—
quae ego in theatro hic meis probavi plausibus, ea non audere quemquam regem rumpere, quanto libertatem hanc hic superat servitus.

'*Quanti* (how much) is used when we ask the price, but are not buying; *quanto* (how much) when we are asking about a thing we have already bought. However ... Naevius in *The Tarentine Maid*— [that a belief], which I have tested by the applause I get here in the theater, and which no king dares to shatter, by how much (*quanto*) slavery here beats that freedom.'

10. (*Gramm.* 4, p. 288):

Saturnii ... in tragoediis non nunquam incidere veteribus solent, ut Ennii Acciique ... ex *Epigonis*—
sed iam Amphilochum huc vadere cerno et nobis datur bona pausa loquendi tempusque in castra revorti.

'Saturnian verses are sometimes found to occur in the archaic tragedies, for example, of Ennius and Accius ... from *The After-Born*—but now I see Amphilochus coming in this direction; and so a good pause in speaking is given to us, and time to return to camp.'

5.3.2.3. Priscian

(Citations are to the number of the book in Priscian's *Institutio de arte grammatica* (*Inst.*), followed by the page number in vol. 1 of *Grammatici latini*, which contains books 1–12 of the *Institutio*).

1. (*Inst.* 6, p. 198):

   Eiusdem declinationis femininorum genitivum etiam in *-as* more Graeco solebant antiquissimi terminare ... Livius Andronicus in *Odyssia*— atque escas habeamus mentionem.

   'The most archaic writers were accustomed to end even with *-as* the genitive singular feminine of this same (sc. first) declension, in the Greek manner ... Livius Andronicus in the *Odyssey*— And let us take thought of food (*escas*).'

2. (*Inst.* 6, p. 215):

   'Hilum' enim pro 'ullum' vetustissimi proferebant. Lucilius in XIIII— Naumachiam licet haec inquam alveolumque putare et calces. Delectes te, hilo non rectius vivas.

   'For very old writers used to say *hilum* for *ullum*. Lucilius in book XIIII— I say, you may think of all this as the game of 'sea-fight' or a game with board and counters. Even though you may amuse yourself, not one bit (*hilo*) more upright would your life be.'

3. (*Inst.* 6, p. 229):

   'Iovis' nominativo quoque casu invenitur. Caecilius in *Epistula*— Nam novus quidem deus repertus est Iovis.

   'The form *Iovis* is also found in the nominative case. Caecilius in *The Letter*—For there was found then a new god Jove.'

4. (*Inst.* 6, pp. 230–231):

   'Puer', 'pueri,' cuius femininum 'puera' dicebant antiquissimi ... Livius in *Odyssia*—
   puerarum manibus confectum pulcherrime.

   '*Puer*, genitive *pueri*. The most archaic writers used to employ the form *puera* for the feminine of this noun ... Livius Andronicus in the *Odyssey*—Most beautifully made by the hands of maidens (*puerarum*).'

5. (*Inst.* 6, p. 235):

invenitur...simplex 'decor decoris' paenultima correpta apud vetustissimos ... Naevius in carmine belli Punici—
Magnamque domum decoremque ditem vexarant.

"We find in the works of the oldest writers the uncompounded form of the epithet *decor*, genitive *decoris* with the penultimate short ... Naevius in the song of the Punic war—They had abused a mighty dwelling, beautiful (*decorem*) and rich.'

6. (*Inst.* 6, p. 264):

... 'veter' etiam analogia exigit, ut bene sit dictum. Accius in *Hecuba*—
Veter factorum terminus sic iusserat pro 'vetus'.

'... analogy itself forces us to accept *veter* as a correct form. Accius in *Hecuba*—Thus had ordained the ancient (*veter*) limit of facts, for *vetus*.'

7. (*Inst.* 6, p. 301):

haec ... eadem etiam in *e* proferebant antiquissimi, 'o Vergilie', 'Mercurie' dicentes. Livius Andronicus in *Odyssia*—
Neque tamen te oblitus sum, Laertie noster.

'Still, these proper names in *-ius* were even inflected with *-e* by the most archaic writers, who used *Vergilie* and *Mercurie* as vocatives. Livius Andronicus in the *Odyssey*—Be sure too I have not forgotten you, our own Laertes' son (*Laertie*).'

8. (*Inst.* 8, p. 399):

... 'assentio' et 'assentior', 'dissentio et 'dissentior' in una eademque inveniuntur significatione. Lucilius in XII—
Assensus sum homini.

'... *assentio* and *assentior*, *dissentio* and *dissentior* are found in one and the same meaning. Lucilius in Book XII—I agreed (*assensus sum*) with the man.'

9. (*Inst.* 9, p. 482):

vetustissimi tamen et 'ausi' pro 'ausus sum' et 'gavisi' pro 'gavisus sum' protulerunt. Livius in *Odyssia*—
Quoniam audivi, paucis gavisi.

'The oldest writers formed *ausi* as the perfect tense for *ausus sum* and

gavisi as the perfect tense for *gavisus sum*. Livius Andronicus in the *Odyssey*—Now I have heard, there's little to rejoice in (*gavisi*).'

10. (*Inst.* 10, p. 522):

vetustissimi tamen etiam 'ĕdo ĕdis ĕdit' dicebant correpta prima syllaba ... Lucilius in IIII—
qui ĕdit se, hic comĕdit me.

'Even the oldest writers used to say '*ĕdo ĕdis ĕdit*' with the first syllable shortened ... Lucilius in Book IIII—This fellow, who has eaten up (*ĕdit*) himself, now eats up (*comĕdit*) me.'

5.4. Spoken Latin

The language which is called Classical Latin—that is, the form of the language represented, say, in the philosophical works of Cicero and the poetry of Vergil—was a standard literary language which was productively accessible to a fairly small segment of Roman society. Reading and writing in this standard, beyond a simplistic, semi-useful level, were not even distinguishing traits of an educated person. To the extent that it was done at all, reading was generally accomplished by educated slaves hired by the wealthy. The average person, educated or not, didn't bother. It is likely that no more than about 10% of the population of Rome and its environs could read and write. Thus, not only was the exalted classical language not the language of the underclasses; it was undoubtedly not the language of everyday communicative interaction even among the educated. It was the literary standard.[3]

Standardization comes about when a particular variety or dialect of a language is associated with a certain powerful social, regional, or economic group according to factors which govern the structure of a given society. When a variety of a language is codified in grammars and dictionaries, becomes a primary vehicle for literary expression, and is then protected and fostered by language guardians such as teachers, politicians, writers, or other influential figures, standardization is being achieved. And when the standardization process has been more or less completed (i.e. when all members of the society recognize the social superiority of a given variety), the rate of change in the prestige standard variety slows appreciably. It ceases to follow the norms being established in spoken varieties and remains more or less firm. Thus it was with the classical standard of Latin.

But spoken varieties of a language behave differently, and so it was with spoken ("vulgar") Latin, a general term which is used to cover the many different social and regional varieties of the spoken language which diverged significantly from the

3 See Herman (1991) for discussion.

classical standard. The linguistic situation in ancient Italy was very complicated, and several facts must be noted. First is the fact that the non-IE Etruscan and IE languages such as Greek, Celtic, non-Latin Italic languages, and many varieties of spoken Latin were simultaneously present in Italy for many centuries. Of course Latin-speakers asserted themselves socially, politically, and militarily, and eventually overwhelmed all others except speakers of Greek. (Perhaps as many as one third of the citizens of Rome in the first century B.C.E. were of Greek extraction). Also, within Roman society there was considerable stratification between the upper and lower classes, and between urban dwellers and their rural counterparts, factors which also contributed to the complexity of the situation. Finally, there is the general matter of "register", or speech style, which characterizes every speech community. For the Latin-speaking speech community of the period, it is convenient to identify three registers. The first is standard literary Latin, best represented by the speeches and literary works of Cicero and the *Gallic Wars* of Caesar. The second is the colloquial Latin of educated society, called *sermō cotīdiānus*. This is best illustrated by Cicero's *Letters* and Horace's *Satires* and *Epistles*. Finally there is "Vulgar Latin", the popular language of the uneducated lower social classes, called *sermō plēbēius*. *Sermō plēbēius* includes many subvarieties such as *sermō urbānus* 'urban speech', *sermō rūsticus* 'rustic speech', *sermō mīlitāris* 'military speech', the language of graffiti, and so on. The *sermō plēbeius* is well represented in Petronius's *Banquet of Trimalchio*. All these varieties existed simultaneously in the Roman world.

It is the *sermō plēbēius* or Vulgar Latin which concerns us here. How much is known about it, and what is the source of information? Only written Latin survives, which is for the most part closer to the classical standard. This fact forces a reliance on indirect sources of evidence on the spoken idioms, such as errors made in written texts which betray dialect features of the writer, comments by writers on non-standard forms or pronunciations, indications by grammarians on rare, archaic, foreign, or simply unacceptable forms of the language, certain literary forms which are done in an informal style such as the works of Plautus and Petronius, and occasional regional inscriptions. To these sources can be added the retrospective allowed by the Romance langages, which evolved from various forms of spoken Latin. From all these sources comes a composite picture of Vulgar Latin, that is, the spoken language of everyday citizens as reflected in non-classical sources from the second century B.C.E. and onward. For an introduction to the subject, see Väänänen (1981).

5.4.1. Literary reflections of spoken Latin

5.4.1.1. Plautus

Titus Maccius Plautus was born around 255 B.C.E. at Sarsina, in Umbria. During his

lifetime (he died in 184 B.C.E.), he wrote more than twenty plays that have survived, plus many more that have not. All his plays were adaptations of Greek originals that were tailored to Roman tastes and language.

The language of Plautus reveals a markedly different Latin from the classical standard. Because Plautus's audience was largely uncultured and uneducated, his work provides valuable evidence about the kind of language that was intelligible to a Roman citizen of his day. Though non-classical, Plautine Latin evidences a definite style, one which included parody and the intentional use of both archaisms and colloquialisms which must have appealed to the tastes of his audiences, furnishing glimpses into the relatively unmonitored daily expression of second century B.C.E. Latin.

Plautus often favors complex, expressive forms of words over standard literary expressions. Cf., for example, diminutives like *animulus* 'my sweet' (a term of endearment), *mellilla* 'little honey', *ocellus* 'little eye', *corpusculum* 'small body', *uxorcula* 'little wife', *papilla* 'breast', *belliātula* 'pretty', *vetulus* 'little old (man)', *prīmulum* 'at first', *pauxillātim* 'gradually', *plūsculum* 'rather more', and *tardiusculus* 'somewhat slow'.

The same tendency toward expressive morphological constructions is evident in pronominal forms like *egomet* 'I' and *tūte* 'you sg.', adverbs like *hinc ... indidem* 'from the same place', *hīc ... ibīdem* 'in the same place', and pleonastic forms like *quid ... quicquam* 'anything', *quis ... quisquam* 'anybody', *nēquid ... quicquam* 'anything', *quantumquantum* 'how much', and *ubiubi* 'where'. A particularly interesting pleonastic usage is *nēmō ... homō* 'no one', which seems to reflect the etymological background of *nēmō* 'no one' from **ne homō* 'not a person.'

In the verb, Plautus has a tendency to use frequentatives such as *cantō* 'I sing', *fugitō* 'I flee', *scīscitō* 'I inquire', *ductō* 'I lead', *quaeritō* 'I seek eagerly', *negitō* 'I deny frequently', and *loquitor* 'I chatter', a preference which must have been characteristic of the spoken language because of the persistence of these forms in the Romance languages (cf. Fr. *chanter*, Span. *cantar*, It. *cantàre* 'to sing'). He also uses preverb plus simple verb constructions such as *deasciō* 'I cheat', *deamō* 'I love dearly', *dērogitō* 'I ask repeatedly', *dēluctō* 'I wrestle', *comedō* 'I eat up', *condecet* 'it is decent', *cōnsilēscō* 'I become quite still', *commōnstrō* 'I show fully and distinctly', *adcrēdō* 'I yield my belief to another', *adformīdō* 'I am in fear, moderate', and many others. Such verbs are often construed with the case of the following governed nominal dictated by the preverb, but without the prenominal preposition typical of Classical Latin. Cf. the following, in which the ablative case form *urbe* is governed by the *ex-* of *exsulātum*. Preposition incorporation of this sort may reflect the historical development of such constructions.

> *An metuis ne quo abeat foras urbe exsulatum ...? Mostell.* 596
>
> 'Are you afraid that he will go away and leave the city ...?'

Another trait of Plautine verbal morphology is his use of the impersonal passive in *-r* (e.g. *calētur* 'it is hot (weather)', sometimes followed by an accusative object (e.g. *Cas.* 185: *Pessumis me modis despicatur domi* 'I am despised at home in the worst way'). The impersonal passive is one of the oldest uses of the *-r* form verbs, which came to mark passive, deponent, and middle voice functions. Compare the following sentences, loosely translated.

Quid agitur, Calidore? *Pseud.* 273

'How's it going, Calidorus?'

Amatur atque egetur acriter.

'There is love and fierce need.'

Quid agitur? *Persa* 17

'How's it going?'

Vivitur.

'Life goes on.'

This usage is probably related to Plautus's frequent interchange of the active and middle/passive infinitives, as though there was no difference between the two. Cf. the following.

Triduom unum est haud intermissum hic esse et bibi, scorta duci, pergraecari, fidicinas, tibicinas ducere. *Mostell.* 959

'(I say that) there hasn't been a three-days intermission from eating (act.), getting drunk (mid./pass.), taking whores (mid./pass.), acting like Greeks (dep.) and bringing in (act.) lute girls and flute girls.'

To the above two tendencies in Plautus may be added the general lack of a distinction between active, middle, and deponent forms of verbs, shown by the frequent exchange of *-r* and non-*r* verb forms such as *opīnō/opīnor* 'I believe', *lūdificō/lūdificor* 'I make game of', *vagō/vagor* 'I wander', *mereō/mereor* 'I deserve', as well as the equivalence of *-r* verbs with corresponding reflexive forms like *convertor/mē convertō* 'I turn (myself) around', and *accingor/mē accingō* 'I arm (myself)'. This situation may reflect the survival of ancient categories like the middle voice in some verbs, as well as an ongoing merger of these previously distinct verbal categories in spoken Latin.

A further characteristic of Plautine structure which is noteworthy is the use of periphrastic auxiliaries, as shown in the following example.

Nunc ego lenonem ita hodie intricatum dabo ... *Persa* 457

'Now I will get the pimp so tied up at this time ...'

This usage, analyzed by Pinkster (e.g. 1983, 1990) as a "praedicativum", takes place with a number of verbs and reflects a colloquial preference for analytical structures with individuated words, as opposed to the classical synthetic structures with bound morphological elements. This construction correlates with the structure of periphrastic presents like *carēns fuī* lit. 'I was lacking,' and *audiēns sum* lit 'I am hearing'.[4]

Plautine Latin is different from the classical standard but clearly still intelligible to users of that standard. Differences such as those just reviewed in morphology and morphosyntax, as well as others in phonology and the lexicon (outright differences in syntax are rare), could be easily handled by speakers of any register. See Lindsay (1907).

5.4.1.2. Petronius

Petronius is the author of the *Satyricon*, from which his famous *Cena Trimalchionis* 'Dinner Party of Trimalchio' is taken. He was a minister of Nero, the Emperor from 54 to 68 C.E., holding the title of *ēlegantiae arbiter* 'judge of style' in the court until he took his own life in 66 C.E. Though less interesting than the language of Plautus from the point of view of archaic Latin, Petronian Latin embodies many colloquialisms which reflect the *sermō plēbēius* and which may be indicative of earlier usage.

The *Cena Trimalchionis* gives an indication of "street Latin", i.e. random, non-self-conscious, unmonitored colloquial style. There are probably two registers consistently represented in the *Cena*. One is the *sermō cotīdiānus*, evident in the language of Encolpius, who is the narrator of the events in the dinner party; the other is the *sermō plēbēius* of Trimalchio, the rich freedman who gives the dinner.

a. Encolpius addressing his tablemate at dinner (*Sat.* 37).

Non potui amplius quicquam gustare, sed conversus ad eum, ut quam plurima exciperem, longe accersere fabulas coepi sciscitarique, quae esset mulier illa, quae huc atque illuc discurreret. 'Uxor' inquit 'Trimalchionis, Fortunata appellatur, quae nummos modio metitur. Et modo modo quid fit? Ignoscet mihi genius tuus, noluisses de manu illius panem accipere. Nunc, nec quid nec quare, in caelum abiit et Trimalchionis topanta est.'

'I could not taste any more, and turning to him so that I could pick up as much as possible, I began to tell far-fetched tales, and to ask who the

4 The correlation is not perfect because the *sum* in structures like *audiēns sum* is is a main verb, not an auxiliary.

woman was who was running around here and there. "She is the wife of Trimalchio," he said, "Her name is Fortunata. She measures her money by the bushel. And just a little while ago, what was she? And if you will pardon my saying so, you wouldn't have been willing to take a piece of bread from her hand. But now, who knows why or how, she has gone first-class, and is Trimalchio's one and only."'

b. Trimalchio, reacting to a situation in which a silver skeleton has just been thrown on the dinner table (*Sat.* 34).

Trimalchio adiecit:
'eheu nos miseros, quam totus homuncio nil est. Sic erimus cuncti, postquam nos auferet Orcus. Ergo vivamus, dum licet esse bene.'

'Trimalchio added:
"Ah, poor us; the poor little man is nothing. We will all be the same, after Orcus carries us away. Let us live then, while we still can do so well."'

Discussion: Note the extended style of Encolpius, with embedded dependent clauses marked by subjunctive verbs (*exciperem*, *esset*, *discurreret*); the correct use of the dative *mihī* after *ignōscet* (accusatives are common in the language of the freedman); SOV word-order (SVO is common in the freedman's speech); and the general use of the standard, as opposed to the morphologically modified forms of words, reflecting a more refined style. This contrasts with the style of Trimalchio, which even from this short excerpt can be seen to differ in its use of diminutives (*homunciō*), shortened forms (*nīl*), short, direct sentences without embedding or dependent subjunctives, and the use of an adverb (*bene*) with *esse* instead of the expected adjective (*bonum*).

The following are among the traits which have been identified as characteristic of the Latin of Petronius (cf. Sedgwick 1925, Petersmann 1977, and Boyce 1991).

5.4.1.2.1. Phonology

Various phonological mutations are found which disrupt the syllabic structure of words, presumably for pragmatic effect. There is, for example, syncope in *būblum* for *būbulum* 'relating to cows or oxen', *offla* for *offula* 'a small piece', and *caldus* for *calidus* 'warm'; epenthesis in *fericulus* for *ferculum* 'a litter, frame', *Proculus* < Gk. Πρόκλος, a slave name, and *nōmenculātor* for *nōmenclātor* 'one who calls a person or thing by name'. Note also the sporadic phonological mutations in words such as *sūsum* for *sursum* 'upward', *istōc* for *istūc* 'to that place', *credrae* for *cedrī* 'cedars', *culcitra* for *culcita* 'pillow', and *clūsus* for *clausus* 'closed'.

5.4.1.2.2. Lexicon (derivation)

Expressive morphological formations abound in Petronius, as can be seen in hybrid Greek and Latin forms like *excatarissō* < Lat. *ex-* + Gk. καθαρίζω 'I clear out', *percolopō* 'I beat' < Lat. *per* + Gk. κολαφ-ίζω 'I slap', and *oclopēctam* 'with fixed, staring eyes' < Lat. *oculus* + Gk. πηκτός. Also unusual are adverbial creations in *-tim* like *urceātim* 'in bucketfuls' (based on *urceus* 'pitcher') and *ūbertim* 'abundantly' (based on *ūbertās* 'abundance'). There are also verbs with incorporated prepositions, such as *ad-cognōscō* (CLat. *agnōscō*) 'I recognize' and *ex-opīnissō* 'I form an opinion' (CLat. *exopīnor*). Adjectives are often paired with unexpected endings, such as those in *-āx* like *nūgāx* 'trifling' and *abstināx* 'abstinent'; those in *-ōsus* (*-ossus*) such as *sūcōsus* 'juicy', *īnspeciōsus* 'not imposing', and *dignitōsus* 'worthy'; those in *-ātus* such as *bonātus* 'good', *expudōrātus* 'shameless', and *phalerātus* 'adorned'; and those in *-ārius* such as *ōrāculārius* 'solemn, confidential', *mīcārius* 'thrifty', and *dupondiārius* 'worthless'. Other expressive formations with adjectives are formed from the unusual suffixation of *-bundus* (*cantābundus* 'singing'), *-īvos* (*absentīvos* 'long absent'), and *-īcius* (*emptīcius* 'bought'). Expressive nominal formations can be seen in nouns ending in *-mōnium* such as *tristimōnium* 'sadness' and *gaudimōnium* 'joy'; in *-īna*, such as *ursīna* 'bear' and *anatīna* 'duck'; in *-ō*, such as *Incubō* 'spirit that watches over buried treasures' and *bārō* 'blockhead'; diminutives such as *audāculus* 'a little bold' and *homunciō* 'little man'; and compounds such as *caldicerebrius* 'hot-headed' and *plūsscius* 'knowing'; similarly expressive are verbal derivatives such as *canturiō* 'I chirp'. An edition of Petronius with interesting lexical commentary is that by Smith (1975).

5.4.1.2.3. Morphology (inflection)

Petronius often distorts the morphological class of words as a means of creating expressive formations. For example, he frequently substitutes a 1st declension feminine ending for a neuter plural (or Greek neut. sg. in *-a*), as in *intestīna* 'guts' and *schēma* 'shape, figure'; a 2nd declension masculine for a neuter, as in *balneus* for *balneum* 'bath', *caelus* for *caelum* 'heaven', and *candēlābrus* for *candēlābrum* 'candlestick'; and 2nd declension for 4th, as in *cornum* 'horn' and *gustus* 'tasting'. A similar expressive distortion can be seen in adjectives, where for example Petronius substitutes a 2nd declension for a 3rd, as in *pauperōrum* for *pauperum* 'of poor men' (gen. pl.); in adverbs (cf. *largiter* for *largē* 'plentifully'); in pronouns (cf. *quī* for *quis* 'who', and *ipsimus* for *ipse* 'the very one'); and in verbs, where he substitutes freely between deponent and active: cf. *loquō* for *loquor* 'I speak', *argūtō* for *argūtor* 'I make noise', *amplexō* for *amplexor* 'I embrace'; *dēlector* for *dēlectō* 'I delight', *fastīdior* for *fastīdiō* 'I feel disgust', and *rīdeor* for *rīdeō* 'I laugh'. Petronius also often manipulates verbal conjugation classes, as can be seen in *olunt* for *oleunt* 'they smell', *dēfraudit* for *dēfraudet* 'X cheats', and *vetuō* for *vetō* 'I forbid'.

5.4.1.2.4. Syntax

Petronius often distorts selectional restrictions on words, placing the governed word in an unfamiliar case for the purpose of pragmatic effect. Such violations can be seen, for example, when he uses an accusative object with verbs which are specified for some other case, as in *frūnīscor* 'I enjoy' (abl.), *persuādeō* 'I persuade' (dat.), and *oblīvīscor* 'I forget' (gen.); or when he uses the dative for the accusative with *adiūtō* 'I help'. He also exchanges transitive and intransitive verbs, as when he uses *effluō* 'I flow out' and *ēbulliō* 'I breathe out' transitively.

Other case manipulations can be seen when notions such as "place where" and "motion to" are used unexpectedly, e.g. *forīs* 'out of doors' for *forās* 'through the doors'; or when accusative and dative are exchanged, as in *Capuae* (dat./loc.) *exīre* 'to go to Capua' (for *in Capuam*); or when a preposition such as *prae* 'before' is used with the accusative instead of the expected ablative, e.g. *prae līterās* 'before the letters'.

Petronius often exchanges pronouns in syntactically unpredicted environments, as when he uses *ille* for reflexive *sē*, as in *Sat.* 38.4: *ut illi mitteretur* 'so that it might be sent to him'; or when he uses *sibī* as an intensifier, as in 66.2: *de suo sibi* 'on its own' (this "pleonastic reflexive" is common in some Late Latin texts); or when he uses *sibī* for *eī*, as in 43.1: *ille habet quod sibi debebatur* 'he has what was owed to him' (for the expected *ille habet quod ei debebatur*); or when he uses *ille* for *is* 'he', as in the previous example, anticipating later Romance developments.

Some of the most telling Petronian characteristics are those which foreshadow future developments in later Romance features. Besides his use of *ille* for *is* 'he' (cf. Fr. *il*), there is his use of adverbs with *esse* 'to be' instead of the expected predicate adjective, as in *bene, suāviter esse* 'to be well, pleasantly'; *tam ... quam* for *tālis ... quālis* 'of such a kind'; his use of the conjunctions *quia* and *quod* in subordinate clauses instead of the CLat. accusative and infinitive construction: cf. 46.4: *et dixi quia mustella comedit* 'and I said that the weasel ate (them)' for the expected *et dixi mustellam comesse.*

An interesting aspect of Petronian style is his use of parataxis (coordinate structure) instead of hypotaxis (subordinate structure). This trait is characteristic of spoken language generally and reflects the colloquial nature of much of the language in the *Cena.* The following cases are typical.

spero, sic moriar. *Sat.* 57.6

'I hope I will die thus.'

suadeo non patiaris ... *Sat.* 74.15

'I urge you not to allow ...'

credo, dixerit. *Sat.* 52.10

'I believe he said it.'

Also noteworthy is his use of "phrasal" and "modal" verbs where inflectional formations might be expected, e.g. *coepī* 'I begin' (for inchoatives in *-scō*), *volō* 'I wish' (for future formations), and *dēbeō* 'I should' (also for futures). This may reflect the ongoing typological shift in Latin in which the INFL (inflection) comes to precede rather than follow the verb, which continued into the Romance languages. See however Pinkster (1989).

Yet another feature of Petronian style involves the self-conscious use of the indicative in grammatical environments which specify the subjunctive, which is characteristic of the spoken language and continues right up into the Romance languages. This tendency results in part from the paratactic nature of most spoken language in contrast with the hypotactic structures which are more characteristic of literary productions. The following riddle exchange illustrates this tendency, where the expected subjunctive (*currat, moveatur, crescat, fiat*) of an indirect question is replaced by the indicative more characteristic of direct speech (*Sat.* 58.8–9).

Ecce:
(A) *Qui de nobis longe venio, late venio? Solve me.*
(B) *Dicam tibi, qui de nobis currit et de loco non movetur; qui de nobis crescit et minor fit.*

'Here:
(A) Who of us am I who come far and wide? Guess me.
(B) I'll tell you, who from among us runs about and does not move from one place; who from among us grows in size and becomes smaller.'

Like the language of Plautus, the language of Petronius holds many keys to the spoken language, which in turn holds many keys to structures and tendencies inherited from earlier stages of Latin, and possibly from PIE. For this reason it has a privileged place in the historical study of Latin, especially as a guide to possible archaisms preserved in the unconscious spoken medium.

5.5. Graffiti

Graffiti provide a revealing if unsystematic view of a language, because in general they record non-literary writings in a relatively free and unstructured setting. Many specimens of graffiti are available in Latin, the most famous being the graffiti of Pompeii, which are securely datable to the period up to 79 C.E., when the city of Pompeii was destroyed by the eruption of Mt. Vesuvius. The inscriptions and graf-

fiti of Pompeii, which almost certainly would have been lost were it not for the Vesuvian disaster, provide a wide range of written idioms, from classically composed verse forms to totally informal expressions of emotion. The Pompeiian graffiti contain many colloquialisms which are found in the later Romance languages, testimony to their presence in the popular speech of the time. A few examples follow.

5.5.1. CIL 4.1904

Pisani (1960: 121, B 19); Väänänen (1966: 13); Pulgram (1978: 218, L 36).

> ADMIROR PARIENS TE NON CECIDISSE RVINIS QVI TOT | SCRIPTORVM TAEDIA SVSTINEAS.
>
> 'Oh wall, I am amazed that you have not fallen in ruins, you who must bear the triflings of so many writers.'

Discussion: This graffito is an example of a metrical inscription. It is a metrically exact epigram, which is a short, pointed poem consisting of one or more elegiac distichs (a distich is a sequence of two unlike lines). The first metrical line (up to RVINIS) is a hexameter, while the second (from QVI to the end) is a pentameter (see Halporn—Ostwald—Rosenmeyer 1980 for these and other metrical terms). These lines were obviously devised by someone who had a knowledge of Latin metrical conventions. The only non-standard feature of this elegant graffito is the hypercorrect spelling of PARIENS for *parīēs* 'wall'.

5.5.2. CIL 4.3948

Pisani (1960: 120, B 13); Pulgram (1978: 218–220, L 37).

> TALIA TE FALLANT | VTINAM MEDACIA COPO: | TV VEDES ACVAM ET BIBES IPSE MERVM
>
> 'Would that such lies tripped you up, innkeeper; you will sell water, and you yourself will drink undiluted (wine).'

Discussion: This graffito is also an epigram, though it is not so artfully constructed as the example above. While it is metrically correct, there are several substitutions of short vowels for long ones which suggest that the writer may have spoken a variety of Latin in which contrastive vowel length had been lost. Apart from its metrical status as an epigram, this graffito contains several noteworthy features such as the

monophthongization of *au* in COPO (*caupō*) and the loss of the preconsonantal nasal in VEDES (*vendēs*) and MEDACIA (*mendācia*), both of which are typical of the spoken varieties of Latin at the time; note also the substitution of *c* for older *q* in ACVAM (*aquam*).

5.5.3. CIL 4.1173

Pulgram (1978: 216-217, L 34).

> QVISQVIS I AMA VALIA I PERIA QVIN I OSCI AMARE I BIS
> [T]ANTI PE I RIA QVISQV I IS AMARE I VOTA
>
> 'Whoever loves, may she thrive; may she perish who does not know how to love; twice over may she perish who forbids loving.'

Discussion: This graffito is not a metrical inscription. Line breaks obscure the word boundaries; when reordered with proper word breaks the text reads QVISQVIS AMA VALIA PERIA QVI NOSCI AMARE BIS TANTI PERIA QVISQVIS AMARE VOTA. The most noteworthy linguistic features of this sample are the dropped final *-t* in AMA (*amat*), VALIA (*valeat*), PERIA (*pereat*), NOSCI (*nōn scit*, with additional loss of nasal, or possibly *nescit*), and VOTA (*vetat*); also the possible archaic *o*-grade vowel of VOTA, though this could be a rounding induced by the preceding *v*.

Many of the changes evident in these graffiti are reflected in later developments in the Romance languages, such as the general loss of vowel length, the loss of nasals before consonants (cf. Fr. [ɑ̃fɑ̃] *enfant* 'child'), and the loss of final *t* (cf. Fr. *il aime* 'he loves' = Lat. *amat*).

5.6. Letters

5.6.1. Claudius Terentianus

The letters of Claudius Terentianus provide an interesting view of a non-standard variety of Latin. With the inscriptions and graffiti of Rome and Pompeii and the *Cena Trimalchionis*, these letters provide some of the most valuable continuous texts of Imperial Latin.

Terentianus was a soldier in Egypt. His letters to his father, Claudius Tiberianus (five in Latin, five in Greek; he was bilingual), can be dated to the first quarter of the 2nd century C.E. He apparently dictated them to scribes, but the unity of the language suggests no scribal intervention (J. Adams 1977: 3). These letters are among the relatively few examples of Latin papyri (about four hundred in all, compared

with tens of thousands in Greek) which have survived and are systematically serviceable.

The documents themselves were found in an archaeological excavation at Karanis, near Alexandria, during the period 1924–1934. They have received scant attention in comparison with the older epigraphical testaments; see J. Adams (1977) for bibliography. The text reproduced here is no. 471 of Michigan Papyri 8, nos. 467–481 (Youtie—Winter 1951). The text can also be found in Cavenaile (1958: 366–367, no. 254); see Pighi (1964: 67–72) for a slightly different version.

5.6.1.1. Letter by Claudius Terentianus to his father Claudius Tiberianus

[first 9 lines illegible]

Recto

10. *dico illi, da mi, di[c]o, q[e]s paucum; ibo, dico, ad amicos*
11. *patris mei. Item açu⟨m⟩ lentiaminaque mi mandavit;*
12. *nullum assem mi dedit. Ego tamen ⟨h⟩inç ebinde col-*
13. *lexi paucum aes ed ibi aḍ . uaṛọçlum et . g[.]ịvan*
14. *et emi pauca que ę⟨x⟩pędivi. Si aequm tempus eşset se exi-*
15. *turum Alexandrie ş[i]lui[t]. Item non mi d[e]dit aes quam⟨quam⟩*
16. *aureum matri mee in vestimenta ⟨dedit⟩. Hoc est, inquid,*
17. *quod pater tu⟨u⟩s mi mandavit. Quo tempus autem veni*
18. *omnia praefuerunt, et lana et ⟨linum?⟩. Matrem meam au-*
19. *te⟨m⟩ praegnantem imveni; nil poterat facere. De⟨i⟩nde pos⟨t⟩ pau-*
20. *cos dies parit, et non poterat mihi succurrere. Item litem*
21. *⟨h⟩abuit Ptolemes pater meu⟨s⟩ sopera vestimenta mea, et fac-*
22. *ctum est illi venire Alexandrie con tirones et me reli-*
23. *quid con matrem meam. Soli nihil poteramus facere,*
24. *absentia ⟨illius⟩ illim abịt[u]ri. Mater mea ⟨dicit⟩: spec[t]emus*
25. *illum dum venit et ven[i]o tequm Alexandrie et deduco te*
26. *usque ad nave⟨m⟩. Saturninus iam paratus erat exire*
27. *illa die qu[a]ndo tam magna lites factam est. Dico il-*
28. *li: veni interpone te si potes aiutare Ptolemaeo patri*
29. *meo. Non magis quravit me pro xylesphongium*
30. *sed su⟨u⟩m negotium et circa res suas. Attonitus*
31. *exiendo dico illi: da m[i] pauqum aes, ut possim venire*
32. *con rebus meis Alexandrie, im inpendia. Negabit se*
33. *⟨h⟩abiturum. Veni, dicet, Alexandrie et dabo t[i]bi. Ego*
34. *non abivi. Mater m⟨e⟩a no⟨n haben⟩s assem vendedi⟨t⟩ lentiamina*
35. *[u]t veṇiam Alexandrie*

Verso

1. *Claudio Tiberiano [pat]ṛ[i a Cla]ụḍ[io] Teren[tiano]*

'I tell him [probably Saturninus]: "Give me," I say, "some money. I will go, I say, to friends of my father." Thereupon he turned over to me a needle and linens, but he gave me not a cent. However, I gathered some money from here and there and went to the grocer's and bought a few things which I dispatched. He did not tell me that he would leave for Alexandria when the time would be convenient. Likewise he did not give me money though he did give a gold piece to my mother for clothing. "This is," he said, "what your father ordered me to do." At the time I arrived, however, everything was available, both wool and flax.

'I found my mother pregnant. She could do nothing. Then after a few days she gave birth and could not assist me. Likewise Ptolemaeus, my father, had a quarrel with me about my clothing; and it happened that he had to go to Alexandria with recruits, and he left me with my mother. Alone we could do nothing, in his absence we were about to leave that place. My mother says: "Let us wait for him until he comes, and I will come with you to Alexandria and accompany you to the ship." Saturninus was already prepared to leave on that day when so great a quarrel came about. I tell him: "Come and intercede, see if you can help Ptolemaeus, my father." He did not care for me one bit, but only for his business and his things. Perplexed I tell him, as he leaves: "Give me some money, so that I can come with my things to Alexandria, on interest." He denied that he had any. "Come," he said, "to Alexandria, and I will give it to you." I did not go. My mother, not having a cent, sold the linens so that I could come to Alexandria.

'To Claudius Tiberianus, his father, from Claudius Terentianus.'

Discussion: (Line numbers in parentheses.) This letter evidences a number of phonological and morphological peculiarities which tell something about the *sermō plēbēius* of the time. In phonology, for example, note the monophthong in *que* for *quae* (14); the loss of final *-m* in *acu* (11) and *aute* (18–19); the vocalic changes in the possessive pronouns *tus* for *tuus* (17); *sum* for *suum* (30), and *ma* for *mea* (34); these uses anticipate later developments (cf. Fr. *ton, ta* 'your'; *son, sa* 'his, her'; *mon, ma* 'my'); the spellings *imveni* (19) and *im inpendia* (32) suggest that the nasals were partially undifferentiated in close juncture; note final *-d* in *inquid* for *inquit* (16) and *reliquid* for *reliquit* (22–23). This may be a deliberate archaism, though it is more likely some kind of innovation, perhaps suggesting a lax pronunciation of final *-d* on its way to eventual loss; note spelling of *negabit* for *negavit* (32).

On the morphological side, note the short form of dat. sg. *mi* for *mihi*, throughout the passage; the compound preposition *ebinde* for *abinde* (13); the mixture of ablative and accusative in *quo tempus* (17), though this could be loss of final *-d* in *quo*, making the construction accusative (*quod tempus*); the use of an accusative instead of the ablative following the preposition *con* (*cum*) in *con tirones* and *con matrem*

meam (22, 23); and the repeated use of *ille* as the third person pronoun, instead of *is*, which anticipates Romance developments (cf. Fr. *il* 'he').

A few syntactic features of note are the use of a directional locative in *Alexandrie* (35); and the more or less consistent SVO word order, in contrast with putative Classical Latin SOV.[5]

See Cavenaile (1958) and J. Adams (1977) for more detailed analysis of the many peculiarities of this and other letters in the papyrological corpus.

5.6.2. A letter from the archive of Flavius Cerialis

This letter is one representative of a large hoard of Latin materials from Vindolanda, a Roman frontier post on Hadrian's wall in Britain. The letters are preserved on wooden boards on which wax for writing was placed; the boards preserve the incision of the stylus used to inscribe the letters. These materials date to the second century C.E. and are especially interesting from a paleographic point of view in that their "rustic" style shows excellent evidence of the evolution of cursive scripts that begin to appear on monuments and other official documents in the fourth century. Cited here is the reconstructed text of the letter, from Bowman—Thomas (1983: 102–105). The Latin shows a surprising consistency with the classical standard, though there are a few items such as IT for *id* and QVOT for *quod*, with substitution of final *t* for *d*.

Recto
NIGER ET BROCCHVS ÇERIAḶI
SVO SALVTEM.
OPTAMVS, FRATER, IT QVOT
ACTVRVS ES FELICIS-
SIMVM SIT. ERIT AVTEM
QVOM ET VOTIS NOSTRIS
CONVENIAT HOC
PRO TE PRECARI ET TV
SIS DIGNISSIMVS. CON-
SVLARI N(OSTRO) VTIQVE MA-
TVRIVS OCCVRRES.
OPṬAMVS, FRATER
DOMINE, [TE?] BENE VAḶERḚ
TRACES NORE ḚSSḚ.

5 See Pinkster (1991) for an analysis of Classical Latin as partly SVO. For word order in Latin generally, see Marouzeau (1953), J. Adams (1976), Panhuis (1982), and Bauer (1995).

Verso
CERI]AL[
]ÇQH

'Niger and Brocchus to their Cerialis, greeting. We hope, brother, that what you are about to do will be most successful. It will be so, indeed, since it is both in accord with our wishes to make this prayer on your behalf and you yourself are most worthy. You will assuredly meet our governor quite soon. We hope, our lord and brother, that you are in good health.
'To ... Cerialis ... of cohort ...'

5.7. Summary

This chapter has presented evidence from various sources such as early inscriptions, reports from grammarians, and the evidence of ancient literary sources to establish the foundations for preparing the linguistic history of Latin as it developed from PIE. A survey of "vulgar" (spoken) Latin has also been provided. The treatment of non-Classical Latin has been brief in comparison with the treatment of the early evidence. Whole areas of material have not been considered, including Late Latin (ca. 200–350 C.E.), Christian Latin (the language of the early Christian communities, up to about 450 C.E., which eventually became the language of the Roman church), Medieval Latin (Latin as it was used in Europe during the Middle Ages, ca. 500–1200 C.E.), the Latin of the Carolingian Renaissance from the late eighth through the early tenth centuries C.E., and others, all of which provide valuable information on later developments in the spoken and the written language. Apart from the material from Charisius and Priscian, the current inquiry stops essentially at the end of the "Silver Age" of Latin literature of the early Empire (14 C.E. to 180 C.E.). A systematic treatment of the many varieties of Latin throughout the post-classical period and their divergences from the classical language belongs more properly with the study of the Romance languages than with the IE foundations of Latin. Such an investigation would include information from more grammarians, glossaries, inscriptions, ancient authors, technical treatises, later histories, laws, charters, and Christian authors, as well as the evidence of the Romance languages. For further information, see Väänänen (1981), Pulgram (1978), Herman (1970, 1990), and Wright (1982), with bibliography.

Chapter 6
The development of the Latin phonological system from PIE

This chapter contains an account of the evolution and development of the PIE phonological sysyem into Latin. PIE phonological segments are traced into Latin in specific environments, beginning with the vowels and laryngeals. For ease of presentation of the Latin data, the two outcomes of the PIE semivowels *i̯/*i* and *u̯/*u* as either vowels (**i* and **u*) or as glides (**i̯* and **u̯*) are separated into their vocalic and consonantal outcomes, placing **i* and **u* in the PIE vowel chart, table 6.1, and **i̯* and **u̯* in the PIE consonant chart, table 6.2.

6.1. The vowels and laryngeals

Since the primary effects of the PIE laryngeals in Latin are found in the vocalic system, laryngeals are included in the discussion of the vowels. Specific developments of laryngeals with the resonants and a few other consonants are taken up below. Initial laryngeals before consonants in Latin are always lost: cf. **h₁neun* 'nine', Lat. *novem*.

General sources of information on the Latin developments are Leumann (1977), Meillet—Vendryes (1979), Sommer (1977), Sihler (1995); see also Eichner (1992). Etymological data are from Pokorny (1951–1959), Watkins (1985), Ernout—Meillet (1967), and Walde—Hoffmann (1956). For the complete phonological system of PIE, see chap. 2, table 2.8 on page 59. A detailed treatment of the internal Latin developments is Niedermann (1953).

6.1.1. The PIE vowels and diphthongs in Latin

Table 6.1. PIE vowels and diphthongs

i		u	ī		ū
e		o	ē		ō
	a			ā	
ei		oi	eu		ou
	ai			au	

PIE Laryngeals		
h_1	h_2	h_3

6.1.1.1. Short vowels

**e* > Lat. *e*: Lat. *ferō* 'I carry', Gk. φέρω, Skt. *bhárāmi*, Goth. *baíran* 'to carry' (< **b^{h}er-*);
Lat. *genu* 'knee', Hitt. *genu*, Gk. γόνυ, Arm. *cunr* (< **genu-/gonu-*);
Lat. *genus* 'race, kind', Gk. γένος, Skt. *jánaḥ* (< **genh$_1$-os-*);
Lat. *vehō* 'I carry', Lith. *vežù*, Skt. *váhāmi* (< **ueg^h-*).

**h$_1$e-* > Lat. *e*: the Latin reflexes of reconstructed **h$_1$e-* are indistinguishable from those of **e*.
Lat. *esse* 'to be', Skt. *ásmi* 'I am', OLith. *esmì*, Arm. *em*, Hitt. *ešmi* (< **h$_1$es-*);
Lat. *ego* 'I', Gk. ἐγώ, Goth. *ik*, Hitt. *uk*, Skt. *ahám* (< **h$_1$egoH/h$_1$egHom*);
Lat. *equus* 'horse', Gk. ἵππος, Skt. *áśvaḥ*, Toch. B *yakwe* (< **h$_1$ekuo-*).

Notes

1. Latin *e* becomes *i* before *ŋ*, which arises through assimilatory contact of *n* with a following velar *k* or *g*. Examples are: Lat. *tingō* 'I wet', Gk. τέγγω, *lingua* (OLat. *dingua*) 'tongue' < **dng^{h}ueh$_2$*. This change also takes place before *-gn-*, as in Lat. *dignus* 'worthy' < **deg-no-* < **dek-no-* (cf. *decet* 'it is proper') and *lignum* 'firewood' (< **leg-no-*). Latin orthographic *-gn-* was at one time pronounced [ŋn] (i.e. with a change of the velar stop to a velar nasal), thus unifying the change of *e* to *i* in *dignus*, *lignum* with the same change in *tingō*. The occasional change of *e* to *i* before *m*, as in *similis* 'like', *simul* 'at the same time' (OLat. SEMOL) < **sem-*, and the not infrequent substitution of *i* for *e* in late inscriptions, show this change of *e* to *i* to be a more general phenomenon, in which pre-nasal environments were strongly weighted (cf. Lat. PHILVMINA, which is found occasionally for PHILVMENA, Gk. Φιλουμένη). There may also be harmonizing of the vowels in *similis/simul* versus *semel* 'once'.

2. Latin *e* becomes *o* in the environment of a *w* or velar *l* ([ɬ]), though this change is not completely regular and depends in part on the other sounds in the word. For example, *e* > *o* in *novus* 'new' (< **neuos*, cf. Gk. νέ(Ϝ)ος, Skt. *návaḥ*), *novem* 'nine' (< **h$_1$neun*, cf. Gk. ἐννέ(Ϝ)α, Skt. *náva*), *bonus* 'good' (< **duenos*, but cf. *bene* 'well', with some apparent vowel harmonizing of *o* to *e*), and *soror* 'sister' (< **suesōr*, cf. Lith. *sesuõ*); also, *volō* 'I wish', which is from the root *vel-* seen in inf. *velle*, subj. *velim*, and in *solvō* 'I detach', derived from **se-luō* 'I loosen from'.

**o* > Lat. *o*: Lat. *domus* 'house', Gk. δόμος, Skt. *dámaḥ*, OCS *domŭ* (< **domH-*);
Lat. *rota* 'wheel', Skt. *ráthaḥ*, Lith. *rãtas*, OHG *rad* (< **HrotH-*);
Lat. *hostis* 'enemy', Goth. *gasts* 'guest', OCS *gostĭ* (< **g^{h}osti-*);
Lat. *porcus* 'pig', OHG *far(a)h*, Lith. *paršas*, MIr. *orc* (< **porko-*).

*h_3e > Lat. *o*: the Latin reflexes of PIE *h_3e are indistinguishable from those of *o.

Lat. *ovis* 'sheep', Gk. ὄ(Ϝ)ις, Hier. Luw. *ḫawi-* 'shepherd' (< *h_3eui-);
Lat. *octō* 'eight', Skt. *aṣṭā(u)*, Gk. ὀκτώ, Goth. *ahtau* (< *h_3ektoh_1);
Lat. *ob* 'against', OCS *obĭ-* 'around', Goth. *bi* 'by' (< *h_2m-b^hi?);
Lat. *oculus* 'eye', Skt. *ákṣi*, Gk. ὄψομαι 'I will see'(< *h_3ek^u-).

Notes

1. Latin *o* becomes *u* before velar *l* ([ɬ]) in closed syllables (but not in the sequence *oll*, since the sequence *ll* is non-velar, as in *velle* 'to wish'). Cf. the doublets *culmen* : *columen* 'column', *stultus* : *stoltus* 'stupid'; also *sulcus* 'furrow' (cf. Gk. ὅλκος).

2. The sequence *vo* in Latin becomes *ve* before *r*, *s*, and a *t* which begins the following syllable: cf. OLat. *vorsus* 'toward', later *versus*, and *voster* 'your', later *vester*. This change dates to the mid second century B.C.E.

3. Latin *o* becomes *u* before *ŋ* and *m*: cf. acc. masc. *hunc* 'this', earlier *honc* (< *hom-ce*), *uncus* 'hook' (< *onk- < *h_2enk-, cf. Gk. ὄγκος); *unguis* 'finger-nail' (< *$h_3ng^{u^h}$-, cf. Gk. ὄνυξ); *umerus* 'shoulder' (< *omesos, cf. Goth. *ams*); *numerus* 'number' (cf. Gk. νόμος). The adjective *longus* 'long' does not follow the expected pattern, nor does *domus* 'house'.

*a > Lat. *a*: Lat. *sāl* 'salt' (for the *ā* see 6.1.2.1.2), Gk. ἅλς, OE *sealt*, OIr. *salann* (< *sal-);
Lat. *capiō* 'I seize', Skt. *kapaṭī* 'two handfuls', OIr. *cúan* 'harbor', Alb. *kap* 'I seize', Goth. *-hafts* 'taken' (< *kap-);
Lat. *(h)ānser* 'goose', Gk. χήν, Skt. *haṁsáḥ*, OHG *gans*, Lith. *žąsìs* (< *g^hans-).

*h_2e > Lat. *a*: the Latin reflexes of *h_2e are indistinguishable from those of *a.
Lat. *ante* 'before', Gk. ἀντί, Hitt. *ḫanti* 'in front' (< *h_2enti);
Lat. *agō* 'I drive', Gk. ἄγω, Skt. *ájāmi*, OIr. *ad-aig* 'X drives to' (< *h_2eg-); Lat. *ad* 'to', Goth. *at* (< *h_2ed?).

*CHC > Lat. CaC: Lat. *pater* 'father', Gk. πατήρ, OIr. *athir*, Skt. *pitā́* (< *$ph_2tēr$);
Lat. *datus* (zero-grade part.) 'given', Gk. δοτός, Skt. (inf.) *dā́tum* 'to give' (< *dh_3-*to*-);
Lat. *status* (zero-grade part.), Gk. στατός, Skt. *sthitá-* (< *sth_2-*to*- 'fixed' from *$steh_2$- 'stand').

6.1.1.2. The semivowels

The PIE vowels **i* and **u* have their source in the semivowels.[1] The PIE semivowels **i/i̯* and **u/u̯* had vocalic (**i*, **u*) and consonantal (**i̯*, **u̯*) realizations in PIE which depended on various morphological and phonological factors. Vowels, for example, arise from zero-grade in ablaut, reflected as i in Lat. *fidēs* 'faith'; cf. *e*-grade *fīdō* (OLat. *feidō*) 'I trust' (**ei*), *o*-grade *foedus* 'agreement' (**oi*). Another major conditioning factor in the distribution of vocalic and consonantal reflexes is the action of "Sievers' Law". In its short form, "Sievers' Law" states that after a long vowel or diphthong followed by a single consonant; or after a short vowel followed by two consonants; or after a single initial consonant, the semivowel is realized as a vowel, namely **i* (less clearly **u*). After a non-initial single consonant or when adjacent to a syllabic (i.e. a liquid, nasal, or vowel) the semivowels are found in their consonantal realization as the glides **i̯* and **u̯*.

**i* > Lat. *i*: Lat. *quis*, *quid* 'who, what', Gk. τίς, Av. *čiš*, Hitt. *kuiš* (< **kʷis*, **kʷid*);
Lat. *alius* 'other' from **alios* < **h₂elios* (cf. Goth. *aljis*); Lat. *vidua* 'widow', Skt. *vidhávā*; Goth. *widuwō*, OCS *vĭdova* (< **h₁uidʰeu-*).

Notes to the Development of *i in Latin

1. When there is no adjacent vowel, PIE **i* becomes Lat. *i* before a consonant: cf. *i-ter* 'road' (< zero-grade **h₁i-ter*), with the full grade evident in *ī-re* 'to go', Gk. εἶ-μι 'I go'(< **h₁ei-*); also Lat. *fidēs* 'faith' < **bʰidʰ-*, with the full grade evident in *fīdō* 'I trust', Gk. πείθω 'I persuade' (< **bʰeidʰ-*).
2. After a consonant, **i* becomes Latin *i*: cf. Lat. *medius* 'middle' from **medʰios* (cf. Goth. *midjis*, Skt. *mádhyaḥ*); *capiō* 'I seize' from < **kap-i-oh₂* (cf. Goth. *hafjan* 'to lift').

**u* > Lat. *u*: Lat. *ruber* 'red', Gk. ἐρυθρός, Skt. *rudhiráḥ*, Lith. *rùdas* 'brown' (< **h₁rudʰ-(ro-)*);
Lat. *iugum* 'yoke', Gk. ζυγόν, Skt. *yugám*, Goth. *juk* (< **Hiugo-*);
Lat. *nurus* 'daughter-in-law', Gk. νυός, Skt. *snuṣā́*, OHG *snur* (< **snusos*).

Notes to the Development of *u in Latin

1. Between consonants, PIE **u* becomes Latin *u*: From the zero-grade **duk-*

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1 It bears repeating here that unless specific phonetic detail is being presented, PIE semivowels are represented in reconstructions by their vocalic variants **i* and **u* throughout this volume.

'lead' comes the root form with short *u* in *ē-duc-āre* 'to bring up'. This contrasts with the *ū* found in *dūcō* 'I lead' (OLat. *doucō*), which is derived from the full grade of the root **deuk-* seen also in Gk. Πολυδεύκης 'Pollux', Goth. *tiuhan* 'to lead'. Similarly, *us-tus* 'burned' (< zero-grade **h₁us-to-*) as opposed to the full-grade realization seen in present tense *ūrō* 'I burn' (< **h₁eus-oh₂*); cf. Gk. εὕω 'I singe', Skt. *óṣati* 'X burns'.

2. After medial *t*, **u* becomes Lat. *u*, as seen in *quattuor* 'four' (< **kʷetuor-*), in contrast with Skt. *catvấraḥ*, Goth. *fidwōr*, Lith. *ketverì*.

3. In the sequences **-oue-* and **-oui-*, the **u* is sometimes lost, perhaps absorbed in the roundness of the *o*, with the outcome *ō*. Thus, *nōnus* 'ninth' (< **h₁neueno-*), cf. Skt. *navamáḥ*, Toch. B *ñunte*, Goth. *niunda*; *mōtus* 'moved' (< **moue-to-s*), cf. pres. *moveō* 'I move', Gk. ἀμεύσασθαι 'to progress', Lith. *máuju* 'I graze, touch against' (< **meuh₂-*). However, in some examples the **u* in either of these sequences results in *ū* (cf. *iūstus* 'just' (OLat. IOVESTOD), *prūdēns* 'prudent' < **pro-uidēns* 'looking forward', or it becomes the second member of a diphthong, as in *pauper* 'poor' < **paui-per-os* 'the one who produces little'; and *naufragium* 'shipwreck' < **nāui-fragium* 'ship-break'.

Note to Latin *i* and *u*

1. Latin *i* becomes *e* and *u* becomes *o* before *r* arising from *s*. The changes of *i* > *e* and *u* > *o* are parallel in that both involve the lowering of a high to a mid vowel in a phonologically identical environment. An example of **i* > *e* is seen in *serō* 'I sow' (< **sisō*); for the change of **u* to *o*, cf. imper. subj. *forem* (< **fusēm*) of *esse* 'to be'. The pattern is violated by *dirimō* 'I separate' (< **dis-emō*) and by *pirum* 'pear' (< **pisom*, cf. Gk. ἄπιον). The fact that at least some vowels before inherited *r*'s are unaffected by this lowering (cf. *vir* 'man' < **uiHros*) suggests the possibility that the change reflects a phonetic difference between inherited *r* and *r* arising via rhotacism until the two eventually merge.

6.1.1.3. Long vowels

**ē* > Lat. *ē*: Lat. *nē* 'not', OIr. *ní*, Goth. *nē*, Ved. *nā* (< **nē*).

The long vowel **ē* in PIE was rare, showing up in a small number of secure cognates, and in the nominative of the suffix **-(t)ēr* (**mātēr* 'mother', **bʰreh₂tēr* 'brother').

**eh₁* > Lat. *ē*: Most instances of Latin *ē* can be traced back to the combination **eh₁*.

Lat. *fēcī* 'I did', Skt. *dadhấu* 'I placed', Gk. ἔθηκα (< **dʰeh₁-*);

OLat. *siēs* 'may you be', Gk. εἴης (optative suffix *-iē-* < **-ieh₁-* < **h₁s-ieh₁-*);

Lat. *sēmen* 'seed', OCS *sěmę*, OIr. *síl*, Lith. *sėmenys* 'linseed', Goth. *manasēþs* 'mankind' (< **seh₁-*).

**ō* > Lat. *ō*: Lat. *vōx* 'voice', Skt. *vāk* (< **uōkᵘ-*, lengthened *o*-grade of **uekᵘ-* 'speak'). As with Lat. *ē*, most instances of *ō* can be traced back to secondary PIE sources **oh₁*, **oh₂*, or **eh₃*).

**oh₁* > Lat. *ō*: Lat. *ambō* 'both', Gk. ἄμφω, Goth. *bai*, Skt. *ubhaú* (< **h₂mbʰoh₁*);
Lat. *sacerdōt-* 'priest', Hitt. *dai-* 'put', Gk. θωμός 'heap' (< **dʰoh₁-*).

**oh₂* > Lat. *ō*: Lat. *ferō* 'I carry', Gk. φέρω, Av. *spasyā* 'I see'.

**eh₃* > Lat. *ō*: Lat. *pōculum* 'drinking cup', Gk. πῶμα 'a drink', Skt. *pāti* 'X drinks' (< **peh₃(i)-*);
Lat. *dōnum* 'gift', Gk. δῶρον, Skt. *dānam*, OIr. *dán* (< **deh₃nom/ deh₃rom*);
Lat. *(g)nōtus* 'known', Gk. γνωτός, Skt. *jñātáḥ*, OIr. *gnāth* (< **gneh₃-to-*).

ā > Lat. *ā*: Lat. *garriō* (< **gāriō*) 'I make noise', Gk. γῆρυς 'voice', OIr. *gáir* 'shout' (< **gār-*);
Lat. *māter* 'mother', Skt. *mātā́*, Gk. μήτηρ, OIr. *máthir*, OHG *muoter* (< **mātēr*).

Given the rarity of **a* overall in PIE, and the uncertainty of the long vowels, it is not surprising to find a general lack of secure cases of **ā* in PIE. Most instances of Lat. *ā* are traceable back to the PIE combination **eh₂*, possibly including **mātēr* (**meh₂tēr?*).

**eh₂* > Lat. *ā*: Lat. *stā-re* 'to stand', OHG *stān*, Gk. (Dor.) ἵστᾱμι 'I stand', OIr. *ad-táu*, *-tó*, 'I am' (< **steh₂-*);
Lat. *fā-tur* 'X speaks', Gk. (Dor.) φᾱτί, Arm. *ban* 'word', OIc. *bōn*, *bøn* 'request' (< **bʰeh₂-*);
Lat. *pāstor* 'shepherd', Hitt. *paḫšzi* 'protects' (< **peh₂-*).

**eh₃* > Lat. *āv* (before a vowel): Lat. *octāvus* 'eighth' < **h₃ekteh₃o-* (cf. *octō*). This derivation is uncertain.

**ī* > Lat. *ī*: the status of PIE **ī* is unclear, and every example of *ī* in the descendant languages can be traced back to a combination of **iH*.

**iH* > Lat. *ī*: Lat. *vīs* 'strength', Gk. ἴς 'muscle' (< **ueiHs*);
Lat. *vīvus* 'alive', Skt. *jīváḥ*, Lith. *gývas* (< **gᵘih₃-uo-*);
Lat. *s-ī-mus* 'we might be', Gk. εἶμεν (< **h₂es-ih₁-*).

**ū* > Lat. *ū*: Lat. *mūs* 'mouse', Gk. μῦς, Skt. *mū́ṣ-*, OHG *mūs* (< **mūs*);
Gk. νῦν 'now', Skt. *nú* (< **nū*).

Examples of **ū* are only slightly less precarious than those of **ī*, and all (including **mūs*) admit of an explanation of short vowel followed by laryngeal, viz. **uH*.

**uH* > Lat. *ū*: Lat. *fūmus* 'smoke', Gk. θῦμός, Skt. *dhūmáḥ*, Lith. *dúmai* (< **dʰuh₂mo-*);
Lat. *sūs* 'pig', Gk. ὗς, Skt. *sūkaráḥ* (< **suH-s*);
OLat. *fūī* 'I was', Gk. ἔ-φῡν (< **bʰuH-*).

6.1.1.4. Diphthongs

**ei* > Lat. (*ei*) > *ī*: Lat. *dīcō* 'I speak' (OLat. *deicō*), Gk. δείκνῡμι 'I point out', Skt. *dídeṣṭi* 'X shows', Goth. *gateihan* 'to proclaim' (< **deik-*);
Lat. *īre* 'to go' (< **ei-se*), 2nd sg. *īs* 'you go', Gk. εἶμι 'I go', Skt. *émi*, Goth. *iddja* 'I went' (< **h₁ei-*);
Lat. *fīdō* 'I trust', Gk. πείθω 'I persuade', Goth. *beidan* 'to wait', Alb. *bē* 'oath' (< **bʰeidʰ-*).

The reflexes of **ei* had merged with those of **iH* to become *ī* by the mid second century B.C.E. PIE **ei* first passed through a diphthongal stage in Latin as *ei* (cf. OLat. *deicō* 'I say', etc.), and may have passed through the stage *ē* before becoming *ī*. Evidence for this change comes from inscriptional spellings such as dat. sg. IOVE for *Iovī* 'to Jupiter'.

**oi* > Lat. (*oi*) > *ū*: Lat. *ūnus* (OLat. OINO) 'one', Goth. *ains*, OIr. *óen*, Gk. οἶνος 'ace' (< **Hoino-*);
Lat. *sūdor* 'sweat', Skt. *svédaḥ*, OHG *sweiz* (< **sueid-/suoid-*);
Lat. *commūnis* 'common' (OLat. COMOINEM), Goth. *gamains*, OIr. *móin* 'valuable', Lith. *maīnas* 'exchange' (< **kom-moino-*).

Note

1. The diphthong **oi* underwent a number of changes before developing ultimately into *ū*. The epigraphical record shows that **oi* was preserved as *oi* in some quarters, as in OINVORSEI 'all together' (= CLat. *ūniversī*) found in the *SC de Bacch.* There is some evidence of a development of **oi* to *ī* when it is preceded by a *w*, as can be seen in Lat. *vīdī* 'I have seen' vs. Gk. (Ϝ)οἶδα 'I know' (if indeed the Latin form continues a PIE *o*-grade and is not some other verbal form), and Lat. *vīcus* 'village' vs. Gk. (Ϝ)οἶκος 'house'. Another change took place in certain words in which **oi* developed into *oe*. Lat. *foedus* 'league' (cf. Gk. πέ-ποιθ-α 'I trust'), *moenia* 'walls' (cf. *mūnire*), *poena* 'punishment' (cf. Gk. ποινή 'penalty', Lat. *pūnire*), the proper names *Poenus* and *Poenulus* (adj. *pūnicus*), and the form FOIDERATEI 'allied' from the *SC de Bacch.* illustrate this development. This change seems to be restricted to official judicial or diplomatic vocabulary and may represent a conscious archaizing tendency in these lexical domains.

**ai* > Lat. (*ai*) > *ae*: Lat. *laevus* 'on the left side', Gk. λαιός, OCS *lěvŭ* (< **laiuo-*);
Lat. *caecus* 'blind', Skt. *kēkaraḥ* 'squinting', OIr. *caech*, Goth. *haihs* 'one-eyed' (< **kai-ko-*).

**$h_2$ei* > Lat. (*ai*) > *ae*: Many instances of Lat. *ae* (*ai*) can be traced back to a laryngeal source, specifically **$h_2$ei*.
Lat. *aedēs* 'building', orig. 'hearth', (cf. OLat. *aidīlis* 'building superintendant'), Gk. αἶθος 'fire', Skt. *édhaḥ*, OHG *eit* 'heat' (< **$h_2$eid^h-*);
Lat. *aes* 'copper' (< **aios*), Skt. *áyas-* 'metal', Goth. *aiz*, OHG *ēr* (< **$h_2$ei(e)s-*).

Note

1. The diphthong **$h_2$ei* developed first into *ai*, a spelling which persisted until the second century B.C.E. The pronunciation of *ae* was moving in the direction of the monophthong *ē* in colloquial Latin from pre-Imperial times, though the diphthongal pronunciation apparently persisted in educated registers at least until the beginning of the Empire in 27 B.C.E.

**eu* and **ou* > Lat. (*ou*) > *ū*: Lat. *ūrō* 'I burn' (< **eusō*), Gk. εὔω 'I singe', Skt. *óṣati* 'X burns', OIc. *usli* 'glowing ashes' (< **$h_1$eus-*);
Lat. *dūcō* (OLat. *doucō*) 'I lead', Gk. Πολυδεύκης 'Pollux', Alb. *nduk* 'I pluck', Goth. *tiuhan* 'to lead' (< **deuk-*);
Lat. *über* 'udder', Gk. οὖθαρ, Skt. *údhar*, OHG *ūtrin* (< **HouHd^{h}er*).

Note

1. The two diphthongs **eu* and **ou* apparently merged at some point in the period of Proto-Italic as **ou* and ultimately monophthongized to *ū* in Classical Latin, though examples with plainly recoverable **ou* are rare and are subject to certain secondary modifications. Troublesome is the *ī* of Lat. *līber* 'free', which on comparative grounds (Osc. *loufir*, Falisc. **loferta**), must be taken back to **ou*.

**au* > Lat. *au*: Lat. *caulis* 'stalk', Gk. καυλός, MIr. *cuaille* 'arrow', Lith. *káulas* 'bone'.
Lat. *paucus* 'few', Goth. *fawai*, Gk. παῦρος 'small' (< **pau-*);

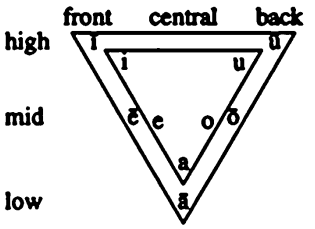
**$h_2$eu* > Lat. *au*: Many instances of Lat. *au* can be traced to a laryngeal source, specifically **$h_2$eu*.
Lat. *augeō* 'I increase', Gk. αὔξω (with *-s-*enlargement from the desiderative *-s-*), Skt. *ójas-* 'strength', Goth. *aukan* 'to increase oneself' (< **$h_2$eug-*);

Lat. *auris* 'ear' (*auscultō* 'I listen attentively'), Goth. *ausō*, OIr. *áu*, Lith. *ausìs* (< *h_2eus-).

There was a tendency in colloquial Latin to pronounce *au* as *ō*, as evidenced by the forms *Clōdius* (for *Claudius*), *lōtus* 'washed' (for *lautus*), and others.

6.1.2. The Latin vowel system

The Latin vowel system is shown in figure 6.1.[2]



Diphthongs: *ae* (< *ai*), *au*, *oe* (rare, < *oi*); *ei*, *ui* (rare), and *eu* (rare)

Figure 6.1 The Classical Latin vowel system

Notes to the vowel chart

1. Latin preserved contrastive vowel length, seen in the following minimal pairs: *es* 'you are', *ēs* 'you eat'; *levis* 'light', *lēvis* 'smooth'; *latus* 'side, flank', *lātus* 'carried'; *populus* 'people', *pōpulus* 'poplar tree'; and 4th declension nom. and voc. sg./pl. pairs such as *fructus/fructūs* 'fruit/fruits'. Vowel length in Latin is a function of moraic structure: short vowels are composed of one mora [μ], while long vowels and diphthongs are composed of two morae [μμ]. The length distinction inherited from PIE was a declining category from the earliest periods of the language and generally had a low functional yield, characterizing relatively few word pairs. Numerous phonological and prosodic processes were at work which reduced vocalic length in Latin under specified phonetic conditions, and its phonemic status was eliminated by the fifth century C.E. For theoretical discussion see Mester (1994).

2. Figure 6.1 attempts to reflect phonetic reality as much as is possible in the spacing of segments.[3] Most likely there were distinctions of quality as well as quantity in the long-short vowel pairs, judging, among other things, from orthographic substitutions in late inscriptions as well as their different outcomes in the Romance

2 See further Sturtevant (1940), Niedermann (1953), and Allen (1978). For a discussion of the sources of information on the pronunciation and value of the Latin sounds, see Kent (1932: 43–44).

3 There has been speculation going as far back to Quintilian (*Inst.* 1.4.8) that Latin had yet another vowel, front and rounded ([ü]), which was intermediate between *i* and *u*. The evidence is inconclusive on this point. See Sturtevant (1940: 119–122) and Allen (1978: 56–59) for discussion, and below.

languages. Short vowels (except *a*) were generally more lax, and were nearer to each other in articulatory space than their long counterparts. They form a non-peripheral group. The long vowel system was more spread out, and the individual vowels (except *ā*) had a generally tenser articulation. They form a peripheral group.

3. Of the front short vowels *e* and *i*, *e* was more open. Furthermore, the tense *ē* was closer to *ĭ* than it was to *ĕ*, so that by Late Latin, mergers involving *i/e* and *i/ē* are becoming common. There are many examples in the late inscriptional record (generally 3rd century C.E. and later) of substitutions involving *i/e* and *i/ē* (cf. CARMENA for *carmina* 'songs', MENVS for *minus* 'less', FICIT for *fēcit* 'X did', and RIGNA for *rēgna* 'rule'). As this system developed into the later spoken idiom which served as the basis of the Romance languages, *i* and *ē* merged into [ẹ].

4. Exchanges between the back vowels *o* and *u* indicate a distribution similar to that found with the front vowels *i* and *e*: cf. inscriptional errors like COM for *cum* 'with', CANONT for *canunt* 'they sing'. Like *i* and *ē*, *u* and *ō* were also frequently confused: cf. FLVS for *flōs* 'flower', NEPVS for *nepōs* 'nephew', and many others. Eventually, *u* and *ō* merged into [ọ] in the spoken language.

5. The vowel *a* was the lowest vowel in the system and shows no systematic interchanges in the inscriptional record with any other vowel. Eventually, *a* and *ā* merged into *a* in later spoken Latin.

6. There is strong evidence that Latin was monophthongizing diphthongs at the earliest period, a tendency which continued into later Latin: cf. OLat. *oi* > *ū* (*oinom* > *ūnum* 'one') and OLat. *ei* > *ī* (*deicō* > *dīcō* 'I say'). Of the original diphthongs which survived into the classical period, *ae* (from earlier *ai*) had changed to [ẹ] by about the fourth century C.E.; *au* remained generally unchanged (cf. *auris* 'ear'), though in some regions and social registers it passed to *ō* (cf. *plaustrum* beside *plōstrum* 'cart'); *eu* and *ui* occurred in a relatively small number of forms, e.g. *neu* 'and not', *seu* 'or if', *cui* 'to whom' and *hui* 'ha', and in a few loans like *euge* 'bravo'.

6.1.2.1. Vocalic changes according to syllable location

The phonological patterning of inherited vowels and diphthongs (as well as semivowels and resonants) in Latin is generally sensitive to syllable structure and location in the word. The principal descriptive criteria are whether the syllable is open or closed, its location within the word (initial, medial, or final), and its weight (light or heavy). It is worth noting that open syllables are those ending in a vowel (*pō-tus*, *cau-sae*, *me-a*), while closed syllables are those ending in a consonant (*pec-tus*, *cōn-fec-tus*). Light syllables are those containing a short vowel and an optional preceding consonant, i.e. (c)v̆. All other syllables are heavy, i.e. those in which a consonant is followed by a long vowel (cv̄), a short vowel followed by a consonant (cv̆c), or a long vowel followed by a consonant (cv̄c). A single consonant always belongs to the following syllable (i.e. *pō-tus*, not *pōt-us*); consonantal groups are divided between syllables (i.e. *cōn-fec-tus*, not *cōnf-ec-tus* or *cōn-fect-us*; *cōn-strict-us*, not *cōns-trictus* or *cōnst-rictus*, etc.); and the combination stop + resonant word-medi-

ally is grouped with the following syllable, so that a preceding syllable containing a short vowel is light (i.e. *té-ne-brae*, not *te-néb-rae*). Because of the extensive role played by the Latin accent in the history of the vocalic system, especially in medial syllables, some of the issues discussed here are reopened below. Only those changes which affect the quality (as opposed to the quantity) of short vowels are discussed in what follows. Changes in quantity, both of short and long vowels, are treated separately.

6.1.2.1.1. Short vowels

Initial syllables

In general, inherited short vowels in Latin are preserved in initial syllables, whether open or closed, regardless of their history in PIE. Their stability is probably due to the location of the Latin pre-literary accent on the first syllable.

a Lat. *agō* 'I drive', Gk. ἄγω, Skt. *ájāmi*, OIc. *aka* 'to drive' (< **h₂eg-*);
Lat. *axis* 'axle', Gk. ἄξων, Lith. *ašìs*, OHG *ahsa* (< **h₂eks-*);
Lat. *pater* 'father', Gk. πατήρ, Skt. *pitā́* (< **ph₂tḗr*);
Lat. *datus* 'given', Gk. δοτός, Skt. (inf.) *dā́tum* 'to give' (< **dh₃-to-*, zero-grade of **deh₃-*).

e Lat. *est* 'X is', Gk. ἐστί, Skt. *ásti*, Goth. *ist* (< **h₁es-*);
Lat. *edō* 'I eat', Skt. *ádmi*, Gk. ἔδομαι 'I will eat', Goth. *itan* 'to eat' (< **h₁ed-*);
Lat. *ego* 'I', Hitt. *uk*, Skt. *ahám*, Gk. ἐγώ (< **h₁egoH*/*h₁egHom*).

i Lat. *vidua* 'widow', Skt. *vidhávā*, Goth. *widuwō*, OCS *vĭdova* (< **h₁uidʰeu-*);
Lat. *quis*, *quid* 'who, what', Gk. τίς, Av. *čiš*, Hitt. *kuiš* (< **kʷis*, **kʷid*);
Lat. *ovis* 'sheep', Gk. ὄ(Ϝ)ις, Skt. *áviḥ*, Hier. Luw. *ḫawi-* (< **h₃eui-*).

o Lat. *porcus* 'pig', OHG *far(a)h*, Lith. *paršas*, MIr. *orc* (< **porko-*);
Lat. *nox* 'night', Gk. νύξ, Goth. *nahts*, Skt. (acc.) *náktam* 'by night' (< **nokʷt-*);
Lat. *orbus* 'orphan', Gk. ὀρφανός, Goth. *arbi* 'heir', OIr. *orbe* (< **h₃orbʰo-*).

u Lat. *iugum* 'yoke', Gk. ζυγόν, Skt. *yugám*, Goth. *juk* (< **Hiugo-*). The **Hi-* is uncertain, as Gk. ζ may be of foreign origin;
Lat. *ruber* 'red', Gk. ἐρυθρός, Skt. *rudhiráḥ*, Lith. *rùdas* 'brown' (< **h₁rudʰ-(ro-)*);
Lat. *nurus* 'daughter-in-law', Gk. νυός, Skt. *snuṣā́*, OHG *snur* (< **snuso-*).

Medial syllables

Open syllables. Basically, and with the exceptions noted below, Latin short vowels in open medial syllables are "weakened" to *i*. This "weakening" is actually a change in which vowels become more constricted and raised, with *i* being the highest and closest vowel in the system. Other changes of unstressed medial vowels are discussed below.

a > *i* *adigō* 'I drive to' < **ad-agō* (cf. *agō*);
cōnfiteor 'I confess' < **con-fateor* (cf. *fateor*);
irritus 'invalid' < **in-ratus* (cf. *ratus*).

e > *i* *dīrigō* 'I arrange' < **dis-regō* (cf. *regō*);
obsideō 'I sit near' < **ob-sedeō* (cf. *sedeō*);
colligō 'I gather' < **con-legō* (cf. *legō*).

o > *i* *hominis* 'of the man' (gen.) < **homon-es/homen-es* (cf. *homō*);
īlicō 'in that place' < **in-(st)locō* (cf. *locus*);
novitās 'newness' < **novo-tās* (cf. OLat. *novos*, later *novus*).

u > *i* *capitis* 'of the head' (gen.) < **caput-is* (cf. nom. *caput*);
manica 'sleeve of a tunic' < **manu-ca* (cf. *manus*);
corniger 'horned' < **cornu-ger* (cf. *cornū*, root *cornu-*).

i > *i* *praevideō* 'I foresee' (cf. *videō*);
colligō 'I gather together' (cf. *ligō*);
comminuō 'I diminish' (cf. *minuō*).

Notes

1. The rule of vowel weakening has many counterexamples which are not explained by alternate phonetic developments. For example, while all compounds of the verb *rapiō* 'I seize' undergo weakening (*abripiō*, *corripiō*, *dēripiō*, etc.), compounds of many others never undergo the process (e.g. *maneō* 'I remain', but *immaneō* and *permaneō*). Still others show an uneven distribution of weakening with some prefixed forms and not with others (cf. *habeō* 'I have', with both *posthabeō* and *cohibeō*). The change strongly favors the vowels *a* and *e* (*i* simply remains), especially in the morphophonemic verbal compound constructions, with most back-vowel candidates such as compounds of *volō* 'I fly' or *fugiō* 'I flee' not participating. The few uncontroversial examples of *o* and *u* becoming *i* which do occur are outside the system of verbal derivation and could reasonably be dismissed as historical relics. The rule of vowel weakening, then, is actually a rule affecting non-back vowels. This skewed distribution, of which there are many more examples, is discussed by Janson (1979: 46–59), who argues that a number of intersect-

ing chronological, phonological, lexical, and perceptual factors conspired to make the "rule" of vowel weakening anything but a single process. Basically, most of the exceptions to the rule can be explained as either recent formations or analogical constructions, created after the weakening rule had ceased to operate, or as a result of lexical diffusion, in which the rule ceased to operate before all candidates were affected.

2. Unstressed medial vowels in open syllables before labial consonants (*b*, *f*, and *m*) occur as either *i* or *u*, depending, in part, on the vowel which follows the labial. This apparent "harmonizing" of the vowels such that *i* occurs when the following vowel is non-back (*i*, *e*, *a*) and that *u* occurs when the following vowel is back (*o* and *u*) is evident in the following examples.

a *incipiō* 'I begin' < **in-cap-i̯i̯ō*, but *occupō* < **ob-cap-ō* (cf. *capiō*);

e *decuma* 'a tenth' < **decem-a* (cf. *decem*) but *eximius* 'excepted' < **ex-em-i̯i̯o-* (cf. *emō*).

Additionally, there is a significant number of alternating forms in which either *i* or *u* is possible, without obvious pattern. Among these are *lubet/libet* 'it pleases', *intumus/intimus* 'innermost', *aurufex/aurifex* 'goldsmith', *optumus/optimus* 'best', and many others, including the 1st pl. forms *possumus* 'we are able' and *volumus* 'we are willing' vs. *ferimus* 'we carry' and *legimus* 'we gather'. Quintilian (*Inst.* 1.4.8), attributed the fluctuation between *i* and *u* to the fact that the actual pronunciation was somewhat midway between the two, namely [ü] (n. 3). However, it is better to see the fluctuation in these vowels as reflecting inconsistent orthography and regionally or socially determined variation.

3. Short vowels > *e* before *r*. Examples are *cinis* 'ashes', but genitive *cineris*; *Faleriī* 'the town Falerii' but *Faliscus* 'Faliscan'; *dare* 'to give', but *reddere* 'to give back'; and *onerāre* 'to burden' < **ones-āre* (cf. *onus* < **onos*).

4. Short vowels are assimilated to the labiality of a following *w*, changing to *u*. Examples are: *abluō* 'I wash'< **ab-lavō* (cf. *lavō*), *monuī* 'I warned' (perf. of *moneō*) < **mone-uai*, and *dēnuō* 'anew' **dē-novōd*.

5. Before *l*, short vowels > either *i* or *u*, depending on the palatal (*i*) or velar (*u*) quality of the *l*. Examples are: *īnsiliō* 'I jump in' < **in-saliō* (cf. *saliō*), but *exulō* 'I am an exile' < **ex-alō* (cf. *alō*); *Sicilia* 'Sicily' (cf. Gk. Σικελίᾱ), but *Siculus* 'Sicilian' (cf. Gk. Σικελός); *familia* 'family', but *famulus* 'servant'; *Catilīna* 'Catiline', but *catulus* 'a young dog'; and *sēdulō* 'conscientiously' < **sēd dolōd*.

Closed syllables. The short vowels *a* and *o* in medial closed syllables both underwent raising, to *e* and *u* respectively, while the other short vowels remained unchanged in this position.

a > *e* *arceō* 'I prevent' vs. *coerceō* 'I enclose', *tractō* 'I drag along' vs. *dētrectō* 'I decline', *scandō* 'I climb' vs. *ascendō* 'I climb', and *carpō* 'I pluck' vs. *discerpō* 'I pluck to pieces'.

Notes

1. As in initial syllables, there is a further raising of *a* to *i* before [ŋ]: cf. *attingō* 'I touch' (*tangō*), *effringō* 'I break open' (*frangō*).
2. As with open medial syllables, there is a change of *a/e* to *u* before [ɬ]: cf. *calcō* 'I tread upon' vs. *inculcō* 'I trample in', and *salsus* 'salted' vs. *īnsulsus* 'unsalted'.

o > *u* *amp(h)ora* 'a type of jar' (Gk. (Hom.) ἀμφιφορεύς) vs. *ampulla* 'flask' (diminutive of *amp(h)ora*); (acc.) *montem* 'mountain' vs. *prōmuntorium* 'promontory'; *secundus* 'following' < **sekʷondos* (*sequor*).

Note

1. *i*, *e*, and *u* remain: *discō* 'I study': *dēdiscō* 'I forget'; *firmus* 'solid': *īnfirmus* 'weak'; *sentiō* 'I feel': *cōnsentiō* 'I agree'; *servus* 'slave': *cōnservus* 'fellow slave'; *fundō* 'I pour': *effundō* 'I pour out'; and *curvus* 'bent': *recurvus* 'bent backward'.

Syncope of short vowels in medial syllables. Syncope, the complete loss of a medial vowel, is the final step in the vowel-weakening process. Under certain phonetic conditions, mostly involving patterning of open light and heavy syllables,[4] short medial vowels were completely lost, with concomitant loss of the syllable in which the syncopated vowel was located. It is probably the case that vowels (other than *i*) which were subject to syncope passed through the weakened stage of *i* before disappearing. Syncope is a "fast speech" phenomenon, i.e. a phonological process which takes place under normal conditions of unmonitored colloquial style but does not do so with complete regularity. It is a phonostylistic parameter with prosodic relevance, one which results in syllable loss. As with vowel weakening to *i* and *e*, the initial conditioning factor for syncope was the pre-literary Latin stress accent on the first syllable, which produced a number of syncopated forms from the early literary period. Among them are *calidus* : *caldus* 'warm', *porrigō* : *porgō* 'I stretch out', *oculus* : *oclus* 'eye', *positus* : *postus* 'placed' (perf. part. of *pōnō* < **pos(i)nō*), and *solidus* : *soldus* 'dense'. Other clear examples of syncope are variant forms of a root in different phonological environments, such as *opifex* 'artisan' : *officīna* 'workshop', or *posterus* 'following' : *poṣtrīdiē* 'on the next day'. Further evidence from Late Latin and the Romance languages indicates that certain suffixes such as *-b(u)lum* had alternating pronunciations, one with the vowel and one without, indicating that syncope continued to take place during the period of the three-syllable accent rule as well.

The principal environments under which syncope took place in medial syllables are the following:

1. In penultimate open syllables, a short vowel is deleted when it is preceded by a heavy syllable, namely long vowel + resonant (*corōlla* 'little crown' < **corōn(a)*-

4 Examples of syncope in closed medial syllables are questionable and are not included in this account.

la); diphthong + resonant (*ūllus* 'any' < **oin(o)-los*); and short vowel + two consonants (*surgō* 'I rise up' < **sur-r(e)gō*).

2. After *v*, an unstressed short *i* is deleted in words of three or more syllables: cf. *claudō* 'I close' < **clāvi-dō*, *prūdēns* 'prudent' < **pro-vidēns*, *gaudēre* 'to rejoice' < **gavid-ēre*, and *audēre* 'to dare' < **avidēre*.

3. Short vowels in penultimate post-accentual syllables are lost in words of four or more syllables in which the final three syllables are short: cf. *ampulla* 'flask' < **ampór(a)-la*, *fēmella* 'young woman' < **fēmín(a)-la*, and *porcellus* 'little pig' , **porcél(o)-los*.

4. Short vowels are lost in the second or third syllable of words with four or more syllables, of which the first three are short, depending on the placement of the accent. Thus, *officīna* 'workshop' < **op(i)fícīna*, and *iūniōrēs* 'younger ones' < **iuv(e)n-ĭōsēs*, in which the second vowel is lost; and *satullus* 'satisfied' < **satúr-(o)-los* < **satús-(o)-los* and *vitellus* 'little calf' < **vitél(o)-los*, in which the third vowel is dropped.

Mester (1994: 38) has pointed out that many of the examples of syncope, at least those in Early Latin (but in the period of the three-syllable rule), occur in post-tonic position in which a light penult is "trapped" between a heavy antepenult and a heavy final, creating a non-preferred syllable pattern which is "corrected" through syncopation of the offending syllable (i.e. σ̆ σ̆ σ̄ → σ̆ σ̄). See also Devine—Stephens (1980).

Final syllables

Short vowels in final syllables are subject to a number of modifications, not all of them completely predictable from phonological structure. Because of their morphological role in inflectional endings, final vowels are occasionally preserved, especially in open syllables. At other times they change in quality, and in still others they are lost altogether.

Open syllables.

1. The vowels *e* and *a* are maintained. For *e*, cf. vocatives such as *domine* 'O master' or *eque* 'O horse'; inherited *e*'s in the pronominals *ille*, *iste*; and indeclinables such as *inde* 'from there' and *deinde* (*dein*) 'from that place'. For *a*, cf. inherited plurals such as *genera* 'kinds' and *templa* 'temples', as well as in indeclinables such as *ita* 'thus'.

2. The inherited vowel *i* (i.e. the vocalic outcome of **i̯/ī*) sometimes disappears in final open syllable position, as in the primary verbal endings **-mi*, **-si*, and **-ti* (cf. Lat. *sum*, *es*, *est* 'I am, you are, X is' vs. Skt. *ásmi*, *ási*, *ásti*), as well as in *post* 'after' < **posti* (< **pos-ti*), and in imper. *fac* 'do' < **faci*. It otherwise assumes the quality of an *e*, as in *mare* 'sea' (cf. nom., acc. pl. *mari-a*); nom., acc. sg. neut. *lēne* 'soft' (cf. masc., fem. *lēnis*); and *ante* 'before' (cf. Gk. ἀντί 'before', Hitt. *ḫanti* 'front').

3. The vowels *u* and *o* are somewhat problematic, without convincingly strong

examples in this position. One good candidate might be the 2nd sg. imperative passive/deponent ending *-re* (cf. Gk. -σο); note the occasional early attestation of forms such as VTARVS 'you (sg.) might use', in which the final **-so* was extended to **-sos* prior to the change of final **-o* to **-e*. Other apparent examples of original final *o* such as *cito* 'swiftly' and *modo* 'only' are actually from inherited *ō*'s (*citō*, *modō*) reduced by iambic shortening, which shortens a long vowel in the second syllable of two syllable words when the first vowel is short (see below).

Closed syllables.

1. The vowels *a* and *o* develop in the same way as in closed medial syllables in passing to *e* and *u* respectively. For *a*, the examples *rēmex* 'oarsman' < **rēm-ag-s*, *auceps* 'bird-catcher' < **avi-cap-s*, and *aurifex* 'goldsmith' < **auro-fac-s* are illustrative. Apparent exceptions such as *anas* 'duck' (with assimilation of the expected vowel *i* in the second syllable; cf. *alacer* 'quick' for expected **alicer*) have alternative explanations.

For *o*, the familiar type seen in *servus* 'son' : OLat. SERVOS; *dōnum* 'gift' : OLat. DONOM; and *dedērunt* 'they gave' : OLat. DEDERONT show the passage to *u*. Such older forms in *o*, which is common especially after **u*, are well represented in the early language: cf. *equos* 'horse', *mortuos* 'dead', *vīvos* 'living', etc.

2. The vowels *i* and *u* are generally maintained in closed final syllables. For *i*, cf. *ēnsis* 'sword', *dulcis* 'sweet', *ovis* 'sheep', and *agilis* 'agile'. However, *i* disappears between dental consonants, as can be seen by comparing Lat. *mors* 'death' (< **mortis*) with Skt. *mṛtíḥ* 'death', or Lat. *mēns* (< **mentis*) with Skt. *matíḥ*. There is also an occasional change of *i* to *e*, as seen in *iūdex*, *iūdicis* 'judge' < **ious-dik-s*, and *index*, *indicis* 'pointer' < **in-dik-s*. These latter two are perhaps to be explained by an analogy (postdating vowel weakening) to *-fex*, *-ficis* 'one who makes' < **-fac-*.

For *u*, the situation is more stable. This can be seen from such examples as *turtur* 'turtle', *manus* 'hand', and *fructus* 'fruit', all with *u* preserved in a closed final syllable.

3. The vowel *e* is also generally preserved in final closed syllables, though there are some exceptions. The normal case can be seen in *flūmen* 'river', *decem* 'ten', and *haruspex* 'soothsayer' (gen. *haruspicis*). The vowel *e* passes to *i* before a single consonant, as in *fēcit* 'X did' (recorded as FECED on the Duenos vase inscription) and gen. sg. *ordinis* 'order' < **ordines*; *salūtis* 'health' < **salūtes*.

6.1.2.1.2. Lengthening of short vowels

Though the overall tendency of the language was in the direction of eliminating the distinction between long and short vowels, there remain nevertheless several productive processes in Latin whereby short vowels are lengthened. Most of these fall under the category of "compensatory lengthening", i.e. the lengthening of a segment after the disappearance of a following segment, though some depend on other

factors. Among the most notable lengthening processes in Latin are the following.

1. Latin has a minimal requirement of two morae per word (except for enclitics), which excludes forms like ***re* 'thing' (abl.) and ***da* 'give' (imper.) in (light) open syllables but permits such forms as *is* 'he' and *id* 'it' in (heavy) closed syllables. This structural principle may be responsible for certain long vowels in Latin where comparative data suggest the possibility of a short one, as in *tū* 'you' and *prō* 'in front of' opposite Gk. σύ, and πρό; cf. also *ē/ex* 'out of', *ā/ab* 'away from'.

2. Before *-r* and *-l*, there is lengthening in the nom. of forms such as *sāl* 'salt' (gen. *salis*), *Lār* 'a household deity' (pl. *Larēs*), and *pār* 'equal' (gen. *paris*). This change is not completely regular, however: cf. *vel* 'even, actually'.

3. Short vowels are lengthened before *ns*, *nx*, *nf*, and *nct*, seen in *cōnsul* 'consul' (cf. *con-*), *īnfrā* 'below' (cf. *in*), *iūnxī* 'I have joined', and *iūnctus* 'joined' (cf. *iungō*). This lengthening is most likely part of the same general process of lengthening before an etymological nasal followed by *s*, with the nasal disappearing and the vowel undergoing compensatory lengthening, since it is known that nasals in certain positions were weakly sounded and subject to elimination: cf. *cōsul* for *cōnsul* 'consul', *cēsor* for *cēnsor* 'censor', and accusative plurals like *virōs* 'men' < **virons*, *cīvīs* 'citizens' < **cīv-ins*, and so forth. It is also consistent with the non-application of iambic shortening in "superheavy" syllables as seen in participial *amāns* 'loving', etc.

4. Before a voiced consonant, *s* disappears and the preceding vowel is lengthened by the same type of compensatory process as that discussed in 3: cf. *īdem* 'same' < **is-dem*, *sīdō* 'I sit down' < **si-sd-ō*, and *pōnō* 'I place' < **po-s(i)n-ō*.

5. Some long vowels in Latin result from a variety of contractions.

   a. When two identical short vowels come together, the result is a single long vowel: cf. **ee* > *ē* as in *cīvēs* 'citizens' < **cīve(i)es*; **oo* > *ō* as in *cōpia* 'plenty' < **co-opia*; **ii* > *ī* as in *nīl* 'nothing' < *nihil*.

   b. Dissimilar short vowels contract in various ways. Generally speaking, the resulting long vowel will have the same quality as the first member of the pair. This can be seen in an example such as *cōgō* 'I force' (< **co-agō*).

   c. The contraction of two dissimilar vowels, of which one is short and the other is long, generally results in a long vowel of the same quality as the original long: cf. *dēgō* 'I pass time' (< **dē-agō*); and *mālō* 'I prefer' (< **mā-(v)olō*).

   d. When two inherited long vowels come together, the first is shortened by the general process of shortening before a long vowel, and the resulting short + long combination follows the tendency to show the long member of the pair: cf. *amō* 'I love' (< **ama-ō* < **amā-ō*; *amēs* 'you (sg.) might love' (< **ama-ēs* < **amā-ēs*).

6. One of the most important cases of vowel lengthening is known as "Lachmann's Law". Because of its methodological significance and its persistence in the literature, this "Law" (henceforth LL) will be discussed in detail.

Lachmann's Law

LL has been a constant source of attraction since it was first described by Karl Lachmann in his commentary on the *De Rerum Natura* of Lucretius (1850).[5] The principal basis which prompted Lachmann to formulate his "Law" is the following section from Aulus Gellius, *N A* 9.6.

> *Ab eo quod est 'ago' et 'egi', verba sunt quae appellant grammatici 'frequentativa', 'actito' et 'actitavi'. Haec quosdam non sane indoctos viros audio ita pronuntiare, ut primam in his litteram corripiant, rationemque dicunt, quoniam in verbo principali, quod est 'ago', prima littera breviter pronuntiatur. Cur igitur ab eo quod est 'edo' et 'ungo', in quibus verbis prima littera breviter dicitur, 'esito' et 'unctito', quae sunt eorum frequentativa, prima littera longa promimus et contra 'dictito', ab eo verbo quod est 'dico', correpte dicimus? Num ergo potius 'actito' et 'actitavi' producenda sunt? Quoniam frequentativa ferme omnia eodem modo in prima syllaba dicuntur, quo participia praeteriti temporis ex his verbis unde ea profecta sunt in eadem syllaba pronuntiantur, sicuti 'lego lectus' facit 'lectito'; 'ungo unctus', 'unctito'; 'scribo scriptus', 'scriptito'; 'moveo motus', 'motito'... Sic igitur 'actito' producte in prima syllaba pronuntiandum, quoniam ex eo fit quod est 'ago' et 'actus'.*
>
> 'From *ago* and *egi* are derived the verbs *actito* and *actitavi*, which the grammarians call frequentatives. These verbs I have heard some men, and those not without learning, pronounce with a shortening of the first syllable, and give as their reason that the first letter of the primitive *ago* is pronounced short. Why then do we make the first vowel long in the frequentative forms *ēsito* and *ūnctito*, which are derived from *edo* and *ungo*, in which the first letter is short; and, on the contrary, pronounce the first vowel short in *dictito* from *dīco*? Accordingly, should not *actito* and *actitavi* rather be lengthened? For the first syllable in almost all frequentatives is pronounced in the same way as the same syllable of the past participle of the verbs from which they are formed: for example, *lego lēctus* makes *lēctito*; *ungo ūnctus*, *ūnctito*; *scrībo scrīptus scrīptito*; *moveo mōtus mōtito*. ... So then *āctito* should be pronounced with the first syllable long, since it is from *ago* and *āctus*.'

As traditionally formulated, LL refers to the lengthening of the nuclear vowel in the past participle of verbs which end in a voiced stop. Lachmann put it as follows: "ubi in praesente media est, participia producuntur" ['when there is a voiced stop in the present, the participle is lengthened']. In Lachmann's view, and that of many after him, the different behavior of the root vowel of the complex *faciō* : *factus* vs. *regō* : *rēctus* has to do with the fact that at some point in the history of Latin, vowels

5 Alternative accounts based on the glottalic model can be found in Kortlandt (1989), Baldi (1991).

were lengthened before clusters of inherited voiced stop followed by voiceless stop. In the case of the participial form, this combination is manifested as *d* + *-to-* or as *g* + *-to-*.[6]

V̄ : V̄ (pres.)	V̄ (part.)			V̄ : V (pres.)	V (part.)	
faciō	factus	'do'	vs.	regō	rēctus	'rule'
plectō	plexus	'plait'	vs.	edō	ēsus	'eat'
capiō	captus	'take'	vs.	—	—	
fodiō	fossus	'dig'	vs.	fundō	fūsus	'pour'
trahō	tractus	'drag'	vs.	agō	āctus	'lead'

Following Kiparsky (1965) and King (1969) after him, LL can be described in terms of the ordered application of the following two phonological rules.

(1) $[-\text{cons}] \rightarrow [+\text{long}] \; /__ \; \begin{bmatrix}+\text{obst}\\+\text{vce}\end{bmatrix}\begin{bmatrix}+\text{obst}\\-\text{vce}\end{bmatrix}$

(2) $[+\text{obst}] \rightarrow [\alpha\text{vce}] \; /__ \; \begin{bmatrix}+\text{obst}\\\alpha\text{vce}\end{bmatrix}$

By these two rules, the short vowel followed by the sequence of voiced stop + *-to-* becomes a long vowel, and then the final consonant of the root is assimilated to the voicelessness of the first consonant of the participial ending *-to-*.

	(1)	(2)
faciō	*factus*	—
regō	*rēgtus*	*rēctus*

This analysis is based on the statement of a phonetic process, not a morphological or grammatical one. However, such a solution does not exclude such cases as *rēmex*, *rēmigis* 'oarsman' or *grex*, *gregis* 'herd', both of which should have long vowels in the nominative (**rēmēx*, **grēx*) if the rule is blindly phonetic. For such cases some morphological conditioning (here in the form of a word boundary) is required.

An implicit assumption in the phonetic solution is that LL is a synchronic mor-

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6 There are no LL examples with *b*, which is itself an interesting break in the distribution. The gap is usually ascribed to the absence or rarity of traditionally reconstructed **b* in PIE and its predictable absence in potential Lachmann cases. Of the examples which are even closely relevant, *scrībō* 'I write', part. *scrīptus*, is outside LL because of the long root vowel (which is of unclear origin). A few forms like *sorbeō* 'I suck up' and *glubeō* 'I split' have alternative present forms *sorbō* and *glubō*, for which no participles are attested (**sōrptus*, **glūptus*?). Likewise, the form *scabō* 'I scratch' has no attested participle (**scāptus*?).

phophonemic rule of Latin. This cannot be the case, however, since Latin appears to have no generalizable rule for lengthening vowels before voiced consonants. In fact, apart from a few prefixal constructions such as *attineō* 'I obtain' (< *ad* + *teneō*) and *offerō* 'I present' (< *ob* + *ferō*), and the evidence of compensatory lengthening in forms like *dīgerō* 'I separate' < **diz-gerō* and *dīnumerō* 'I count out'< **diz-numerō*, the examples provided by LL are the primary source of evidence for such a lengthening, evidence which is contravened by pairs like *ā/ab* 'away' and *ē/ex* 'out of' (< **h₁eg*^{h}*s*). And though phonotactic restrictions make the quantity of the initial vowels in such forms as *attineō* and *offerō* uncertain, there is no incontrovertible evidence to suggest that they were ever long. Furthermore, it can be easily shown that only those forms which ended in a traditionally reconstructed plain voiced stop in PIE exhibit the Lachmann effect, regardless of what they might be in Latin. This eliminates not only roots ending in voiceless stops (*capiō* 'I take', *plectō* 'I plait', *faciō* 'I do', all of which can be taken back to a PIE voiceless stop), but also roots which, though they may end in *d* or *g* in Latin, are reconstructed with voiced aspirates, e.g. *fodiō* 'I dig', part. *fossus* (< **d*^{h}) and *trahō* 'I drag', part. *tractus* (< **g*^{h}). These facts alone show that LL is not a synchronic rule of Latin phonology but is, rather, a historical process whose specification must be in terms of the reconstructed system of PIE or Proto-Latin.

There are further exceptions to LL.

If *videō*, *vīsus* 'see', why *sedeō*, *sessus* 'sit'?
If *fundō*, *fūsus* 'pour', why *findō*, *fissus* 'split'?
If *pangō*, *pāctus* 'fix', why *fingō*, *fictus* 'shape'?

To account for the exceptions, analogical/grammatical solutions have been proposed. Though there are suggestions of an analogical solution well back in the nineteenth century (see Collinge (1975) and Strunk (1976) for a full review of the literature), the analogical argument is best represented by Kuryłowicz (1968) and Watkins (1970).[7] In diagrammatic form, it runs as follows:

pres. act.	⇒	perf. act.
⇓		⇓
pres. pass.	⇒	perf. pass.

In this display, the fundamental members of the opposition with the short vowel are on the left, and the derived forms with the long vowel are on the right. The perfect active and passive are serviced by a morphological transformation, as for example:

7 There are some differences between Kuryłowicz's and Watkins's solutions. Chief among them is the fact that Kuryłowicz maintains some phonetic conditioning in LL, whereas Watkins contends (1970: 64) "... that no phonetic conditioning whatsoever is involved in Lachmann's Law".

legit	⇒	lēgit
⇓		⇓
legitur	⇒	lēctus est

With this basic scheme, which provides for the analogical transformation of the forms on the right, the bulk of the LL data are accounted for. For Watkins, LL can be generalized as follows: "The 'law' simply states that at a certain period in the prehistory of Latin, the morphological expression of the perfect passive assumed an accessory mark of vocalic length, there where that same vocalic length served as the distinctive mark of the perfect active" (1970: 64).

Pres.	Perf.	Perf. pass.	
leg-	lēg-	lēctus	'gather'
ed-	ēd-	ēsus	'eat'
em-	ēm-	ēmptus	'buy'
(od-)[8]	ōd-	ōsus	'hate'
reg-	rēg-	rēctus	'rule'
teg-	*tēg-	tēctus	'cover'
ag-	*āg-	āctus	'drive'

The analogical solution of Watkins accounts for the bulk of the LL data. Only a few counterexamples remain, in particular *sessus* (opposite perf. *sēdī*) and *cāsus* (with reduplicated perf. *cecidī*), both of which can be explained by secondary phonetic conditioning. The exceptions to LL are structurally parallel in that they show the *-V̄ss-* pattern in the participial form. Given the sporadic gemination and degemination of this sequence in Latin, it appears that the quantity of the syllable in question could be expressed by either *-V̄ss-* or *-V̄s-* because either way the total number of morae is the same. As Collinge points out concerning the *-V̄ss-* : *-V̄s-* alternation, "the final (surface) choice rests on structural indifference ... as to which conventional 'segment' carries the feature of duration" (1975: 230). From the prosodic point of view, geminates such as these "make position", i.e. they count as long. The two alternate realizations then have identical moraic value (figure 6.2). Thus, they appear to be in a sort of lexically conditioned free variation.

Figure 6.2 Alternation of long segments

8 No present tense for *ōdī* 'I hate' exists. The root form *od-* is recoverable also from the nominal *odium* 'hatred'.

Viewed in this way, LL can be seen to be a morphological rule with some secondary phonetic conditioning.

6.1.2.2. The Latin long vowels

Because long vowels are not subject to the same accentually induced qualitative alterations as short vowels, the differences in their development by syllable location are not great. Accordingly, initial and medial syllable positions are treated together; final long vowels are given without comparative data.

6.1.2.2.1. Long vowels in non-final syllables

ā Lat. *māter* 'mother', Gk. (Dor.) μᾱ́τηρ, Skt. *mātā́*, OIc. *mōðir* (< **mātēr*);
Lat. *frāter* 'brother', Skt. *bhrā́tā*, Goth. *brōþar*, Gk. φρᾱ́τηρ 'member of a phratry' (< **bʰreh₂tēr*);
Lat. *fārī* 'to speak', Gk. (Dor.) φᾱμί 'I speak', Skt. *sabhā́* 'colloquium', OIc. *bōn*, *bøn* 'request' (< **bʰeh₂*-).

ē Lat. *fēcī* 'I did', Skt. *dadhā́u* 'I placed', Gk. ἔθηκα (< **dʰeh₁*-);
Lat. *rēx* 'king', OIr. *rí*, Skt. *rā́jā* (< **h₃reh₁g*-);
Lat. *sēmen* 'seed', OCS *sěmę*, OIr. *síl*, Lith. *sėmenys* 'linseed', Goth. *manasēþs* 'mankind' (< **seh₁*-).

ī Lat. *vīs* 'strength', Gk. ἴς 'muscle' (< **ueiHs*);
Lat. *vīvus* 'alive', Skt. *jīvá*ḥ, Lith. *gývas* (< **gʷih₃-uo*-);
Lat. *vīrus* 'slime', Gk. ἰός 'rust, poison', MIr. *fí* (< **uiHs*-).

ō Lat. *vōx* 'voice', Skt. *vā́k*, (< **uōkʷ*-, lengthened *o*-grade of **uekʷ*- 'to speak');
Lat. *dōnum* 'gift', Gk. δῶρον, OIr. *dán* (< **deh₃*-).

ū Lat. *mūs* 'mouse', Gk. μῦς, Skt. *mū́ṣ*-, OHG *mūs* (< **mūs*);
Lat. *fūmus* 'smoke', Gk. θῦμός, Skt. *dhūmáḥ*, Lith. *dū́mai* (< **dʰuh₂mo*-);
Lat. *sūs* 'pig', Gk. ὗς, Skt. *sūkaráḥ* (< **suH-s*).

6.1.2.2.2. Long vowels in final syllables

Inherited long vowels are maintained in some syllable-final environments and are shortened in others. There is a tendency to maintain long vowels in absolute final position, as in imperatives like *amā* 'love', *monē* 'warn', *venī* 'come', etc., which may reflect a preference for heavy long syllables. They are also preserved in all 1st sg. act. forms: cf. *amō* 'I love', *capiō* 'I take', *ferō* 'I carry', etc., and in frozen case

forms which function adverbially such as *retrō* 'back', *ultrā* 'beyond', and so forth. Long final vowels are also preserved after the loss of a final *-n* or *-d*, as in *nātiō* 'nation' (< **nātiōn*), (abl.) *sententiā* 'opinion' (< **sententiād*, attested as OLat. SENTENTIAD), and before final *-s* (cf. OLat. *honōs* vs. CLat. *honor*). Many of these retentions are covered under the generalization that Latin avoids instances of open syllable ending in a short vowel, especially in monosyllabic words (**re*). For example, note the "repair" of the predicted short final vowel in the imperative of *dare* 'to give' by the addition of a mora, giving *dā* 'give', not **da*; cf. pl. *date*.

6.1.2.2.3. Shortening of long vowels

Among the processes by which long vowels are shortened, the following are the most productive.

Iambic shortening

Iambic shortening is a versification rule called by the grammarians *brevis brevians*, literally 'the short shortening', from *brevis syllaba brevians sequentem syllabam* 'a short syllable shortening the following syllable'. By this rule, unstressed heavy syllables which immediately follow light syllables in disyllabic words (i.e. those which are metrically ŏ ŏ) are "lightened" by shortening the vowel of the second syllable, resulting in a ŏ ŏ pattern. Such weakening may be euphonically motivated since it establishes a symmetrical or contour shape to a sequence of syllables. Whatever its phonological motivation, iambic shortening is a structure-changing operation which "repairs" some ill-formed sequences by removing a mora. For background on this rule, see Allen (1973), Pulgram (1975), and Devine—Stephens (1980). Examples of iambic shortening are to be found in classical forms like *égo* 'I' (OLat. *égō*), *cíto* 'quickly' (OLat. *cítō*), and *módo* 'only' (OLat. *módō*), as well as familiar classical forms such as *bene* 'well', *male* 'badly', and *duo* 'two'. In addition there are many forms in Plautus which scan with the second syllable short, even though these did not filter into the general classical language. Here are imper. *puta* 'think' (for *putā*), *volo* 'I wish' (for *volō*), *viri* 'of the man' (for *virī*), and imper. *ama* 'love' (for *amā*). Note that two-syllable words with heavy first syllable retain their original shape, as in *longē* 'far', *pūrē* 'purely', *sērō* 'late', and *ambō* 'both', as do three-syllable words such as *modicē* 'moderately' and *timidē* 'timidly'. The presence of extensive iambic shortening in the colloquial style of Plautus and Terence, not only of long vowels but also of diphthongs, strongly suggests the continuing effects of post-accentual weakening in Early Latin literature after the pre-Latin initial stress rule had been replaced by the penultimate (three-syllable) rule.

Iambic shortening is not restricted to iambic words. It occasionally applies to words with heavy first syllable (cf. imper. *esto* 'you, X will be', *ergo* 'therefore', *octo* 'eight') and can also apply in longer words to long vowels in medial position preceding the accent. Cf. the Plautine forms *gubĕrnābunt* 'they will steer', *volŭptātēs* 'desires', *iuvĕntūte* 'by youth', *minĭstĕrium* 'service', *volŭntāte* 'by

will', and *velĭnt* 'they wish', all containing metrically short vowels which should be long by virtue of their position in closed syllables. Note also Plautine *amĭcitiam* 'friendship' (cf. *amīcus*), and *verĕbāminī* 'you (pl.) were afraid' (cf. *verēbar*). Mester (1994: 17) analyses these as examples of iambic shortening in which the shortening of the second syllable by one mora is carried out in order to avoid the inadmissible initial sequence of ŏ ō, though not in the main accentual locus of the word. Such examples provide evidence of prosodically motivated processes which result in morphophonological alternations.

Iambic shortening appears to be an optional process whose application is lexically and morphologically conditioned. Frequent words such as *bene* 'well', *ego* 'I', *mihi* 'to me', *modo* 'only', *ubi* 'where', *sibi* 'to oneself' (OLat. *sibei*), *nisi* 'unless' (OLat. *nisei*), and *quasi* 'as if' (OLat. *quasei*) are almost always affected, while some words (e.g. *volŏ* 'I wish', *homŏ* 'man') vacillate, and still others are not affected, especially when the potentially involved syllable is serving a morphological function, e.g. dat./abl. sg. *virō* 'to/by the man', dat. sg. *ovī* 'to the sheep', or acc. pl. *deōs* 'gods'. As with other forms of sound change, morphological function can override prosodically motivated changes, conforming to the post-Neogrammarian principle that sound change is not blind (see Kiparsky 1995, esp. 653–657).

There are iambic forms which contain a non-morphological long vowel but which remain unaffected by the shortening rule. For example, forms like *amās* 'you love' and *monēs* 'you warn' should be expected to have short vowels (**amas*, **mones*), as do the 3rd person *amat* and *monet*. The long vowels of *amās* and *monēs* serve no independent morphological function, as they do in nominal forms like *virō*. They apparently do not shorten because of the general rule that long vowels are shortened in final syllables before any consonant other than *s* (cf. OLat. *honōs*, CLat. *honor* 'honor').

Finally, it seems to be the case that the specific phonological makeup of the final syllable of an iamb can be a determining factor in the application of the shortening rule, with "superheavy" syllables (i.e. those containing long vowels in closed syllables) left unaffected, as in the final vowel of participial *amāns* 'loving', *monēns* 'warning'. See Allen (1973: 183), Rix (1989), Mester (1994: 15–16).

6.1.2.2.4. Shortening in hiatus

Shortening in hiatus is a process by which a long vowel before a dissimilar vowel becomes short. This process was known to the ancient grammarians, who described it as follows: *vocalis ante vocalem corripitur* 'a vowel is shortened before a vowel'. By this process, which has several exceptions (e.g. *fīō* (< $*b^hū\text{-}ioh_2$?), *fīunt* 'I, they become'), such forms as *neō* 'I spin' and *fleō* 'I weep' with *e* can be reconciled with *nēmus* 'we spin' and *flēmus* 'we weep' with *ē*. Cf. also *creāre* 'to create' and its counterpart *crēscere* 'to increase'. Many forms from the older literature with long vowel attest to this process: cf. *fīerī* 'to become' (Ennius *Ann.* 1.9) vs. CLat. *fierī*; *adnūit* 'he nodded' (Ennius *Ann.* 6.10) vs. CLat. *adnuit*; *fūit* 'it has been' (Plaut.

Capt. 555) vs. CLat. *fuit*; *īnstitūī* 'I have formed' (Plaut. *Mostell.* 86) vs. CLat. *īnstituī*. The exceptions require, however, that the rule be marked lexically.

6.1.2.2.5. Shortening before certain finals

Shortening before final *-m*, *-t*, and *-nt*, and in polysyllables before *-r* and *-l*: cf. *audiam*, *audiat* 'I, X might hear', *audiar* 'I might be heard' vs. *audiās* 'you might hear'; *amem*, *amet*, *ament* 'I, X, they might love', *amer* 'I might be loved' vs. *amēs* 'you might love', *amēris* 'you might be loved'; CLat. *honor* 'honor' vs. OLat. *honōs*; *animal* 'animal' vs. gen. *animālis*.

6.1.2.3. The Latin diphthongs

6.1.2.3.1. Diphthongs in non-final syllables

Latin preserves some diphthongs in non-final syllables and monophthongizes others, whatever their PIE source. Latin diphthongs in medial syllables are subject to qualitative modifications similar to those of short vowels followed by consonants. A few examples are the following.

ei > *ī*: Lat. *fīdō* 'I trust', Gk. πείθω 'I persuade', Goth. *beidan* 'to wait', Alb. *bē* 'oath' (< **b*^{h}*eid*^{h}-);
Lat. *cōn-fīdō* 'I trust', *con-dīcō* 'I agree to' (as in initial syllables).

oi > *ū*: Lat. *cūrō* 'I care' (COIRAVERVNT in an inscription from Aeclanum), Paelign. *coisatens*; Lat. *commūnis* 'common', earlier COMOINEM (acc.) in the *SC de Bacch.*, Osc. **múínikú**.

Note

1. The diphthong **oi* is reflected by *oe* in *foedus* 'treaty' and may have developed to *ē* if the *ē* of *pōmērium* 'free space on the side of buildings' is from **oi* via *oe*. The perfect form *relīquī* 'I have left' may be exactly parallel to Gk. perf. λέλοιπα 'I have left', reflecting a rule by which *loi-* > *lei-* > *lī-* (cf *līber* 'free', Osc. *loufir*, *lībāre* 'to offer a libation', cf. Gk. λείβω).

ai > *ae* (initially): Lat. *laevus* 'on the left side', Gk. λαιός, OCS *lěvŭ* (< **laiuo*-);
Lat. *aedēs* 'building', orig. 'hearth' (cf. OLat. *aidīlis* 'building superintendent'), Gk. αἶθος 'fire', Skt. *édhaḥ*, OHG *eit* 'heat' (< **h*$_2$*eid*^{h}-).

ai > *ei* > *ī*: (medially), merging with *ei*: cf. Lat. *conquīrō* 'I seek for' (< **conquaisō*, cf. *quaerō*, *quaesō*);

concīdō 'I cut up' (< **con-caidō*, cf. *caedō*);
exīstimō 'I consider' (< **ex-aestimō*, cf. *aestimāre*).

eu, ou > *ū*: *ūrō* 'I burn' (< **eusō*), Gk. εὕω, 'I singe', Skt. *óṣati* 'X burns', OIc. *usli* 'glowing ashes' (< **h₁eus-*);
Lat. *dūcō* (OLat. *doucō*) 'I lead', Gk. Πολυδεύκης 'Pollux', Alb. *nduk* 'I pluck', Goth. *tiuhan* 'to lead' (< **deuk-*);
Lat. *con-dūcō* 'I lead together' (cf. *dūcō*), *iniūstus* 'unjust' (cf. *iūstus*).

au > *au* (initially): Lat. *auris* 'ear' (*auscultō* 'I listen attentively'), Goth. *ausō*, OIr. *áu*, Lith. *ausìs* (< **h₂eus-*).

au > *eu* > *ū* (medially): cf. Lat. *con-clūdō* 'I enclose' (cf. *claudō*), *accūsō* 'I accuse' (< **ad-causō*, cf. *causa*).

6.1.2.3.2. Diphthongs in final syllables

In Latin, the first element of a final diphthong behaves like a short vowel in a final closed syllable.

ei > *ī*: Lat. dat. sg. *cōnsulī* 'consul' (< *cōnsuleī*); dat. sg. *tibi* 'to you' (< *tibī*, an iambic word).

oi > *ei* > *ī*: The nom. pl. ending of *o*-stems such as *dominī* 'masters' is parallel to Gk. *o*-stem endings in *-oi* (cf. λύκοι 'wolves'). The intermediate stage in *-ei* is attested in such forms as (OLat.) *servei* 'servants', *foederātī* 'allied' (spelled in inscriptions as FOIDERATEI). The dative and ablative forms in *-īs* are traceable back to the PIE locative and instrumental endings **-ōis* and **-oisu* (with the *ō* of **-ōis* shortened according to Osthoff's Law, by which non-final long diphthongs were shortened and merged with the ordinary diphthongs), as seen in Gk. dat. pl. ἵπποις 'to the horses', Skt. instr. *devāís* 'by the gods'.

ai > *ei* > *ī*: Dative and instrumental/ablative plurals of *a*-stem nouns such as *puellīs* 'to the girls' and *rosīs* 'to/by the roses' show the same development as do **o*-stem nouns. From earlier **rosais* (cf. Gk. dative -αις) develops **roseis* > *rosīs*.

eu > *ū*: Lat. gen. *senātūs* 'senate' < **senateu-s*. As in initial and medial syllables.

au > *au*: Lat. *aut* 'or' (though this is probably from **autī*), Gk. αὖ. Further examples are lacking.

6.1.3. The Latin accent

Despite the testimony of many ancient grammarians, among them Varro, Pompeius, Priscian, Gellius, and even Cicero, who ascribed to Latin a pitch system like that of Greek, the best evidence concerning the Latin accent points to a non-contrastive stress-based system, i.e. one in which accent correlates with duration and intensity in the pronunciation of a syllable and which does not serve to distinguish words.[9] Stress in Latin is computed from the right word-edge. Its placement is sensitive to the structure of the syllables in words, and is regulated by the "Penultimate Law", which stipulates the following.

a. stress falls on the first syllable of two-syllable words, as in *égo*, not ***egó* 'I',[10] i.e. [σ́ σ], not **[σ σ́].
b. stress falls on the penultimate syllable if it is "heavy" and on the antepenultimate syllable if the penult is "light", as in *inimícus* 'enemy', but *inimīcítia* 'hostility'.

Generally speaking, heavy syllables ([σ̄]) are those with two morae [μμ] contained in a long vowel (*pō-tus* 'drained'), a diphthong (*cau-sae* 'causes'), or a short vowel followed by a consonant in the same syllable (*pec-tus* 'breast', *cōn-fec-tus* 'finished'). Otherwise the syllable is light ([σ̆]) and contains only a single mora [μ] (*me-a* 'my' (fem.), *cōn-fi-ci-ō* 'I finish'). Apart for the exceptions noted in n. 10, the final syllable is extrametrical and never carries word accent except in monosyllables. The Penultimate Law prescribes that the stressed syllable of a word can never be more than three syllables from the end.

Examples of stressed Latin words
(After Niedermann 1953.)

a. Two-syllable words: *légis*, *ámās*, *ínter*, *áudāx*
b. Words of more than two syllables:

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9 Occasionally the grammarians note that different words with the same segments are distinguished by a difference in accent placement: cf. *áde*ō 'I approach' (verb) vs. *adé*ō 'so far' (adverb). It appears doubtful, however, that there was anything systematic about such distinctions, and there is even evidence from early comic poets that they did not exist.

10 There are a few exceptions. For example, some originally trisyllabic words with penultimate accent which became disyllabic with loss of the final vowel have retained the accent in its original position. Cf., for example, *illíc* 'at that place', *adhúc* 'thus far' (< **illéice*, **adhúce*), and perhaps perfect forms like *fūmát* 'X smoked' and *audít* 'X heard' if they are contractions of the full forms *fūmávit* and *audívit*. Compounds of *inde* 'thence' such as *dé-inde* and *éx-inde* are accented on the antepenult on analogy to *dé-in* and *éx-in*. It is also the case that in some instances, such as when enclitics like *-que* 'and', *-ve* 'or', and others are added to a full word, the resulting form is reanalyzed as a new phonological word, and the stress moved to the syllable immediately before the enclitic, as can be seen in (acc.) *vírum* 'man', but *virúmque* 'and the man'. There is some debate over this point, however, especially because of the conflicting and often contradictory testimony of the ancient grammarians. See Allen (1978: 87–88) for discussion.

1. With long penultimate: *fidēlis, amātur, fortitūdō, religiōsus*
2. With short penultimate: *fācilis, fēmina, impetus, amīcitia*

Despite the Roman account of the accent system being based on distinctions of pitch, the strongest evidence, both synchronic and diachronic, points directly to a stress-based system like the one found in Modern English. Latin grammatical terminology describing the accent system is translated directly from Greek, and the overall account accords with the Greek descriptions in such detail that it appears inconceivable that such similarity is possible (Servius is an exception here, in that he does not ascribe Greek-like characteristics to the Latin accentual system).[11]

It is generally accepted that Proto-Latin had a word-initial stress accent, which had evolved into the classical system in the pre-literary period, probably by about 250 B.C.E. The evidence for word-initial stress comes in several forms. The strongest indicator is the extensive loss of short vowels (syncope) and the shortening of long vowels everywhere but in the initial syllable of full words (i.e. words which are not serving as the second member of a compound). As is often the case, the lost or shortened vowel can be identified by comparing two variants of the same word, one of which contains the full vowel, and the other of which does not: cf. *calidus* : *caldus* 'warm', *porrigō* : *porgō* 'I stretch out', *oculus* : *oclus* 'eye', *calefaciō* : *calfaciō* 'I make warm', *purigō* : *purgō* 'I cleanse', *aevitās* : *aetās* 'age'. Syncope is a lexically restricted process; like other types of prosodically induced change, syncope does not affect every token that fits its structural description. It is favored when the onset of the affected syllable is a resonant. Further evidence for the loss or shortening of vowels is the morphophonemic alternation between two representations of the same root, one of which shows a full segment, the other of which does not: cf. the compounds *avis* 'bird' : *auceps* 'bird-catcher' (< **avi-caps*), *opifex* 'maker' (< **opi-facs*) : *officīna* 'workshop' (< **op-facīna*), *anceps* 'two-headed' (< **ambi+caput*), *prūdēns* 'prudent' (< **pro-vidēns*), and also the positive : comparative adjective pair *iuvenis* 'young' : *iūnior* 'younger'. The reduction of segments occurred in original final syllables, sometimes lexically specified as in (imper.) *dūc* 'lead', *fac* 'make' vs. *rege* 'rule', but usually more systematically as in (nom.) *ager* 'field' < **agrs* < **agros*, **ferēns* 'carrying' < **ferentis*, and *ars* 'skill' < **artis*. It also occurred in penultimate syllables, cf. (adv.) *īnfrā* 'below' vs. (adj.) *īnferus* 'below' and *valdē* 'greatly' vs. *validus* 'strong', and in antepenultimate syllables, as in

11 It is possible that a mixed system utilizing both stress and pitch distinctions existed in Latin during roughly the period of 100 B.C.E. – 300 C.E., especially in the upper class registers in which modeling on Greek speech patterns was especially prevalent. The evidence for such a system is not overwhelming, however. See Sturtevant (1940: 177ff.) for arguments in favor of a mixed system. There is also some discussion over the possibility that Latin had secondary word stress on the initial syllable when not immediately preceding main stress. Evidence for this claim, which comes mainly from diachronic developments into Romance, is inconclusive. See Mester (1994, n. 8) for references and some discussion.

ūndecim '11' < **ūnodecem*, *repperī* 'I found' < **repeperī*, *rettulī* 'I brought back' < **retetulī*, as well as in certain enclitics (*neque* : *nec* 'neither'). A second type of evidence for the word-initial stress accent in pre-literary Latin is the "weakening" (raising) of vowels (in particular *a* and occasionally *e* and *o*) in non-initial syllables to *i* and occasionally *e* and *u*.[12] The change to *i* can be seen in pairs such as *teneō* 'I hold' : *sustineō* 'I support', *saliō* : *dēsiliō* 'I jump', *pater* 'father' : *Iuppiter* 'Jupiter', *legō* 'I collect' : *dēligō* 'I select', and in a derivative like *novitās* 'newness' < **novo-tās*. The change to *e* can be seen in word pairs such as *pariō* : *reperiō* 'I bear', *factus* : *cōn-fectus* 'done, finished', *imberbis* 'beardless' (< *in+barba*), and in derivatives such as *artifex* 'skilled' (< **arti-fac-s*) and *biennis* 'of two years' (< **bi-annis*). The change to *u* is evident in forms such as *dēnuō* 'anew' (< **dē novōd*) and *onus* 'burden' (< **onos*).

Another type of evidence for the word-initial accent of pre-literary Latin comes from early Greek loans into Latin, in which syncope and raising in the first syllable are both evident: cf. *balneum*, *balineum* 'bath' (Gk. βαλανεῖον), *Tarentum* (Gk. (acc.) Τάραντα), *camera* 'vault' (Gk. καμάρᾱ), and *amurca* 'watery part that flows out in pressing olives' (Gk. ἀμόργη).

Arguments for the primitive initial accent have also been made from the rule of iambic shortening, by which unstressed heavy syllables which immediately follow light syllables in disyllabic words (i.e. those which are metrically ŏ ŏ) are "lightened" by shortening the vowel of the second syllable, resulting in a ŏ ŏ pattern.

6.2. The consonants

The PIE consonants are shown in table 6.2.

6.2.1. Resonants

6.2.1.1. Glides[13]

**i̯* > Lat. *i* (*j*): Lat. *iugum* 'yoke', Skt. *yugám*, Gk. ζυγόν (with problematic initial ζ), Hitt. *iukan* (< **Hiugom*);
Lat. *iecur* 'liver', Gk. ἧπαρ, Skt. *yákṛt*, Lith. *jāknos* (< **Hiekᵘ̯-r(t)-*);
Lat. *iūs* 'law', Skt. *yṓḥ* 'hail', OIr. *huisse* 'just' (< **ieus-*).

12 Syncope and raising are also characteristic of Oscan and Umbrian, though the evidence which they provide for a word-initial accent in Proto-Italic is not conclusive.

13 See section 6.1.2. on page 250 for the distribution of the vocalic reflexes of the PIE semivowels.

Table 6.2. PIE resonants and obstruents

Resonants			
Glides	i̯	u̯	
Nasals	m/m̥	n/n̥	
Liquids	l/l̥	r/r̥	
Obstruents			
Stops	**Voiceless**	**Voiced**	**Voiced aspirated**
Labials	p	(b)	b^h
Dentals	t	d	d^h
Velars	k	g	g^h
Labiovelars	k^u	g^u	g^{uh}
Fricative	s		

Notes to the development of *i̯ in Latin

1. When *i̯ is in a consonantal group with the obstruents *-*d*-, *-*g*-, or *-*s*-, there is a gemination which results from the anticipatory assimilation of the consonant to the *i̯, resulting in *[ii̯] or *[ii]. In initial position, this sequence is then simplified to a single [i], written *i* (*j*): cf. *Iūpiter, Iovis* 'Jupiter', still written in OLat. as DIOVOS, DIOVIS (< **dieu-es*), cf. Gk. Ζεύς 'Zeus'. Further examples in other environments are: *peius* 'worse' (< **ped-iōs*), cf. Skt. *pádyaḥ* 'concerning the foot'; *māior* 'greater' (< **mag-iōs*,[14] cf. Gk. μέγας, Skt. *mahánt*-; *āiō* 'I say' (< **ag-iō* < **h₁eg-ioh₂*), cf. Lat. *ad-ag-ium* 'proverb', Skt. *áha* 'speak'; the pronominal genitive form *cuius* 'whose' (< **kᵘo-sio-s*), which may contain the genitive ending **-osio* as seen in Skt. pronominal forms like *tásya* 'of him', *asyá* 'of this one', and in the genitive forms POPLIOSIO and VALESIOSIO 'of Publius Valerius' of the Lapis Satricanus. The same holds for forms like *eius* 'his, hers', *cuius* 'whose', etc., where the intervocalic *i* represents *ii* (i.e. [ei̯ius]).

2. Between vowels *i̯ is lost, as can be seen in such forms as Lat. *trēs* 'three' (< **treies*), cf. Skt. *tráyaḥ*, Gk. τρεῖς, OIr. *tri*; and in formations such as *moneō* 'I warn' (< **mon-eie-*, which is an old causative formation): cf. Skt. 3rd sg. pres. *mānáya-ti* 'X honors', Lith. inf. *iš-man-ýt-ti* 'to warn'.

*u̯ > Lat. *u* (*v*): Lat. *videō* 'I see', Gk. (Ϝ)ἰδεῖν 'to see', Skt. *vid*- 'know', Goth. *witum* 'we know' (< **ueid*-);
Lat. *vocō* 'I call', Skt. *vákti* 'X speaks', OIr. *foccul* 'word', Gk. (Ϝ)ἔπος (< **uokᵘ*-, **uekᵘ*- 'speak');
Lat. *vīcus* 'village', Goth. *weihs*, Skt. *víś*- 'house', Gk. (Ϝ)οἶκος (< **ueiko*-).

14 The vowel underlying the *a* of *magis* is problematic. The cognate Greek μέγας shows **e*, while Skt. *mahánt*- ambiguously reflects late PIE **e*, **o*, or **a*. It is possible that *magis* and its Latin cognates show the "expressive" PIE **a*.

Notes to the development of *u̯ in Latin

1. Initially before a vowel, and intervocalically, *u̯ is preserved as consonantal *u* (*v*). Thus, initially, Lat. *vehō* 'I carry' (< **ueg^h-*), cf. Skt. *váhāmi* 'I carry', Gk. (F)ὄχος 'carriage', Goth. *ga-wigan* 'to shake down'; *videō* 'I see' (< **ueid-*) and *vōx* 'voice' (< **uōk$^{u̯}$-*). Intervocalically, *novem* 'nine' (< **h$_1$neun*), cf. Skt. *náva*, Gk. ἐννέ(F)α, Goth. *niun*; and *novus* 'new' (< **neuos*), cf. Skt. *návaḥ*, Gk. νέ(F)ος, Hitt. *newa-*. Also, cf. *avārus* 'greedy', *sevērus* 'serious', and *dīvīnus* 'divine' instead of **ārus*, **sērus*, or **dīnus*, where loss of **u̯* might be expected (see 5 below).

2. After *k*, **u̯* is preserved, as in *equus* 'horse' (< **h$_1$ekuo-*), cf. Skt. *áśvaḥ*, Gk. ἵππος, OIr. *ech*. It seems to be the case that the sequence **ku* was reanalyzed as **k$^{u̯}$*, which is preserved in Latin as *qu*. However, the second member of the *k$^{u̯}$* is occasionally subject to loss before rounded vowels, as in *cotīdiānus* 'daily' (*quotīdiānus*), *secūtus* 'followed' (*sequor*).

3. After *s*, **u̯* is preserved. Thus *suādeō* 'I advise' (< **sueh$_2$du-*), cf. Gk. ἡδύς 'sweet', Skt. *svādúḥ*, OHG *suozi*.

4. After an initial laryngeal, **u̯* is lost before the liquids *r* and *l*, as in *lāna* 'wool' (< **Hulh$_2$no-*), cf. Hitt. *ḫulana*, Skt. *úṛṇā*, Goth. *wulla*; *rādīx* 'root' (< **Hureh$_2$d-īk-*), cf. Goth. *waúrts*, 'root', Gk. ῥᾴδιξ 'branch', Wel. *gwraidd* 'roots'.

5. Between two similar vowels, **u̯* is sometimes lost. Thus, *sīs* 'if you wish' (< *sī vīs*), *dītiae* 'riches' (< *dīvitiae*), *lātrīna* 'bath' (< *lavātrīna*). The contracted form *mālō* 'I prefer' (< **magz-volō* < **magis-volō*) appears to result from the same process, although the vowels are not identical. The uncontracted form, with **u̯* maintained, is found in OLat. *māvolō*, where the *v* was apparently preserved because of the transparency of the compound. Alternating perfect forms such as *audīvistī*/*audīstī* 'you have heard' or *dēlēveras*/*dēlēras* 'you had destroyed' may reflect the analogical restoration of the *v*, which is the standard marker of the perfective. Note the preservation of **u̯* in *avārus* 'greedy', *sevērus* 'serious', etc.

6. In non-initial position before *o*, **u̯* is lost, probably absorbed by the roundedness of the *o*. Thus, *soror* 'sister' (< **suesōr*), cf. Skt. *svásā*, Gk. (voc.) ἔορ, Goth. *swistar*; *somnus* 'sleep' (< **suep-no-s*), cf. Skt. *svápnaḥ*, Gk. ὕπνος, OIc. *svefn*.

7. After a bilabial consonant, **u̯* disappears, as can be seen in *aperiō* 'I open' (< **h$_2$ep-uer-*), cf. Skt. *api-vṛṇóti* 'X closes', Lith. *at-vérti* 'X opens', Osc. *veru* 'door' (acc.); *forum* 'market place' (< **d^{h}uōr-*), cf. Skt. nom. pl. *dvā́raḥ* 'doors', Gk. (Hom.) θύρᾱ 'door', OHG *turi*; and finally the Latin imperfect forms in *-bā-* (e.g. *amābam* 'I was loving', *monēbās* 'you were warning', etc.), which are derived from an old optative of 'be', viz. **b^{h}ueh$_2$-*. Perhaps related to this change, but different in its outcome, is the change of the initial Latin sequences *du-* and possibly *tu-* to *b-* and *p-*, respectively, probably through the intermediate stages **bu-* and **pu-*. Thus *bonus* 'good' (< **due-no-*), attested in OLat. as DVENOS; cf. OIr. *den* 'fit', and perhaps Gk. δύ-να-μαι 'I am powerful'; *bellum* 'war', attested in OLat. as DVELLOM, cf. Skt. *dunóti* 'X burns', Gk. δαίω 'I ignite', Alb. *dhunë* 'pain'; and perhaps *pariēs* 'wall' (< **tuer-*), cf. Lith. *veriù* 'I embrace', though this etymology has some problems.

6.2.1.2. Liquids and nasals (syllabics)

Like the semivowels, the syllabics **ṛ/r*, **ḷ/l*, **ṃ/m*, and **ṇ/n* (liquids and nasals) have two realizations in PIE, one consonantal and one vocalic (syllabic).[15] In PIE, syllabic variants occur between two obstruents or between an obstruent and a word boundary, as in **(d)kṃtom* 'one hundred', **pedṃ* 'foot' (acc.); between a resonant and a following obstruent, laryngeal, or word boundary, as in **uḷkʷos* 'wolf'; between a word boundary and a following obstruent or laryngeal, as in **meh₂kros* 'long, great' (Hitt. *maklant-*, Lat. *macer*); and between an obstruent or word boundary and a laryngeal, as in **pḷh₁ou-* 'many' and **h₂ṛtko-* 'bear'.

The consonantal development of *[r], *[l], *[m], and *[n] in Latin is as the consonants *r*, *l*, *m*, and *n*. The syllabic variants *[ṛ], *[ḷ], *[ṃ], and *[ṇ] generally develop as *or* (occasionally *ar*), *ol*, *em*, and *en*. Data on the realization of the syllabic variants in Latin follow. Consonantal variants are taken up with the other consonants.

6.2.1.2.1. Nasals

**ṃ* > Lat. *em*: Lat. *ventus*, past part. of *veniō* 'I come' (with assimilation of *m* to *n* before *t*), Gk. βατός, Goth. *gaqumþs*, Skt. *gatáḥ* 'gone' (< **gʷm-to-s*);
Lat. *centum* '100', Skt. *śatám*, Gk. ἑκατόν, OIr. *cét*, Goth. *hund* (< **(d)kmtom*);
Lat. third declension accusative suffix *-em* < **-ṃ*: cf. *dent-em* 'tooth', Gk. ὀδόντ-α (< **h₃dent-m*).

**ṇ* > Lat. *en*: Lat. *mēns* 'mind' (with lengthening before *-ns*), cf. Skt. *matíḥ*, Gk. αὐτό-ματος 'self- moving', OIr. *do-moiniur* 'I believe', Goth. *ga-munds* 'remembrance' (< **mnti-s*);
Lat. *tentus* 'stretched', Skt. *tatáḥ*, Gk. τατός, OIr. *tan* 'time', Goth. *uf-þanjan* 'to stretch oneself out' (< **tn-to-s*);
Lat. *inguen* 'groin', Gk. ἀδήν 'gland', OIc. *økkr* 'swelling' (< **enguen* < **ngʷen-*);
Lat. *novem* 'nine' (with analogical change of final *-n* to *-m*: cf. *decem* 'ten'), Gk. ἐννέ(Ϝ)α, Skt. *náva*, Arm. *inn*, OIr. *nói n-* (< **h₁neun*).

Notes to the syllabic nasals

1. *Finally after a consonant.* PIE **ṃ* > *em* in Latin. For example, the third declension accusative suffix *-em* rests on **-ṃ* (Gk. -α): cf. *dent-em* 'tooth' (Gk. ὀδόντ-α), *patr-em* 'father' (Gk. πατέρ-α), *nāv-em* 'ship' (Gk. (Hom.) νῆ(Ϝ)-α).
2. PIE **ṇ* > *en* in Latin. There are only a few examples attesting final **ṇ* in Latin.

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15 As noted in chap. 2, unless specific phonetic detail is being highlighted, the consonantal variant of the syllabics is used in reconstructions.

One is the relatively common neuter suffix **-mn̥*, which is realized in Latin as *-men*. While Latin examples of this suffix are plentiful, there are comparatively fewer cognates from other languages which use the same suffix, as do *agmen* 'column' (< **h₂eg-mn̥*) and Skt. *ájman-*. Some Latin examples utilizing **-mn̥* are *sē-men* 'seed' (cf. OPruss. *semen*, OCS *sěmę*), *flū-men* 'river', *certā-men* 'struggle', *nū-men* 'a nod'. A further example of final **n̥* is the number *novem* 'nine', which rests on an ancient **noven* < **h₁neun̥*, and has apparently undergone an analogical reshaping of the final consonant from *n* to *m* under the influence of *decem* 'ten'. Support for the original final **n* (and not **m*) in *novem* can be found in the ordinal *nōnus* 'ninth'.

6.2.1.2.2. Liquids

**r̥* > Lat. *or*: *mors* 'death', Skt. *mr̥tíḥ*, Lith. *mirtìs* (< **mr-t-is*);
Lat. *poscō* 'I ask', Skt. *pr̥cchámi*, OHG *forsca* 'question', Lith. *piršti* 'to request in marriage' (< **prk-sk-*, zero-grade of **perk-*);
Lat. *cor* (gen. *cord-is*) 'heart', Gk. (Att.) καρδίᾱ, (Hom.) κραδίη, Goth. *haírtō*, Lith. *širdìs* (< **kerd-*).

**l̥* > Lat. *ol*: Lat. *mollis* 'soft', Skt. *mr̥dúḥ*, Gk. βλαδύς (< **μλαδ-*), Arm. *melk* (< **mldu-*);
Lat. *ulmus* 'elm', MIr. *lem*, OHG *ëlmboum* < (**h₁lmo-*).

Notes to the syllabic liquids

1. After an initial laryngeal and before a consonant, PIE**l̥* > *ol* > *ul* in Latin: Lat. *ulmus* 'elm' (< **olmo-* < **h₁lmo-*), MIr. *lem*, OHG *ëlmboum*. (This development may also be evident for **r̥* in Lat. *ursus* 'bear' if it is from **h₂r̥tko-* (cf. Gk. ἄρκτος, Skt. *ṛkṣa-*), though this derivation is highly problematic).
2. Finally after a consonant, PIE **r̥* > *or* > *ur* in Latin: Lat. *iecur* 'liver' (< **Hiekʷ-r(t)-*), cf. Skt. *yákr̥t*, Gk. ἧπαρ.
3. There are no examples of final Lat. *ol* from **l̥*.

6.2.1.2.3. Liquids and nasals (consonants)

The consonantal development of **r̥/r*, **l̥/l*, **m̥/m*, and **n̥/n* in Latin is as the consonants *r*, *l*, *m*, and *n*.

Liquids

Initially. The sound **r* does not occur initially in PIE. When it is the second segment in a PIE word, it is preceded by a laryngeal. Its Latin reflex, however, is initial, since the laryngeals are always lost.

**Hr* > *r*: Lat. *rēmus* 'oar', Gk. ἐρέτης 'rower', ἐρετμόν 'oar', OIr. *ráid* 'X rows', OIc. *rōa* (< **h₁erh₁-*);

Lat. *rēx* 'king', Skt. *rā́jā*, OIr. *rí*, (< *h_3reh_1g-);
Lat. *ruber* 'red', Skt. *rudhirá̤ḥ*, Gk. ἐρυθρός, Goth. *raúþs*, OIr. *rúad* (< *h_1rud^h-*ro*-).

*l > *l*: Lat. *linquō* 'I leave', Gk. λείπω, Skt. *riṇájmi*, OIr. *léicid*, Goth. *leihvan* 'to leave' (< *$lei(n)k^u$-);
Lat. *lūcus* 'sacred grove', Skt. *rócatē* 'X shines', *lōkáḥ* 'open space', Gk. λευκός 'white', Arm. *loys* 'light', Lith. *laũkas* 'pale' (< **leuk*-);
Lat. *legō* 'I gather', Gk. λέγω, Goth. *lēkeis* 'physician', i.e. 'gatherer of medicinal herbs' (< **leg*-).

Intervocalically.

*r > *r*: *ferō* 'I carry', Gk. φέρω, Arm. *berem*, Skt. *bhárāmi*, Goth. *baíran* 'to carry' (< *b^her-);
Lat. *arō* 'I plow', Gk. ἀρόω, MIr. *airim*, Lith. *ariù*, Goth. *arjan* 'to plow' (< *h_2erh_3-).

*l > *l*: Lat. *volō* 'I wish', Gk. λείω, Skt. *váraḥ* 'wish', Arm. *gel* 'favor, beauty', Goth. *wiljan* 'to wish' (< *g^uel-);
Lat. *saliō* 'I jump', Gk. ἅλλομαι, Skt. *ucchalati*(?) 'X hastens upward', MIr. *saltraid* 'to step' (< **sal*-?).

Before and after consonants. Both **l* and **r* are maintained before and after consonants and promote the assimilation of adjacent consonants to a liquid articulation under certain circumstances, as can be seen in *sella* 'seat' < **sed-la*, *velle* 'to wish' < **vel-se*, and *ferre* 'to carry' < **fer-se*. Examples of non-assimilating preconsonantal *r* are *verbum* 'word' (< *$uerd^h$-), cf. Gk. εἴρω, Goth. *waúrd*, Hitt. *weriia* 'to call'; and *cornū* 'horn' (< **krn*-), cf. Goth. *haúrn*, MIr. *cern* 'angles', OLatv. *sirna* 'deer'. An example of postconsonantal *r* is *imber*, gen. *imbris* 'rainstorm' (< *h_1mb^h-*r*-), cf. Skt. *abhráḥ* 'rain water' and the Gaulish river name **Ambrā*. For postconsonantal *l*, there is *clueō* 'I am named' (< **kleu*-), cf. Gk. κλέ(Ϝ)ω 'I praise', OIr. *cloth* 'praise', Goth. *hliuma* 'hearing'; and an example of preconsonantal *l* is *altus* 'high' (< *h_2elto-), cf. Gk. ἄν-αλτος 'insatiable', MIr. *alt* 'height', Goth. *alds* 'interval'.

Finally. Final *r* from **r* is common because of its prominence in both verbal and nominal inflections, as can be seen in agentive nominals in *-tor* such as *victor* 'conqueror', inherited middle infinitives such as *imitārier* 'to copy', and so on. Examples of inherited final *l* are rather rare. Nonetheless, the evidence of such forms as *sāl* 'salt' (< **sal*-), cf. Gk. ἅλς, OIr. *salann*, Goth. *salt* and *sōl* 'sun' (< *suh_2el-), cf. Gk. (Hom.) ἥλιος, Goth. *sauil* (from a variant form *seh_2uel-) show this sound clearly in final position as *l*.

Nasals

Consonantal realizations. Except for the few cases in which they are lost, PIE non-syllabic nasals have a consonantal realization in Latin. Their behavior in particular environments is as follows.

Initially.

**n* > *n*: Lat. *nās(s)us* 'nose', Skt. *nasā́*, OHG *nasa*, OPruss. *nozy* (< **neh₂s-*);
Lat. *nāvis* 'ship', Skt. *nā́uḥ*, Gk. (Hom.) νηῦς, νηός, OIr. *náu* (< **neh₂u-*);
Lat. *nepōs* 'nephew', OHG *nevo*, Skt. *nápāt* 'grandson', Gk. (Hom.) νέπ-οδες 'offspring' (< **nepōt-*).

**m* > *m*: Lat. *māter* 'mother', Skt. *mātā́*, Gk. μήτηρ, OIr. *máthir*, OHG *muoter* (< **mātēr*);
Lat. *mūs* 'mouse', Skt. *mū́ṣ-*, Gk. μῦς, Arm. *mu-kn*, OHG *mūs* (< **mūs*);
Lat. *mel* 'honey', Arm. *meł-r*, Gk. μέλι, Alb. *mjal*, Hitt. *milit-* (< **melit-*).

Intervocalically.

**n* > *n*: Lat. *canis* 'dog', Gk. κύων, Goth. *hunds*, Lith. *šuõ*, Skt. *śvā́* (< **kuōn*);
Lat. *animus* 'spirit', Skt. *ániti* 'X breathes', Gk. ἄνεμος 'wind', OIr. *anál* 'breath', Goth. *uz-anan* 'to breathe out' (< **h₂enh₁-*);
Lat. *genus* 'race', Skt. *jánaḥ*, Gk. γένος, Arm. *cin* (< **genh₁-os-*).

**m* > *m*: Lat. *fūmus* 'smoke', Skt. *dhūmáḥ*, Gk. θῦμός, Lith. *dū́mai* (< **dʰuh₂mo-*);
Lat. *domō* 'I tame', Skt. *dā́myati* 'X controls', Gk. δάμνᾱμι 'I restrain', OIr. *damnaim* 'to fasten', Goth. *ga-tamjan* 'to tame' (**demh₂-*);
Lat. *sēmi* 'half', Skt. *sāmí-*, Gk. ἡμι-, OHG *sāmi-* (< **sēmi-*).

After a consonant. PIE **n* and **m* generally remain *n* and *m* in Latin. Preceding non-initial consonants adopt the nasality of a following *n* while retaining their own place (dental, labial, or velar) of articulation. Thus *somnus* 'sleep' < **suep-no-s*, *penna* 'feather' < **pet-na* (cf. *petō*), and *dignus* 'worthy' < **dek-no-s* (cf. *decet*). When *m* is preceded by *t* or *d* it passes to *mm* on its way to *m*, as in *rāmus* 'branch' < **rām-mos* < **ureh₂d-mos* (cf. Lat. *rādīx* 'root'). In initial position, the pre-nasal consonant is eventually lost entirely, as seen in forms like *nātus* 'born' < *gnātus* (cf. *genus*) and *nōtus* 'known' < *gnōtus* (cf. *cognōscō*).

Before a consonant. Before non-fricative consonants, Latin *n* and *m* (< **n* and **m*) assimilate to the labial, dental, or velar articulation of the following consonant. From a phonemic standpoint, nasals are indistinguishable in this position and could be represented simply by the symbol **N*, which shows that they carry the [nasal] feature plus the [place] features of the following consonant. Thus, *con-demnō* 'I

condemn' (< **com-demnō*), *im-modestus* 'unrestrained' (< **in-modestus*). Though never marked in the written form of the language, the assimilation of **N* to the velar nasal [ŋ] in such forms as *ingrātus* 'ungrateful' or *congregō* 'I collect' is suggested by the parallelism between such forms as Lat. *concha* and Gk. κόγχη 'mussel', where Latin *-nch-* approximates Gk. *-γχ-*; also Gk. ἄγγελος 'messenger', borrowed into Latin as *angelus*. Further assimilations involving nasals are taken up below.

Nasals

Disappearance. Before fricatives. It is clear from the testimony of the ancient grammarians, the developments into the Romance languages, and the inscriptional record that Latin nasals disappeared before the fricatives *s* and *f*. This despite the fact that nasals were generally retained in the classical writing system, either for the explicit marking of paradigmatic unity (as in *hiems*, *hiemis* 'winter'), as a case marker (e.g. the accusative singular *fēminam* 'woman', *virum* 'man', etc.), or perhaps to signal some sociolinguistic distinctions. With the disappearance of the nasal, there was compensatory lengthening of the preceding vowel: cf. *thēsaurus*/ *thensaurus* 'treasure', and accusative plurals like *virōs* < **vir-ons*, *cīvīs* < **cīv-ins*, and so forth.

Word-finally after a vowel. Inscriptional evidence such as OLat. OINO 'one' (for *oinom*) and AIDE 'building' (for *aidem*) indicates a weak or nonexistent pronunciation for *-m*. When *-m* is followed by a word beginning with a vowel, it is often elided, as can be seen in such examples as *moriundust* from *moriundum est* 'one must die' or *scrīptust* from *scrīptum est* 'it has been written'. As for *-n*, it is systematically lost in final position, as can be seen in third declension nouns such as *homō*, *homin-is* 'man' or *ōrdō*, *ōrdin-is* 'order', from **homon* and **ordon*, respectively. This loss undoubtedly represents an IE process: cf. Skt. nom. *rā́jā* 'king' (stem *rā́jan-*).

6.2.2. Obstruents

6.2.2.1. Stops

6.2.2.1.1. Voiceless unaspirated stops

The PIE voiceless stops **p*, **t*, **k* and **k^{w}* remained in Latin as the voiceless unaspirated stops *p*, *t*, *k*, and *qu*. As noted in chap. 2, some reconstructions of PIE include a series of phonemic voiceless aspirated stops (**p^{h}*, **t^{h}*, **k^{h}*, **k^{wh}*), but the evidence for such a set of phonemes is weak. In some other reconstructions of PIE, voiceless aspirates are considered to be allophones of the plain voiceless stops. The best evidence suggests that voiceless aspirated stops were not independent phonemes in the PIE phonological system. When found in Latin, aspirated stops are

generally in words borrowed from Greek (*philosophia* 'philosophy') or Etruscan (*lurchō* 'glutton'), or are in expressive words like *cachinnō* 'I laugh'.

**p* > Lat. *p*: Lat. *pēs, ped-is* 'foot', Gk. πούς, ποδός, Skt. *pā́t*, Goth. *fōtus* (< **ped-/pod-*);
Lat. *speciō* 'I see', Skt. *páśyāmi*, Gk. σκέπτομαι 'I look about', OHG *spehōn* 'to be on the lookout' (< **spek-*);
Lat. *clepō* 'I steal', Gk. κλέπτω, Goth. *hlifan* 'to steal', OPruss. *auklipts* 'hidden' (< **klep-*).
Initial *p* is assimilated to *qu* in a following syllable: cf. Lat. *quīnque* 'five' (Gk. πέντε, Skt. *páñca*), Lat. *coquō* 'I cook' (Skt. *pácāmi*, dial. Lat. *popīna* 'cook-shop', borrowed from Oscan).

**t* > Lat. *t*: Lat. *trēs* 'three', Skt. *tráyaḥ*, Gk. τρεῖς, Goth. *preis* (< **treies*);
Lat. *pater* 'father', Gk. πατήρ, Skt. *pitā́*, Goth. *fadar* (< **ph₂tḗr*);
Lat. *stō* 'I stand', Gk. (Dor.) ἵστᾱμι, Skt. *tíṣṭhāmi*, Goth. *standan* 'to stand' (< **steh₂-*).
Inherited **t* changed to Latin *d* in final position. For example, the 3rd sg. secondary active verbal ending **-t* appears as *d* in Old Latin (cf. FECED 'X made'). This *-d* was sometimes remade analogically to *-t* (CLat. *fēcit*).

**k* > Lat. *c*: Lat. *centum* '100', Skt. *śatám*, Gk. ἑκατόν, OIr. *cét*, Goth. *hund* (< **(d)kmtom*);
Lat. *dīcō* 'I say', Skt. *dídeṣṭi* 'X points out', Gk. δείκνῡμι 'I point out', Goth. *ga-teihan* 'to announce' (< **deik-*);
Lat. *octō* 'eight', Skt. *aṣṭā́(u)*, Gk. ὀκτώ, Goth. *ahtau* (< **h₃ektoh₁*).

**k$^{\text{u}}$* > Lat. *qu* (*c*): Lat. *quis* 'who', Skt. *kíḥ*, Gk. τίς, OIr. *cia* (< **k$^{\text{u}}$is*);
Lat. *quattuor* 'four', Skt. *catvā́raḥ*, Gk. (Hom.) τέσσαρες, Goth. *fidwōr* (< **k$^{\text{u}}$etuor-*);
Lat. *sequor* 'I follow', Gk. ἕπομαι, Skt. *sáce*, OIr. *sechithir*, Goth. *saihvan* 'to see' (< **sek$^{\text{u}}$-*).
The labial element of the labiovelars is absorbed in the roundness of a following *o* or *u*, as in *colō* 'I cultivate' (< **k$^{\text{u}}$ol-*, *o*-grade of **k$^{\text{u}}$el-*; cf. Gk. πέλομαι 'I am in movement') and *cūr* 'why' (earlier *quōr*). The same change takes place when **k$^{\text{u}}$* occurs before a voiceless consonant, as in *coc-tus* 'cooked' (*coquō*), and *vōx* 'voice' (< **uōk$^{\text{u}}$-s*), from which the oblique stem *vōc-* was generalized.

6.2.2.1.2. Voiced unaspirated stops

In general, the PIE voiced stops **(b)*, **d*, **g* are represented in Latin as the voiced stops *b*, *d*, *g*, and the labiovelar **g$^{\text{u}}$* by *v/g/gu*; voiced stops merge with the medial reflexes of the voiced aspirated stops (**b$^{\text{h}}$*, **d$^{\text{h}}$*, **g$^{\text{h}}$*, **g$^{\text{u}}$h*).

**b* > Lat. *b*: The sound **b* is rare in the reconstructed protolanguage (see chap. 2). Following are a few examples which are more or less secure:
Lat. *trabs* 'beam of wood', Osc. **tríbúm** 'dwelling', OWel. *treb*, Lith. *trobà*, Goth. *þaúrp* 'field' (< **treb-*?). The *a* of Lat. *trabs* is problematic;
Lat. *baculum* 'staff', Gk. βάκτρον (< **bak-*?);
Lat. *lūbricus* 'slippery', Goth. *sliupan* 'to crawl' (< **sleub-*).

**d* > Lat. *d*: Lat. *domus* 'house', Gk. δόμος, Skt. *dámaḥ* (< **domHos*);
Lat. *dō* 'I give', Gk. δίδωμι, OLith. *dúomi*, Arm. *tam*, Skt. *dádāmi* (< **deh₃-*);
Lat. *cor* 'heart' (gen. *cordis*), Gk. (Att.) καρδίᾱ, OIr. *cride*, Goth. *haírtō*, Lith. *širdìs* (< **kerd-*).

Note

1. Several interesting changes take place with inherited *d*. Occasionally *d* changes to *r*, as in *merīdiē* 'midday' (< **med(i)ei-diē*) and *maredus* 'wet' (= *madidus*), reflecting a probable dissimilation of *d* ... *d* to *r* ... *d*. Cf. also *perēs* 'feet' (= *pedēs*) and IRVS 'the Ides' (= *īdūs*). Lat. *d* is often replaced by *l*, as in *lingua* 'tongue' (OLat. *dingua*, Goth. *tuggō*), *lacrima* 'tear' (OLat. *dacruma*, possibly borrowed from Gk. δάκρῡμα), and the forms *oleō* 'I smell' and *olfaciō* 'I smell' opposite the forms *odor* 'a smell' and *odefacit* 'X smells'. Some of these forms may have alternative explanations. *Lingua*, for example, may have its *l* from the associated verb *lingere* 'to lick', while *lacrima* may get its *l* from a neighboring dialect. Final **d* is problematic for PIE in most instances, since voiced consonants were marked in final position. It may be the case that original final **d* is preserved after short vowels, as in *ad* 'to', *sed* 'but', and especially *quid* 'what', though it is also possible that these final *d*'s are originally part of some clitic formation (e.g. **-de*), which would make them historically non-final. Final *-d* is lost after long vowels in Classical Latin (cf. OLat. SENTENTIAD, CLat. *sententiā* 'by the opinion').

**g* > Lat. *g*: Lat. *genus* 'race, kind', Gk. γένος, Skt. *jánaḥ*, Arm. *cin* 'birth' (< **genh₁-os-*);
Lat. *agō* 'I drive', Gk. ἄγω, Skt. *ájāmi*, OIr. *ad-aig* 'X drives to' (< **h₂eg-*);
Lat. *gaudeō* 'I rejoice', Gk. (Dor.) γᾱθέω, MIr. *gūaire* 'noble', Toch. A, B *kātk-* 'to desire' (< **geh₂ud^{h}-*);

**g^{ʷ}* > Lat. *v* (initially and prevocalically): Lat. *veniō* 'I come', Gk. βαίνω, Toch. A *kum-*, Goth. *qiman* 'to come' (< **g^{ʷ}em-*);
Lat. *vīvus* 'alive', Skt. *jīváḥ*, OIr. *biu*, *beo*, Goth. *qius*, Gk. βίος 'life' (< **g^{ʷ}ih₃-*);
OLat. *fīvō* (CLat. *fīgō*, analogically formed from the perf. *fīxī*) 'I fasten',

Lith. *dýgti*, 'to spring up', OIc. *dīkin* 'ditch', Umbr. **fiktu** 'you shall attach' (< $*d^heig^u$-).
As with $*g^uh$ (see below), $*g^u$ remains labiovelar after [ŋ], becoming *gu*; Lat. *unguō* 'I anoint', Arm. *awcanem*, Skt. *anákti* 'X anoints', Umbr. **umtu** 'you shall anoint', OHG *ancho* 'butter', OIr. *imb* (< $*h_3eng^u$-);
Lat. *inguen* 'groin', OIc. *økkr* 'swelling' (< $*ng^uen$-).
Before *r* and *l*, $*g^u$ loses its labial coarticulation and becomes *g*: Lat. *gravis* 'heavy', Skt. *gurúḥ*, Gk. βαρύς, Goth. *kaúrjōs*, Lith. *gùrstu* 'I lie down' (< $*g^ureh_2u$-). The details of this derivation are problematic, however; cf. also Lat. *glāns* 'acorn', Arm. *kałin*, Gk. βάλανος, Lith. *giléndra* 'good harvest' (< $*g^uelh_2$-).

6.2.2.1.3. Voiced aspirated stops

Apart from exceptional cases with specifiable phonetic conditioning, the voiced aspirated stops $*b^h$, $*d^h$, $*g^h$, and $*g^{u}{}^h$ developed into voiceless fricatives in word-initial position. In word-internal position they followed several lines of development: $*b^h$ and $*d^h$ lost their aspiration and developed into the plain voiced stops *b* and *d*, merging with the reflexes of the plain voiced stops **b* and **d*. Word-internal $*g^h$ has several developments, but the normal reflex of this sound in Latin is *h*. Medial $*g^{u}{}^h$ develops into Lat. *v*.

Most likely, the general distribution of the voiced aspirates into initial fricatives and of the non-velars **b* and **d* into non-initial stops in Latin was conditioned by the Proto-Latin word-initial stress. As noted above, initial emphatic stress is usually posited for Proto-Latin because of the pattern of vowel weakening (to *i*) and syncope in the unstressed syllables of words which can be reconstructed with full vowels, e.g. *aetās* 'age' < **aevitās*, *afficiō* 'influence' < **ad+faciō*, *auceps* 'bird-catcher' < **avi+caps*, and so on. Miller (1977a: 38) has shown that there is an interaction between stress and aspiration in initial and non-initial syllables. Following his suggestions, the split of the voiced aspirates into two separate phonemic series can be accounted for not only in Latin, but also in Oscan–Umbrian (see Baldi—Johnson-Staver 1989: 97–98 for discussion). The unmarked developments of these sounds can be represented in the following scheme, with possible intermediate stages. The voiceless outcomes of the initial voiced aspirates show a consistent devoicing and spirantization. Exceptional cases and instances of phonetic conditioning are discussed below.

Word-initially

PIE	Proto-Latin	Latin
$b^h >$	$p^h > \Phi >$	f
$d^h >$	$t^h > \theta >$	f
$g^h >$	$k^h > \chi >$	h
$g^{u}{}^h >$	$k^{u}{}^h > \chi^u >$	f

Word-internally

PIE	Proto-Latin	Latin
$b^h >$	β	b
$d^h >$	ð	d
$g^h >$	ɣ > χ	h
$g^{ʷh}$	$ɣ^ʷ$	v

Some examples.

PIE	
($*b^h$-):	$*b^h$éroh$_2$ > $*p^h$érō > *ɸérō > ferō 'I carry'
($*d^h$-):	$*d^h$úh$_2$mos > $*t^h$ûmos > *θûmos > fūmus 'smoke'
($*g^h$-):	$*g^h$éim- > $*k^h$éim- > *χíem > hiem-s 'winter'
($*g^{ʷh}$-):	$*g^{ʷh}$én- > $*k^{ʷh}$én- > $*χ^ʷ$én- > (dē-)fen-dō 'I repel'
($*-b^h$-):	*h$_2$élb^{h}os > *álβos > albus 'white'
($*-d^h$-):	*h$_1$úid^{h}eu- > *víðua > vidua 'widow'
($*-g^h$-):	*uég^hoh$_2$ > *uéɣō > *uéχō > vehō 'I drive'
($*-g^{ʷh}$-):	*snéig^{ʷh}- > *snéi$ɣ^ʷ$- > (acc.) niv-em 'snow'.

See Joseph—Wallace (1994) for counterarguments.

Because PIE had only a single fricative *s*, the aspirated series provided the bulk of the new fricatives in Latin, establishing a voiceless series *f*, *h*, and *s*. Plain voiced stop reflexes of aspirated voiced stops merged with the reflexes of the plain voiced stops, establishing a voiced series *b*, *d*, and *g*. Individual developments are as follows.

$*b^h$ > Lat. *b*, *f*

(*b*) Lat. *nebula* 'fog', Gk. νεφέλη, Skt. *nábhaḥ*, Hitt. *nepiš* 'sky, heaven', OHG *nebul* 'mist' (< $*neb^h$-);
Lat. *lubet* (*libet*) 'it pleases', OCS *ljubŭ* 'love', Skt. *lúbhyati* 'X desires', Goth. *liufs* 'dear' (< $*leub^h$-);
Lat. *ambō* 'both', Gk. ἄμφω, Skt. *abhí* 'around', OIr. *imb-* (< *h$_2$mb^{h}oh$_1$).

(*f*) Lat. *frāter* 'brother', Gk. φράτηρ 'member of a phratry', Skt. *bhrā́tā*, OIr. *bráth(a)ir*, (< $*b^h$reh$_2$tēr);
Lat. *ferō* 'I carry', Gk. φέρω, Arm. *berem*, Skt. *bhárāmi*, Goth. *baíran* 'to carry' (< $*b^h$er-);
Lat. *fīdō* 'I trust', Gk. πείθομαι 'I persuade', Alb. *bē* 'oath', Goth. *baidjan* 'to force' (< $*b^h$eid^h-).

*d^h > Lat. *d, f*

(*d*) Lat. *aedēs* 'building, temple', Gk. αἰθος 'fire', Skt. *édhaḥ* (< *h_2eid^h-);
Lat. *medius* 'middle', Gk. μέσος, Skt. *mádhyaḥ*, Goth. *midjis* (< *med^hio-);
Lat. *vidua* 'widow', Skt. *vidhávā*, OIr. *fedb*, Goth. *widuwō* (< *h_1uid^heu-).

(*f*) Lat. *fūmus* 'smoke', Gk. θῦμός, Skt. *dhūmáḥ*, Lith. *dúmai* (< *d^huh_2mo-);
Lat. *faciō* 'I do', OHG *tōm*, Gk. τίθημι 'I place', Skt. *dádhāmi* (< *d^heh_1-/d^hh_1-);
Lat. *foveō* 'I warm', Gk. θέπτανος(?) 'ignited', Skt. *dáhati* 'X burns', Lith. *degù* 'I burn' (< *$d^heg^{\mu h}$-).

Conditioned developments (d^h).*
1. *d^h becomes *b* (via β?) before *r*: cf. Lat. *glaber* 'bald', OIc. *glaðr* 'smooth', Lith. *glodùs* (< *$g^hleh_2d^h$-);
2. *d^h becomes *b* (via β?) after *r*: cf. Lat. *verbum* 'word', Goth. *waúrd*, Lith. *vařdas* 'name' (< *ur-d^h-, suffixed zero-grade form of **uer-* 'speak');
3. *d^h becomes *b* (via β?) before *l*: Lat. *stabulum* 'standing-room', Umbr. *staflarem* (acc.) 'for Stabilis (Jovius)', OHG *stadal* 'stand' (< *sth_2-$d^hl(om)$).

*g^h > Lat. *h*

(*h*) Lat. *(h)ānser* 'goose', Skt. *haṁsáḥ*, Gk. χήν, OHG *gans* (< *g^hans-);
Lat. *hostis* 'stranger', Goth. *gasts* 'guest', OCS *gostĭ* (< *g^hosti-);
Lat. *vehō* 'I drive', Gk. ὀχέω, Skt. *váhāmi*, Goth. *ga-wigan* 'to move' (< *ueg^h-).

Conditioned developments (g^h).*
1. *g^h becomes *f* before *u* initially: cf. Lat. *fu-n-dō* 'I pour', Gk. χέ(Ϝ)ω, Skt. *juhóti* 'X pours', Goth. *giutan* 'to pour' (< *g^heu-);
2. *g^h becomes *v* medially when followed by *u*: cf. Lat. *brevis* 'short', Gk. βραχύς, Goth. *ga-maúrgjan* 'to shorten' (< *$mreg^hu$-). It appears that the sequence *g^hu is rephonologized in Latin as *$g^{\mu h}$, since the two develop in basically the same way (see below);
3. *g^h becomes *g* after [ŋ]. In this environment *g^h develops into a stop, as do other voiced aspirates in medial position: cf. *fingō* 'I shape' (also derived nominal *figūra*), Skt. *déhmi* 'I smear', Gk. τεῖχος 'wall', OIr. *digen* 'firm' (< *d^heig^h-). PIE *g^h also becomes *g* before the liquids *l* and *r* if *glaber* 'bald' (OIc. *glaðr* 'smooth', Lith. *glodùs*) is from *$g^hleh_2d^h$- and *gradior* 'I step' (Goth. *grid* 'a step', OCS *grędǫ* 'I come') is from *g^hred^h-.

$*g^{\mu h}$ > Lat. *f*, *v*

(*f*) Lat. *formus* 'warm', Gk. θερμός, Skt. *gharmáḥ* 'heat', OPruss. *gorme* (< $*g^{\mu h}ermo$-);
Lat. *dē-fendō*, 'I repel', Skt. *hánti* 'X kills', Arm. *gan* 'cudgel', Gk. θείνω 'I kill', OIr. *gonim* (< $*g^{\mu h}en$-); and possibly Lat. *fallō* 'I deceive', Gk. σφάλλω 'I cause to fall', OHG *fallan* 'to fall' (< $*(s)g^{\mu h}el$-), though the correspondences here are inexact.

(*v*) Lat. (acc.) *nivem* 'snow', Gk. νίφα, OIr. *snigid*, Lith.*sniẽgas*, Goth. *snaiws* (< $*sneig^{\mu h}$-);
Lat. *voveō* 'I vow', Skt. *vāghát-* 'devotee', Gk. εὔχομαι 'I vow', Arm. *gog* 'say' (< $*ueg^{\mu h}$-).

Conditioned developments ($*g^{\mu h}$).

1. $*g^{\mu h}$ > *g* after [ŋ] and *r*: cf. Lat. *ninguit* 'it snows', Gk. νίφα 'snow', Ir. *snigid*, Lith. *sniẽgas*, Goth. *snaiws* (< $*snei$-*n*-$g^{\mu h}$-); and possibly Lat. *tergus* 'back', Gk. στέρφος 'stiff' (< $*(s)terg^{\mu h}$-). The change of $*g^{\mu h}$ to *g* is consistent with the development of other aspirated voiced stops as plain voiced stops, such as $*b^h$ to *b*, $*d^h$ to *d*, and so on. It also shows a conditioned merger with the plain voiced reflex of $*g^h$.

6.2.2.2. Fricatives

Although PIE had only one fricative, **s*, Latin established a series of voiceless fricatives by partially rephonologizing the PIE voiced aspirates into voiceless fricatives. The development of **s* into Latin follows several divergent lines.

**s* > *s* in Latin initially, finally, before and after voiceless stops, and after *n*.

Initially

Lat. *sequor* 'I follow', Skt. *sáce*, Gk. ἕπομαι, Lith. *sekù*, OIr. *sechithir* (= Lat. *sequitur* 'X follows') (< $*sek^{\mu}$-);
Lat. *septem* 'seven', Skt. *saptá*, Gk. ἑπτά, OIr. *secht n-*, Goth. *sibun* (< **septm*);
Lat. *speciō* 'I see', Skt. *spáśati* 'X sees', Gk. σκέπτομαι 'I look at', OHG *spehōn* 'to spy' (< **spek*-).

Finally

Lat. *genus* 'race', Skt. *jánaḥ*, Gk. γένος (< $*genh_1$-*os*-);
Lat. *mūs* 'mouse', Skt. *mū́ṣ*-, Gk. μῦς (< **mūs*);
(nom. pl.) Lat. *dentēs* 'teeth', Skt. *dántaḥ*, Gk. ὀδόντες (< $*h_3dontes$).

Note

1. A significant development with final *s* is its loss after short vowels and before a consonant. This was a regular phonetic process, with the *s* probably passing to *h* before disappearing. The change is already evident in inscriptions from the third century B.C.E. and earlier (cf. CORNELIO = *Cornelios*, MILITARE = *mīlitāris*, FOVRIO = *Fūrius*). However, since *s* was prominent as a case-marker, particularly in the nominative singular and accusative plural (cf. *fīlius* 'son', *hortōs* 'gardens', etc.), there was analogical and grammatical pressure to restore it. No doubt the survival of *s* in protected environments such as those in *dux* 'leader' (< **duc-s*) and *mīles* 'soldier' (< **mīlet-s*) was instrumental in preserving the *s* analogically in the face of a strong phonetic tendency to eliminate it or at best weaken it to *h*. Also instrumental in its preservation was the fact that the accusative singulars ending in *-m* (e.g. *turri-m* 'tower' and *dominu-m* 'master') were susceptible to homophony with the nominatives in *-s*, since both were subject to the same kind of final loss. Such a homophony may have been viewed as "insidious" by Latin speakers, since it eliminated a crucial distinction, namely that between the nominative and accusative singulars of some declensions.

Before and after voiceless stops

Lat. *sistō* 'I stand', Skt. *tíṣṭhāmi*, Gk. (Dor.) ἵστᾱμι, OHG *stān* 'to stand', Lith. *stóju* 'I walk' (< **steh*$_2$-);
Lat. *axis* 'axle', Skt. *ákṣaḥ*, Gk. ἄξων, Lith. *ašìs*, OHG *ahsa* (< **h*$_2$*eks-*).

After *n*

Lat. *mēnsis* 'month', Skt. *más*, Gk. μήν, Goth. *mēnōþs* (< **meh*$_1$*ns-*). However, while the *s* was preserved in this environment, the nasal is generally lost. Cf. such forms as *cōsol* 'consul' for *cōnsul*, *mēsis* for *mēnsis*, as well as acc. pl. forms such as *dominōs* 'masters' (< **domin-on-s*).

Conditioned developments

Before r.

**sr-* > *fr-*: cf. Lat. *frīgus* 'cold', Gk. ῥῖγος (< **sriHg-*); this appears to be the only example.

Note

1. Most probably, *s* passed through a stage *θ*, which is perceptually close to *f*. Medially before *r*, *s* passed through the stage *θ* but merged with the reflex of **d*^{h}, resulting in *b*, as in *stabulum* 'standing-room', Umbr. *staflarem* (acc.) 'for Stabilis (Jovius)', OHG *stadal* 'stand' (< **sth*$_2$-*d*^{h}*lo-*). Examples of *b* from **s* can be seen in Lat. *cerebrum* 'brain' (< **kerh*$_2$*s-ro-m*), cf. Gk. κέρας 'horn', Skt. *śíras-* 'head'; also Lat. *fūnebris* 'funereal' (< **fūnes-ri-s*), cf. *fūnus* 'funeral'.

After r and l.

**s* assimilates completely to a preceding *r* or *l*. Infinitive forms such as *fer-re* 'to carry' (< **fer-se*) and *vel-le* 'to wish' (< **vel-se*)—cf. *es-se* 'to be'—illustrate this change.

Before sonorants other than r.

Inherited **s* disappears before sonorants other than *r* (where it becomes *f* or *b*). This change took place initially, as can be seen in Lat. *nurus* 'daughter-in-law', Skt. *snuṣā́*; Lat. *nix* 'snow', Goth. *snaiws*; and medially, where the loss of **s* (*z*) induced compensatory lengthening of the preceding vowel: cf. Lat. *nīdus* 'nest', OHG *nest*, MIr. *net*, Skt. *nīdáḥ* 'resting place', Arm. *nist*, (< **ni-sd-os*); Lat. *prīmus* 'first' (< **prismo-s* < **pri-so-mo-*, cf. *priscus* 'ancient'); Lat. *quīdam* 'a certain one' (< **quis-dam*). Interestingly, when **s* occurred before *g* it changed to *r*, as can be seen in Lat. *mergō* 'I immerse' (Skt. *májjati* 'X submerges', Lith. *mazgóti* 'to wash'), though this appears to be the only example of this change.

*Intervocalically. **Rhotacism.*** The evidence of Latin orthography suggests that rhotacism, by which intervocalic etymological **s* is changed to *r*, was operative at least up to the mid fourth century B.C.E. Cicero, for example (*Fam.* 9.21.2), comments that in 339 Papirius Crassus officially changed the citation of his name from Papisius. Further, Appius Claudius Caecus, Censor in 312 and Consul in 307 and 296, established the spellings of the names *Valerī* and *Fūrī*, both of which were formerly spelled with *s*. These orthographic adjustments have been taken as evidence that rhotacism had restructured these forms by the middle of the fourth century B.C.E.

The phonetic transition from *-s-* to *-r-* is discussed by Seelmann (1885). Inherited voiceless **-s-* became voiced under specified phonetic conditions; one such condition was when it was intervocalic, i.e. *VsV*. Latin, Faliscan, and Umbrian show the complete phonetic passage of **-s-* to *-r-*, a change which also occurs in final position in later Umbrian. Oscan, on the other hand, preserves the purported intermediate stage *-z-*: cf. Osc. gen. pl. *-āzum* vs. Lat. *-ārum*, Umbr. *-āru*.

There are many forms in Latin which were restructured by this rule and which can only be recovered by etymological analysis. For example, all active infinitives which end in *-re* are derived historically from an earlier **-se*: cf. *amā-re* 'to love', *dēlē-re* 'to destroy', *cape-re* 'to take', *audī-re* 'to hear'; and imperfect subjunctives in *-re-m* are to be derived from an earlier **-se-m* (cf. *amā-re-m*; *dēlē-re-m*; *cape-re-m*; *audī-re-m*). Etymological **s* can be established by reference to such forms as *es-se* 'to be' and *fu-is-se* 'to have been' for the infinitives, and *es-se-m* and *fu-is-se-m* for the imperfect subjunctives. Such diachronic restructurings in which **-se* is recoverable, as well as the even more distant *vel-le* 'to wish' (< **vel-se*), *nōlle* 'to be unwilling', and *fer-re* 'to carry' (< **fer-se*), are not transparently related to the actually occurring infinitives in **-re*. Similarly restructured forms are *dir-imō* 'I

take apart' and *dir-(h)ibeō* 'I lay apart' (cf. *dis-cēdō* 'I divide', *dis-pōnō* 'I arrange', etc.), *aurōra* 'dawn' (< *$h_2$eusōs-), cf. Gk. (Lesb.) αὔως, Skt. *uṣā́ḥ*; *cūra* 'care' < *kois-eh$_2$, *cūrō* 'I care' < *kois-ioh$_2$, cf. OLat. COIRAVERVNT 'they have cared', Paelign. *coisatens* 'they have arranged' (= Lat. *cūrāvērunt*); gen. pl. of the 1st dec. fem. *-ārum*, Umbr. *-āru*, from pronominal < *-āsom: cf. Osc. *egmazum* (= Lat. *rērum*) 'of things', Skt. *tā́sām*, 'of them', Gk. (Hom.) τάων.

Occasional information on earlier forms of words with etymological *s can be found in the works of the Roman grammarians. Varro, for example, (*Ling.* 7.26–27) mentions "... foedesum foederum ('treaty'), plusima plurima ('more'), meliosem meliorem ('better'), asenam arenam ('shore'), ianitos ianitor ('doorkeeper') ...". Quintilian (*Inst.* 1.4.13) notes: "nam ut Valesii Fusii in Valerios Furiosque venerunt, ita ... etiam ... lases,[16] fuerunt" ['for just as (the names) *Valesii* and *Fusii* have turned into *Valerios* and *Furios*, so ... also ... has *lases* 'household gods']. Finally, Paulus Diaconus (323.5–7 Lindsay, quoted in Niedermann 1953: 103): "s pro r littera saepe antiqui posuerunt, ut majosibus, miliosibus, lasibus, fesiis pro majoribus, melioribus, laribus, feriis" ['the ancients often set down s for the letter r, (as can be seen in word pairs cited such as) 'greater', 'better', 'household gods', and 'festivals']. Cf. Seelmann (1885: 314–315) for a listing of the classical accounts.

Inscriptional information also provides some significant data on earlier forms with *s*. Cf. *CIL* 1.603: FLVSARE, a dialect form which shows neatly how the CLat. *flōrālī* 'floral' dissimilated the desinential *-r-* to *-l-* after rhotacism had changed the original *-s-* to *-r-*; *CIL* 1.200: VIASIEIS (*viārīs* 'belonging to the roads'); *CIL* 1^2.2: ESED (*erit* 'he will be'). Inscriptional Latin (in Greek letters) MHZΕΣ 'month' = *mēnsis* (*CIL* 10.719) is instructive, since it shows the [z] form.

While rhotacism seems straightforward enough as a historical process, there are exceptions to the process which complicate the issue. Exceptions to the rule fall into several categories.

a. Compounds in which the component parts are derivationally transparent and were apparently recognizable to speakers: cf. *dē-sum* 'I am down', *dē-sinō* 'I leave off', *dē-subitō* 'suddenly', *ni-si* 'unless', *bi-sulcus* 'split into two parts', *faeni-sex* 'rustic', and *pedi-sequus* 'lackey'; also the forms *dē-super* 'from above' (Caes. *BGall.* 1.52.5); *re-sēminet* 'it seeds/produces again' (Ov. *Met.* 15.392), and the apparent overgeneralization of the participial and perfect forms of the root *pōnō* 'I place', viz. *positus*, *posīvī* (< *po-sinō), where the *po- is taken as a sort of prefix ('back'?) and the root is taken as *-sinō*.
b. Words in which there is an *r* at the beginning of the original following syllable. Here are to be found such forms as *Caesar* (cf. *caesariēs* 'head of hair', Skt. *késaraḥ*), *miser* 'wretched' (cf. *maereō* 'I grieve'), and the place name *Pisaurum*. Interesting is *soror* 'sister' (< *suesōr), cf. Skt. *svásā*, Goth.

16 The singular form *Lār* is a back formation based on the more common plural form *Larēs* 'household gods'.

swistar, where the choice was between *s - s - r* or *s - r - r*. Latin opted for the *s - r - r* structure, which never passed to **solor*.

c. Loanwords, either from non-rhotacizing dialects such as Sab. *fasēna* (= *harēna*) 'shore', or from other languages, such as Greek—cf. *basis* 'base', *Mūsa* 'Muse', *nausea* 'seasickness'—or Celtic—cf. *cisium* 'light two-wheeled vehicle', *gaesum* 'long heavy javelin'; or *casa* 'hut', which is of unknown origin.

d. Intervocalic *-ss-*, whatever its source, which simplifies to *-s-* in Latin under certain phonetic conditions, but remains voiceless. This secondary *-s-* never passed to *-z-* and then to *-r-*. Examples of *-ss-* come from a variety of sources.

   i. *-ss-* from combinations of dental plus dental, such as **-dl/t-t-*, etc., which presumably went through the intermediate stage of **-tst-*: cf. past participial forms *sessus* (*sedeō* 'I sit'), *passus* (*patior* 'I suffer'), *cāsus* (*cadō* 'I fall'), *vīsus* (*videō* 'I see'), *ūsus* (*ūtor* 'I use'). Thus *vīsus* < **uid-to-* via **uisso-*. See Vennemann (1989a).

   ii. Old Latin *-ss-*, indicated by occasional occurrences in the literature: cf. *caussa* (*causa*) 'cause'; the sequence *-ōssus*, as indicated by citations such as RELIGIOSSAE 'religious' (*religiōsae*) in *CIL* 1^2.590, FORMOSSA 'beautiful' (*formōsa*) in *CIL* 6.22377.3, and QVAESSO 'I beg' (*quaesō*) in *CLE* 420.8. The sequence *-ss-* was simplified to *-s-* by regular rule after a long vowel or diphthong, as in *mīsī* 'I sent' < **mīt-sī* (cf. RE(PRO)MEISS- in *CIL* 1^2.592). Note also Plautine *aussim* 'I might dare' (*ausim*) in *Merc.* 301. An interesting example is Plautine *nāssum* (acc.) 'nose' (*Merc.* 310), which stands beside *nārēs* 'nostrils' < **nāsēs* (cf. OPruss. *nozy* 'nose', Lith. *nósis*, etc.). This is an apparent case of "expressive doubling" in the popular language which is of further interest because it preserves the long vowel *ā* and the geminate *-ss-* together; cf. the cognomen *Vārrō*, based on *Vārus* 'bow-legged'(?).

By contrast, there are examples of rhotacism in which synchronic morphophonemic alternations between *s* and *r* are openly visible in paradigmatically and occasionally derivationally related forms, as well as those few forms which contain analogical *-r* in the nominative singular. The existence of these forms might be interpreted to mean that the rhotacism rule was still operative in the classical period.

Paradigms containing *s* : *r* alternations include the following: *aes*, *aeris* 'copper'; *flōs*, *flōris* 'flower'; *opus*, *operis* 'work'; *mōs*, *mōris* 'custom'; *rōs*, *rōris* 'moisture'; *mās*, *maris* 'male'; *sum*, *est* 'I am, X is' vs. *erō*, *eram* 'I will be, I was'; (part.) *gestus*, *gerō* 'I carry about'; (part.) *haustus*, *hauriō* 'I draw up'; (part.) *questus*, *queror* 'I complain'; *hesternus* 'yesterday' (adjective), *herī* 'yesterday' (adverb); OLat. *arbōs*, *arboris*[17] 'tree'; *honōs*, *honōris* 'honor'; *labōs*, *labōris* 'work'; *odōs*, *odōris* 'smell';

17 The short *o* of *arboris* is inherited; *arbōs*, *arboris* is one of two or possibly three *s*-stem nouns which did not generalize the long vowel of the nominative throughout the para-

lepōs, lepōris 'charm'. Monosyllabic nominatives in *-s* were consistently preserved, while some others were later restructured analogically to a paradigmatically consistent *-r*, viz. *arbor, honor, labor, odor*, and *lepor.*

The existence of paradigmatically related forms such as *flōs, flōris, aes, aeris*, and derivationally related forms such as *herĭ, hesternus* suggest that rhotacism may be a synchronically productive phonological process. If this is so, it would follow that speakers of Latin might have access to the rhotacism rule as part of their phonological repertoire. So the synchronic alternants pose a problem concerning the status of the rule as a diachronic or synchronic process. There are three possible approaches.

a. There is one rule of rhotacism which accounts for the historically motivated forms and the synchronic alternants. By this account the rule was not dead by the mid fourth century but was kept alive by the *s/r* alternating pairs. This will be referred to as the unitary analysis.
b. There are two rules of rhotacism, one which accounts for the historical forms such as the infinitives in *-re* and the lexical forms like *aurōra*, and the other which handles the synchronically alternating pairs of the *labōs, labōris* type. Touratier (1975) has argued that forms exhibiting synchronic alternations are ones in which there is a morpheme boundary (+) following the *s*. By this analysis the old rule is stated in purely phonological terms (**VsV*), while the later (morphophonemic) rule requires the inclusion of a morpheme boundary in the specification of its environment (*Vs+V*). This restriction on the rule accounts for the fact that it does not apply across the board to every synchronic *VsV*. This will be referred to as the bipartite analysis.
c. Rhotacism was dead as a rule in the earlier period but left behind fossilized phonology which has been morphologized in the paradigms exhibiting the alternation, as in the *labōs, labōris* type. By this account there is no synchronic rhotacism, only lexicalized allomorphy. This will be referred to as the morphological analysis.

The solution to the status of rhotacism seems to lie principally in the analysis of its exceptions. The unitary and bipartite analyses, though different in details, hold rhotacism to be synchronically operative throughout the history of the language. This position has an obvious drawback, namely that Old Latin forms with *-ss-* which were later simplified to *-s-* were not affected by the rule. If rhotacism was still active in the classical period, one might reasonably expect **caura* for *causa*, for example, or **mīrī* for *mīsī*, **cārus* for *cāsus*, **vīrus* for *vīsus*, **ūrus* for *ūsus*, and so on. This prediction holds whether rhotacism is considered as one phonological rule which applied throughout the archaic and Classical Latin periods (the unitary analysis), or whether the rule is split in two, with the later rule sensitive to the existence

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digm. The others are the theonym *Cerēs, Cereris*, and possibly *mulier, mulieris* 'woman' if it is from **muliĕs* and not **mulies*. There appears to be no phonological reason for this alternation. It is perhaps significant that these three forms are all feminine, while other members of the *s*-stem group are masculine

of a morpheme boundary (the bipartite analysis). In each of the examples mentioned, the target *s* is followed by a morpheme boundary. In effect, either of the synchronic analyses forces the claim that speakers of the language had access to historical information in judging which forms were susceptible to the rule and which were not; that is, they must have known which forms contained etymological **s* and which contained secondary *s*. This is an unlikely scenario at best, one which relies on conceptions of linguistic structure with excessive abstraction and synchronically unmotivated underlying forms.

An analysis of the exceptions to the rhotacism rule points to a solution.

a. Given the transparency of compounds like *dē-sum*, *dē-sinō*, *dē-subitō*, *ni-si*, and so on, their non-participation in the rule is to be expected. They confirm the well-established post-Neogrammarian principle that sound change is not blind (Kiparsky 1995). Such forms were apparently recognizable to speakers as compounds which contained synchronically active forms with *s* (*sum*, *sinō*, *subitō*, *sī*).
b. The phonotactic prohibition of *s* before a syllable beginning with *r* (*miser*/ *maereō*, etc.) is not helpful, since it would have been operative at any time in the history of the language. In not one of these cases is access to remote historical information a necessity for speakers to determine the applicability or non-applicability of the rhotacism rule, as it is with *causa*, *religiōsae* type.
c. Given the psycholinguistic evidence that speakers can distinguish native from non-native vocabulary (Baldi—Palermo—Broderick 1985), it is not surprising to find loanwords like *basis* and *asinus* excluded from the rhotacism rule, regardless of when they were imported into Latin.
d. (i). Synchronic *-s-* originating in the reduction of *-ss-* from combinations like **-d/t-t-*, such as *cāsus*, *vīsus*, and *ūsus* might be motivated synchronically by the strength of unity with their imperfective forms, in which *cadō*, *videō*, and *ūtor* and the like are paradigmatically accessible. This regularity (dental in the imperfective, sibilant in the perfective) assumes a morphological integrity to the paradigm. The derivational unity of the *-d/t-* : *-s-* paradigm (e.g. *cadō* : *cāsus*) is strengthened by the existence of other paradigms such as *mittō*, *missus* and *patior*, *passus*, which show *-d/t-* : *-ss-*. The *-s-* variant occurs after a long vowel (*cāsus*), while the *-ss-* combination occurs after a short vowel (*missus*).
d. (ii): This leaves exceptions reflecting Old Latin *-ss-* such as *caussa* 'cause' (CLat. *causa*), RELIGIOSSAE 'religious' (CLat. *religiōsae*), FORMOSSA 'beautiful' (CLat. *formōsa*), and QVAESSO 'I beg' (CLat. *quaesō*), as well as the exceptional *nāssus* 'nose' (CLat. *nāsus*). Given that there is no synchronic (morphophonemic) support for these forms to prevent them from converting to *-r-* in the classical period, and that there is no way for classical speakers to have access to these archaic forms, it is clear that rhotacism cannot be interpreted as a productive synchronic rule of Latin and that neither

the unitary analysis nor the bipartite analysis can be upheld. Nothing in these analyses would prevent the conversion of these forms to **caura*, **religiōra*, etc. A key factor in this solution is the existence of a morpheme boundary before the target *-s-* in each of these forms (*caus+a*, *religiōs+ae*, *fōrmōs+ae*, and *quaes+ō*), fitting them in under Touratier's condition for synchronic conversion to *r*.

A form which provides further insight into the issue is *iānitōs* (for etymological *iānitor*) 'doorkeeper', mentioned by Varro (*Ling.* 7.27). This unique analogy is phonetically unmotivated and unpredictable, suggesting a paradigmatic (morphological) restructuring of the nominative to conform to other *s/r* paradigms. In this sense it is not unlike the analogically restructured nominatives in *r* like *honor* (with regular shortening of the *ō* before final *-r*), *honōris* 'honor', which also restore paradigmatic regularity, though not in every possible case. Other candidates for such a restructuring process, such as *corpus*, *corporis* 'body', never developed a nominative form **corpor*, and there is really no way to know in this case why *honōs* was affected while *corpus* was not.[18] It adds weight to the conclusion that rhotacism was dead as a phonological process before the classical period, and that those forms exhibiting the *s/r* alternation such as *sum* : *eram* and *labōs*, *labōris* are historical relics which can only be analyzed synchronically in terms of lexicalized allomorphy (solution C), and not in terms of a phonological (solution A) or morphophonemic (solution B) process.

One final note of support for the morphological solution is found in the restructured forms *fulgur* 'a flash of lightning' and *rōbur* 'oak', which completely superseded earlier *fulgus* and *rōbus*. These two neuter nouns, but especially *rōbur*, which is the only neuter tree, probably favored the restructured *-r* form to avoid alignment with feminine nouns of the second or fourth declension. All this leads to the conclusion that there is no synchronic rhotacism in Latin.

6.2.3. The structure of the Latin consonant system

The Latin consonant system is shown in table 6.3.

Notes to the consonant chart

1. The Latin voiceless stops *p*, *t*, *k*, and *qu* were pronounced without significant aspiration. Evidence for this can be found in the development of these sounds into the Romance languages, where the unaspirated pronunciation prevails, and in the

18 It is possible that there is some phonological conditioning involved in the extension of the *-r* to the nominative. The restructuring is restricted to polysyllabic words and generally favors words in which the vowel preceding the **-s* in the nominative is identical to the vowel preceding the *-r-* in the oblique cases.

Table 6.3. Classical Latin consonants[a]

	Labial	Labiodental	Alveolar	Velar	Labiovelar	Glottal
Obstruents						
Stops						
Voiceless	p		t	k ⟨c⟩	$k^{\underline{u}}$ ⟨qu⟩	
Voiced	b		d	g	$g^{\underline{u}}$ ⟨gu⟩	
Fricatives		f	s			h
Sonorants						
Nasals	m		n			
Lateral			l			
Trill, Tap			r			
Semivowels	u ⟨v⟩		i ⟨j⟩			

a Where different from phonemic representations, conventional letters are given in angle brackets.

Greek and Latin transcriptions of borrowed words. For example, Greek rendered the Latin names *Capitōlium* and *Quintus* as Καπετώλιον and Κόιντος, indicating that the Latin voiceless stops corresponded to the Greek unaspirated stops. The Latin digraphs *ph*, *th*, and *ch* (cf. *philosophia* 'philosophy', *thēsaurus* 'treasure', *māchina* 'machine') are not found in early inscriptions and are prevalent in Latin orthography only from about the middle of the second century B.C.E. At that time they become standard in transcribing Greek names and other loanwords containing the Greek aspirated stops φ, θ, and χ, suggesting that at least in some registers Latin speakers were consciously imitating Greek pronunciation. Before that time it was customary for Latin to use the simple *p*, *t*, and *c* to render Greek φ, θ, and χ: cf. inscriptional PILEMO, CORINTO, and the borrowings *purpureus* 'purple-colored' (πορφύρεος) and *tūs* 'incense' (θύος). The Latin voiceless stops were opposed to the voiced stops *b*, *d*, *g*, and *gu* (the last with restricted distribution). Though the ancient grammarians were aware of the voicing distinction, they appear to have developed no clear understanding of the phonetic reality behind it.

2. The system of obstruents shows a fundamental opposition between voiceless stops and fricatives (*f*, *s*, and *h*). There are no voiced fricatives such as *v* or *z*, and the evidence suggests that these sounds were not regular positional phonetic variants of *f* and *s* in Classical Latin. It is likely, however, that preliterary *z* participated in the rhotacism developments, and induced compensatory lengthening of preceding vowels when it was lost (cf. *dīgerō* 'I separate' < **diz-gerō*, *dīnumerō* 'I count out'< **diz-numerō*, alongside *dis-tineō* 'I keep apart', *dis-pensō* 'I weigh out'). Phonetically, *s* was subject to a number of modifications, some of which had far-reaching effects on morphological structure. Chief among these are rhotacism and the loss of *s* in final position.

3. Latin *h* was weakly sounded, a simple puff of aspiration. It is often elided in vocalic contexts, and it fails to have any prosodic effect in accent placement. It is clear from the testimony of the ancients, however, that *h* was a sociolinguistic marker of the upper classes, who preferred to write words like *humerus* 'shoulder'

for *umerus* or *ahēnus* 'made of bronze' for *aēnus*, even though the *h*'s are etymologically unjustified.

4. There are two nasals, *n* and *m*, both voiced. Phonetically *n* had a positional variant [ŋ] before velars and labiovelars in such words as *congregō* 'I collect' or *lingua* 'tongue'. It was often assimilated to surrounding sounds (cf. *im-potēns* 'feeble', *in-tolerāns* 'impatient', *il-lepidus* 'impolite', *ir-rāsus* 'unshaved', all from *in-*) and effaced in certain preconsonantal environments, lengthening and nasalizing the preceding vowel, as in *thēsaurus/thensaurus* 'treasure'. In later Latin, *n*'s in such environments were completely lost. Internal *m* behaved in much the same way as *n* (cf. inscriptional TAN DVRVM for *tam dūrum* 'so hard'), and final *m*, which was very common because of its prominence in inflectional endings, was lost under various phonetic and morphological conditions. This trend is evident already in Early Latin: cf. OLat. OINO 'one', AEDE 'building' for *oinom*, *aidem*, etc. Cf. also the elision and aphaeresis found in such examples as *moriundust* from *moriundum est* or *scrīptust* from *scrīptum est*.

5. The sound /g^{w}/ (written *gu*) occurred only after *n*, as in (OLat.) *sanguen* 'blood', *lingua* 'tongue'. This restricted distribution casts some doubt on its phonemic status, but given the overall parallelism between voiced/voiceless pairs in Latin, and the fact that plain *g* also occurs after nasals (e.g. *fingō* 'I fashion'), it is best to consider *gu* as a separate phoneme. By this analysis, *lingua*, for example, would be represented phonemically as /ling^{w}a/.

6. The voiced sounds *r* and *l* are relatively uncomplicated. The evidence of rhotacism suggests a vibrant articulation for *r*, while the occasional exchange between *r* and *d* suggests a tap (cf. *merīdiē* from **med(i)ei-diē* 'at noon' or *mæredus/madidus* 'wet'). Latin *l* also had two articulations, one palatal (called by the Romans *l exīlis* 'thin *l*'), which occurred before the front vowel *i* and before [l], e.g. *exīlis* 'thin'; the other velar (called by the Romans *l pinguis* 'fat *l*'), which occurred before the nonfront vowels *a*, *o*, and *u* and the front vowel *e*, before consonants, and word-finally, e.g. *albus* 'white'. There are numerous examples in the history of the language of *l* substituting for *d*, which is not surprising considering the fact that *d* and *l* have the same point of closure articulatorily (cf. *lacrima* for OLat. *dacruma* 'tear', *lingua* for OLat. *dingua* 'tongue'). The sequence *l* ... *l* was generally unlicensed in Latin, and when morphological rules produced such sequences, they were replaced by *l* ... *r* (cf. *mīlit-āris* 'military' < **mīlit-ālis*, or *exempl-ar* 'example' < **exempl-al*).

7. The two semivowels *i* (*j*) and *u* (*v*) have parallel distribution. As a consonant, *i* is a palatal glide which occurs chiefly at the beginning of syllables (cf. *eius* 'his', *iam* 'now', *iugum* 'yoke'), while *u* is a labial glide, as found in *videō* 'I see', *caveō* 'I beware', or *silva* 'forest'. According to Allen (1978: 39), intervocalic *i* is pronounced [i̯i̯], so that *eius* 'his, hers' is actually [ei̯i̯us], an analysis which is supported by inscriptional spellings like EIIVS. The consonantal and vocalic realizations of these two sounds were not generally distinguished by the Romans in writing. The practice of writing *j* and *v* for the consonantal variants of these two sounds was not begun until the fifteenth century (Allen 1978: 37–38 n. 2).

6.2.4. *Phonological processes affecting consonants in Latin: Assimilation, dissimilation, metathesis, epenthesis, and the simplification of consonant clusters*

As is to be expected, Latin exhibits a large and varied number of phonological processes by which sounds are altered according to their phonological environment. Changes in vowels such as syncope, weakening, shortening, and lengthening brought about by specific environments have been discussed above. It remains now to outline various phonological processes which affect consonants. Chief among these are the assimilation of consonants, the epenthesis (insertion) of consonants, and the restructuring of groups of consonants, including geminates. Extensive data illustrating these many processes are available in handbooks such as Leumann (1977), Sommer (1977), Niedermann (1953), Monteil (1986, esp. 77–84), and Sihler (1995). In essential aspects, the following account of group behavior of Latin consonants relies on Monteil's classification of these processes.

6.2.4.1. Assimilation

Assimilation is a phonological process whereby two (or more) sounds become more like each other by harmonizing some phonetic feature or features such that the articulatory distance between the sounds is reduced or eliminated.

Assimilations can be classified as follows.

1. *Anticipatory assimilation*, in which the features of phoneme X are modified in anticipation of phoneme Y, such that the sequence $F_1F_2 \rightarrow F_2F_2$ for some features F_1 and F_2. This type of assimilation is also known as *regressive assimilation* or *right-to-left assimilation.*
2. *Perseverative assimilation*, in which the features of phoneme X are continued (perseverated) into phoneme Y, such that the sequence $F_1F_2 \rightarrow F_1F_1$ for some features F_1 and F_2. This type of assimilation is also known as *progressive assimilation* or *left-to-right assimilation.*

Both anticipatory and perseverative assimilations can be realized in either of the following two ways.

a. *Complete assimilation*, in which all features of the weaker, assimilated phoneme are eliminated, resulting in a complete copy of the stronger, assimilating phoneme.
b. *Partial assimilation*, in which the weaker of the phonemes in an assimilating environment adopts some prominent phonetic feature of the stronger phoneme, such that the assimilated phoneme becomes more like, but not identical to, the assimilating phoneme.

Examples

1. *Complete anticipatory*: *illustris* 'full of light' < *in-lustris*; *attineō* 'I hold' < *ad-tineō*;

2. *Partial anticipatory*: *imbellis* 'unwarlike' < *in-bellis*; *somnus* 'sleep' < **suep-no-s* (cf. Gk. ὕπνος);
3. *Complete perseverative*: *ferre* 'to carry' < **fer-se*; *velle* 'to wish' < **vel-se* (cf. *es-se* 'to be');
4. *Partial perseverative*: Latin shows no examples of partial perseverative assimilation. An example of this pattern in American English can be found in the behavior of suffixal {S} 'plural', which is realized as /s/, /z/, or /əz/ according to the final phoneme of the base, as in *cat-s*, *dog-z*, *church-əz*.

6.2.4.1.1. The strength hierarchy

Latin assimilations follow what has been named "the principle of the strongest"; that is, the phonologically weaker of the two segments in an assimilating environment will adapt to the articulatory features of the phonologically stronger segment. Latin strongly favors anticipatory assimilations, regardless of where in the word the assimilating phonemes are located. "The principle of the strongest" determines which phonemes are the stronger or weaker in some combination and environment. Monteil (1986: 78) proposes the following hierarchy of consonants and positions which trigger assimilations or other phonological effects, from strongest to weakest.
1. A released stop consonant after a consonant: the *t* in *cap-tus* 'taken';
2. A released stop consonant after a vowel: the *t* in *lātus* 'carried'; or in absolute initial position: *tam* 'so, to such a degree';
3. An unreleased stop before a released stop: the *p* in *cap-tus* 'taken';
4. An unreleased stop which is not followed by a released stop, practically speaking, a final stop: the *t* in *legit* 'X gathers';

This hierarchy furnishes motivation for the following types of examples.

a. *Anticipatory assimilation of voicing*: *attulī* 'I carried' < *ad-tulī*; *nūp-sī* 'I married' < **nūb-sī*; *dignus* 'worthy' < **dek-no-*; *sīdō* 'I sit down' < **si-zdō* < **si-sdō*;
b. *Anticipatory assimilation of place of articulation*: *cōnstantia* 'steadiness' < **com-stantia*; *suggerō* 'I provide' < **sub-gerō*; *aggerō* 'I heap up' < **ad-gerō*;
c. *Anticipatory assimilation of manner of articulation*: *scamnum* 'bench' < **scab-no-*; *mīsī* 'I sent' < **mīs-sī* < **mīt-sī*; *sella* 'seat' < **sed-la*;
d. *Anticipatory assimilation of voicing and point of articulation*: *accingō* 'I gird on' < **ad-cingō*; *topper* 'speedily' < **tod-per*; *quippe* 'certainly' < **quid-pe*;
e. *Anticipatory assimilation of voicing and manner of articulation*: *offendō* 'I strike' < **ob-fendō*; *asser* 'stake' < **ad-ser*; *annus* 'year' < **at-nos*;
f. *Anticipatory assimilation of point and manner of articulation*: *efferō* 'I carry out' < **ec-ferō*; *corripiō* 'I seize violently' < **com-rapiō*; *irrīdeō* 'I laugh at' < **in-rīdeō*; *quīnque* 'five' < **penkʷe*.
g. *Perseverative assimilation of point and manner of articulation*: The strength hierarchy and the structure of the Latin syllable strongly favor anticipatory

assimilations. The most prominent of the phonemes which condition perseverative assimilation, on the other hand, are the liquids *r* and *l*. Examples are the following: the reconstructed infinitival marker **-se* (rhotacized postvocalically to *-re* elsewhere) in *ferre* 'to carry' < **fer-se*; *velle* 'to wish' < **vel-se* (for the infinitive ending cf. *es-se* 'to be'); *torreō* 'I burn' < **tors-eō*; *collis* 'hill' < **kolH-n-*, and *collum* 'neck' < **kolso-*.

h. *Weakening of voiceless stops in final position*, as in OLat. FECED (Duenos) 'X did' < **-t*; corresponding to this development is the loss of final voiced stops after long vowels, as in OLat. (abl.) SENTENTIAD, CLat. *sententiā* 'by the opinion'. These changes are difficult to explain, but one possible explanation is that the final **t* is voiced because of a perseveration of the voicing from the previous vowel, passing the sonority of the vowel to the consonant. By the same token, the loss of final *-d* after long vowels could be explained as a repair of an over-sonorous syllable. Both changes preserve heavy final syllables, but the issues are far from clear.

Because assimilation is an automatic articulatory act which is beneath the conscious awareness of speakers, there is little doubt that many more assimilatory processes took place in spoken Latin which were not entered into the written record. Furthermore, since writing is an inherently conservative and self-conscious medium, many phonetic features are never committed to writing. The lack of conscious awareness of assimilations in Latin explains the persistence in the written record of such forms as *subferō* 'support', *plēbs* 'common people' and *urbs* 'city' even though they were pronounced [suffero:], [ple:ps], and [urps] and are occasionally recorded that way in inscriptions.

6.2.4.2. Dissimilation

Dissimilation is the opposite of assimilation in that it is a process whereby two sounds which are like each other become less so through the alteration of the phonetic features of one of the sounds. Whereas assimilations typically, though not always, take place between sounds which are in contact, dissimilations typically involve sounds which are separated from each other by intervening phonemic material. Ordinarily, it is the second of the sounds in question which is affected by the dissimilatory process, such that a sequence of phonemes of the structure $F_1XF_1 \rightarrow F_1XF_2$, where F is some phonetic feature and X is intervening phonemic material.

Dissimilation in Latin is of limited scope, involving only nasal and liquid segments. The most common examples involve the sequences *r . . r* and *l . . l*, which are dissimilated to *r . . l* or *l . . r*. An example of *r . . r* to *r . . l* is *ergastulum* 'penitentiary', from Gk. **ἔργαστρον* (Leumann 1977: 231). Examples of *r . . r* to *l . . r* are *pelegrīnus* 'foreign' and *meletrīx* 'harlot' from *peregrīnus* and *meretrīx*. Occasionally, *r . . r* dissimilates to *n . . r*, as can be seen in the form *menetrīx*. For *l . . l* to *r . . l* examples, cf. the following: the name of the deity *Palēs* has an associated form

Parīlia 'the feast of the *Palēs*'; *caeruleus* 'blue' is derived from *caelum* 'sky'; suffixes in *-ālis* (cf. *nātūrālis* 'natural'), *-culum* (cf. *spectāculum* 'show'), *-bulum* (cf. *stabulum* 'standing-room'), and *-bilis* (cf. *amābilis* 'lovable') are realized as *-āris* (cf. *mīlitāris* 'military'), *-crum* (cf. *simulācrum* 'image'), *-brum* (cf. *candēlābrum* 'candlestick') and *-bris* (cf. *lūgubris* 'mournful') when there is a preceding *l*.

Limited evidence exists for a dissimilatory change of *n* . . *n* to *n* . . *l*: cf. the alternate forms of the name *Firmīliānus* and *Firmīniānus* (from *Firmīnus*). Of the *n* . . *n* to *r* . . *n* examples, a few noteworthy ones are *carmen* 'song' < **can-men* and *germen* 'embryo' < **gen-men*. These are problematic, however, since the sequence *nm* is not permitted in Latin. Thus the change to *rm* in *carmen*, for example, might be a contiguous dissimilation of *nm* to *rm* rather than a non-contiguous dissimilation of *n* . . *n* to *r* . . *n*.

A further example of dissimilation involving *d* . . *d* to *r* . . *d* is the form *merīdiē* 'at midday' < *medīdiē* (attested at Praeneste).

Another type of dissimilation involves the elimination of one of a sequence of syllables in which the consonantal onset is the same, such that the sequence $_{\sigma}[C_1V]_{\sigma}\ _{\sigma}[C_1V]_{\sigma} \rightarrow\ _{\sigma}[C_1V]_{\sigma}$, where C_1 stands for any repeated consonant and V stands for any vowel. This process ("haplology"), is responsible for such forms as *sēmodius* 'a half-modius' [a unit of measure] < *sēmi-modius*; *vicissim* 'in turn' < **vice-cessim*; *nūtrīx* 'nurse' < **nūtri-trīx*; and finally *stīpendium* 'tax' < **stīpi-pendium*.

6.2.4.3. Metathesis

Metathesis is the interchange of two phonemes within a word, such that the sequence XY → YX. Metathesis is a sporadic phonological process in Latin, with a relatively small range of segment combinations which are affected. Among them are PIE **-dn-*, which is transformed to *-nd-*: cf. *unda* 'wave' < **udna*, which contains the zero-grade of **ued-* 'water, wet' plus an *-n-* suffix (cf. Gk. Ἀλοσ-ύδνη, Skt. gen. *udnáḥ*); and *r* and *l*, which are often involved in sporadic metatheses: *ausculto* 'I listen attentively' < **h₂eus-klu-t-* (cf. *clueō* 'I am named'); *pulmō* 'lung' (cf. Gk. πλεύμων); and such borrowings from Greek as the form *tarpessīta* (= *trapēzīta*) 'money-changer' from Gk. τραπεζίτης and *corcodīlus* (= *crocodīlus*) 'crocodile' from Gk. κροκόδειλος.

6.2.4.4. Epenthesis

Epenthesis is the addition of a non-etymological segment into a word. In Latin, epenthetic consonants appear at syllable boundaries between an unreleased (usually a nasal) and a released consonant. Typically, epenthetic consonants have the effect of preserving some morphological transparency between forms of a word which

would otherwise be obscured by some other phonetic change. For example, the participial form *ēmptus* 'bought' (*emō*), with an epenthetic *p*, would be **ēmtus* without the *p*, which would in turn become **entus*, which is not transparently related to *emō*. Similar processes motivate such forms as *dēmpsī* 'I took away' (*dēmō*), which would have become **dēnsī* (> **dēsī*), and *exemplum* 'sample' (*eximō*), which would have become **exellum* (< **exem-lo-*).

6.2.4.5. Simplification of consonant clusters

There are hundreds of possible combinations of consonant clusters in Latin, occurring in a variety of positions within the word and within syllables. It is not possible to review all the possible combinations and their outcomes here, since the level of detail required to investigate every possibility would take the discussion far beyond reasonable limits. The abundance of consonant clusters is reviewed in Leumann (1977), which should be consulted for specific instances. For present purposes, it will suffice to summarize a few phonological generalizations, following Monteil (1986). These few observations on patterns of cluster simplification can then serve as a guide to understanding many of the specific changes.

6.2.4.5.1. Groups of three consonants

1. *With* -s- *as the interior consonant.* When there is a sequence of three consonants, and the interior consonant is *s*, the initial consonant of the group assimilates to the *s*, creating a geminate which in turn simplifies before another consonant. Thus *b*, which would normally be high on the strength hierarchy in relation to *s* in this position (cf. *sub-sistō* 'I stand', *sub-scrībō* 'I write beneath'), is assimilated to a following *s* in a three-consonant group such as **subs-cipiō* > **susscipiō* > *suscipiō* 'I take up'; **subs-tineō* > **susstineō* > *sustineō* 'I support'. Similarly, *k*, which would normally be preserved next to *s* in a two-consonant group (as it is in *dīxī* 'I said' < **dīc-sī*), is assimilated in a three-consonant group: cf. **eks-dūcō* > **egz-dūcō* > **ezz-dūcō* > **ez-dūcō* > *ē-dūcō* 'I lead out'. Finally, the same process can be seen in a form such as *testis* 'witness' < **ter-stis* (cf. OIr. *tress* 'third'). Normally, *r* in the position before *s* exerts a perseverative assimilatory force (cf. *ferre* 'to carry' < **fer-se*). When in a three-consonant group, however, *r* yields to *s*, which then simplifies: **ter-stis* > **tes-stis* > *testis*. In every such case, the initial consonant of the group is lost.

2. *With a stop as the interior consonant, a non-semivowel sonorant* (r, l, m, n) *on one side of the stop, and another consonant on the other.* When there is a sequence of three consonants, and the first is a sonorant (*r*, *l*, *m* or *n*), the interior one is a stop, and the final one is any other consonant, the interior consonant drops out. Thus, *sarmentum* 'brushwood' < **sarp-mentum* (cf. *sarpō* 'I cut off'); *corculum* 'little heart' < **cord-culum* (cf. gen. *cord-is* 'heart'); *fulmen* 'thunderbolt'< **fulg-*

men (cf. *fulgor* 'lightning'); *querneus* 'oaken' < **querc-no-* (cf. *quercus* 'oak'), and finally *quīntus* 'fifth' < **quīnc-to-* (cf. *quīnque* 'five').

6.2.4.5.2. Geminate consonants

PIE apparently had no morpheme-internal geminate consonants, so that all examples of geminates found in Latin, or reconstructible for Proto-Latin, result from specific developments in the evolution of the phonological system.[19] Most of these are the result of assimilatory processes such as those outlined above; others are the result of morphological compositions like *com-mittō* 'I unite'; still others reflect some expressive process, in which a consonantal geminate expresses some special pragmatic effect, especially with terms of endearment or deprecation, e.g. *atta* 'father', *mamma* 'breast, mother', *Iuppiter* (an alternate form of *Iūpiter* 'Jupiter'), *gibbus* 'hump', or *lippus* 'bleary-eyed'.

There are several processes at work in Latin which simplify geminates to single consonants. The most important of these is the simplification which takes place after long vowels. This simplification is clearly based on syllable patterns; for example, the heavy syllable provided by the long root vowel of Lachmann's Law forms like *cāsus* 'fallen' (< *cad+tos*) allows the simplification of the putative intermediate form **cās-sus*. This process contrasts with that seen in forms such as *missus* 'sent', where the root vowel is short and the syllable weight is preserved by the geminate.

Apart from the expressive geminates, there is a considerable number of exceptional forms which preserve the long vowel and the geminate, often as an alternate form of one with a simplified geminate. Though there are many item-specific analogical explanations for these forms (many have geminate *-ll-*), only the forms themselves are given here, without discussion: *mīlle* 'thousand', *vīlla* 'country house', *stēlla* 'star', *corōlla* 'little crown', and *ūllus* 'any'. Of the many forms which alternate between single and geminate consonant following a long vowel, the following provide a sample: *crocodīlus/crocodīllus* 'crocodile', *loquēla/loquēlla* 'speech', *bāca/bācca* 'berry', and *līter/līttera* 'letter'.

6.3. Summary

In this chapter, the evolution and development of the Proto-Indo-European phonological system into Latin has been explored. The version of PIE which has been postulated as the ancestor of Latin and the other IE languages is one which is consistent with post-Neogrammarian phonological models, as outlined in chap. 2. This

19 Even a morpheme boundary is sometimes not enough to prevent simplification of geminates. For example, the 2nd. sg. indic. of **h₁es-* 'to be', namely **h₁es-si*, is simplified to **h₁esi* > Lat. *es* 'you are', Skt. *ási*, Gk. ἐῖ (< *ἔ(h)ι.

system assumes a set of long and short vowels, diphthongs, semivowels, nasals, liquids, laryngeals, stops, and a single fricative. Each of these phonological segments has been traced into Latin in various diagnostic phonological environments. Each phonological description is accompanied by comparative data from across the IE family of languages, and notes are provided detailing specific phonological developments and outcomes in both PIE and Latin. Detailed accounts of Latin syllable structure and accent are provided, as well as a treatment of the behavior of the Latin vocalic system in terms of syllable location. Considerable space is allotted to several important phonological developments in Latin, namely Lachmann's Law, iambic shortening, rhotacism, and the split of the PIE voiced aspirates into the Latin word-initial voiceless fricatives and word-medial voiced stops. Finally, an account of the phonological processes of assimilation and dissimilation are formulated in terms of a strength hierarchy of Latin consonants, and examples are provided of other phonological processes such as epenthesis, metathesis, and the simplification of consonant clusters in Latin.

Chapter 7
The development of the Latin morphological system from PIE

7.1. The parts of speech

The ancient Roman grammarians distinguished eight functionally different "parts of speech" (grammatical categories) for Latin, namely nouns (and adjectives), verbs, participles, pronouns, prepositions, adverbs, conjunctions, and interjections. This system is an adaptation of the Greek original, in which the article was included, but in which there was no interjection, and it continues to serve as a basic classificatory scheme. Of these eight categories, only the first four occur in fully inflected paradigms. Prepositions, conjunctions, interjections, and some adverbs are invariant (most adverbs are inflected forms of adjectives which are fixed in a certain case-form). This chapter deals with the development of these categories in Latin from PIE.[1]

7.2. Nouns and adjectives

7.2.1. Nominal and adjectival derivation

In late PIE, and in the classical IE languages, nominal derivations perform a variety of semantic and syntactic functions. It is by means of such formations that base forms are converted into agent nouns, action nouns, or nouns denoting locality, instrument, or some abstract state. They provide the standard means of creating nouns from verbs and adjectives, adjectives from nouns, or adjectives from verbs, enriching the overall vocabulary and morphological system of the language through the addition of a relatively small number of suffixes (including -ϕ), either alone or in combination, without increasing the overall number of independent lexical elements.

PIE distinguished two nominal types: the first, called "root nouns", are those which are formed without derivational suffixes (other than -ϕ); that is, in this type case-markers are added directly to the root. Many, but not all, root nouns have an identical associated verbal root. For those with a corresponding verbal root, the two forms often display different ablaut grades, as seen in Gk. ὄψ, ὀπός 'voice' (from nominal form **uok$^{\mu}$-*) vs. Gk. (aor.) ἔ̂πον 'I spoke' (from verbal root **uek$^{\mu}$-* 'speak'). Root nouns are not numerous in the attested IE languages, though their archaic structure and function (as "action nouns" and "agent nouns") suggests that

1 This chapter draws mainly from the following sources: Buck (1904, 1933), Ernout (1953), Monteil (1986), Leumann (1977), Meillet—Vendryes (1979), Sommer (1977), Sihler (1995), and Beekes (1995).

they may represent an original type which must have been more robust in PIE, at least early PIE. Root nouns are relatively uncommon in Latin by comparison with the suffixed formations, with some of the examples occurring only as the second member of a nominal compound. PIE root nouns which survived in Latin were typically organized into the third declension consonantal stem inflectional group.

Examples of root nouns

Independently occurring root nouns with associated verb roots.

Lat. *vōx*, *vōcis* 'voice', Skt. *vā́k*, *vācáḥ*, Gk. ὄψ, ὀπός (< *o*-grade of **uek$^{\mu}$-* 'speak');
Lat. *lūx*, *lucis* 'light', Goth. *liuhaþ*, Lith. *laũkas* 'pale' (< **leuk-* 'shine');
Lat. *lēx*, *lēgis* 'law' (< **leg-* 'gather').

Independently occurring root nouns without associated verb roots.

Lat. *pēs*, *pedis* 'foot', Skt. *pā́t*, *padáḥ*, Gk. πούς, ποδός, (< **ped-/pod-*);
Lat. *mūs*, *mūris* 'mouse', Gk. μῦς, Skt. *mū́ṣ-* (< **mūs*);
Lat. *sāl*, *salis* 'salt', Gk. ἅλς (**sal-*).

Root nouns occurring as the second member of a compound.

Lat. *iūdex* 'judge' (< **ious-dic-s*; *dic-* < **deik-* 'point out');
Lat. *auceps* 'bird-catcher' (< **avi-cap-s*; *cap-* < **kap-* 'seize, take');
Lat. *coniux*, *coniugis* 'spouse', Gk. σύζυξ (*iug-* < **Hiug-* 'join').

The second derived nominal type found in PIE is suffixed formations, that is, nominals which are formed through the addition of one or more derivational suffixes to a root, such as *rēg-ul-us* 'chieftain' (root *reg-*), *rēg-āl-is* 'royal' (root *reg-*), or (OLat.) *soc-io-s* 'partner' (root *sequ-*). The suffixed formations are the dominant structural type in the IE languages. They represent a variety of later formations which arose from the earliest stages of the protolanguage and developed strongly into classical PIE and into the daughter languages, including Latin.

The majority of derived nouns found in Latin are formed through the addition of one or more suffixes to a root form, creating a stem to which inflections are added (e.g. *dominus* 'master' < **domH-o-no-s*). It is possible that at least some of these suffixes were at one time independent words or particles which became fused to the root and were morphologized as suffixes, so that a nominal such as **ulk$^{\mu}$-o-s* 'wolf' might have been something like 'wolf-that one' or the like. A particularly clear case of this type of grammaticalization took place in English and the Romance languages, though not in the nominal system. The English adverbial suffix *-ly* (*quick-ly*, *slow-ly*, etc.) was originally an independent word in Old English, *līc* 'body, form'; a word like OE *eorþ-līc* 'earthly' was derived semantically from 'having the form of the earth'. In time this independent word *līc* was reanalyzed as a suffix and came to be applied productively to form adjectives like 'earthly' and adverbs like 'quickly'. A similar process took place in the Romance languages, where ablative phrases with feminine adjectives were used with the Latin noun *mēns* 'mind, inten-

tion' in its ablative form *mente*. In Proto-Romance, *mente* was used adverbially to mean something like 'in the manner of', as in *severa mente* 'in a severe manner' (Fr. *sévèrement* 'harshly', It. *severaménte*) or *integra mente* 'in a complete manner' (Fr. *entièrement* 'completely', Span. *enteramente*). Eventually, the independent noun *mente* became morphologized as a suffix (Fr. *-ment*, It. *-ménte*, Span. *-mente*) and is now used as a productive adverbial formative in various Romance languages.

Though it is likely that at least some of the suffixes of PIE had their beginnings as free words, independent origins are only recoverable in a relatively small number of formative suffixes, such as Lat. *-tinus* 'denoting time' (cf. *diūtinus* 'long-continued', *crāstinus* 'of tomorrow'), which may derive from PIE **ten-* 'stretch'. Most of the remaining suffixes can only be analyzed as bound morphological elements, without recoverable full-word origins.

Examples of suffixed nominal formations

*α. Nasal suffixes in *n and *m.*

A. **n*-suffixes

In Latin there are several suffix-types in *n* which are inherited from PIE.

1. An old suffix **-en-* is seen in the genitive of Lat. *cardō, cardinis* 'hinge', *carō, carnis* 'flesh', *hirundō, hirundinis* 'swallow', and *homō, hominis* 'man', in which the nominative in *-ō* derives from **-on*, and the genitive forms in *-in-* show the effects of vowel weakening from full-grade **-en-* (although the possibility must be allowed that the *o*-grade is continued throughout the paradigm). The form of *carnis* most likely shows a syncopation of the medial *-e-* after *r*, though the precise details are difficult to capture. The suffix **-en-* is also present in archaic neuter **r/n*-stems with restructured paradigms such as *iter, itineris* 'road', *iecur, iecinoris* 'liver' (cf. Skt. *yákṛt, yaknáḥ*, and less obviously Gk. ἧπαρ, ἥπατος, in which the *-t-* has replaced the **-n-* in the paradigm). The **r/n*-stems represent a very old stratum of the IE lexicon in which the nominative and accusative singular of certain neuter nouns (and occasionally the nominative and accusative plural) end in **-r*, and in which the other cases show a stem in *-n-* (cf. additionally Lat. *femur, feminis* 'thigh', Umbr. acc. **utur** 'water', abl. **une**). The suffix **-en-* is sometimes combined with a velar *g* to form the Latin suffix *-gen-*, which appears as *-gō, -ginis*: cf. *imāgō, imāginis* 'image' (*imitor*), *vertīgō, vertīginis* 'dizziness' (*vertō*), and *orīgō, orīginis* 'source' (*orior*).

2. A form **-no-* by which nouns and adjectives are created is very productive in a variety of constructions in Latin.

a. **-no-* appears in adjectival formations such as Lat. *dignus* 'worthy' (cf. *decet* 'it is fitting'), *magnus* 'great' (cf. Gk. μέγας), *plēnus* 'full' (*pleō* 'I fill'). The same suffix provides many past-participial formations in Sanskrit, such as *mūrṇá-* 'crushed', root *mṛ-*.

b. **-no-* appears in nouns like *somnus* 'sleep' (cf. Gk. ὕπνος) and *dōnum* 'gift' (*dare* 'give').

c. **-no-* is present in Latin adjective formations in *-ānus* such as *plānus* 'flat', *Rōmānus* 'Roman' (*Rōma*), *urbānus* 'of the city' (*urbs*), and *mundānus* 'of the world' (*mundus*). This suffix ultimately has its origins in **-eh₂no-* (e.g. in *plānus*), and spread analogically as *-ānus*. The suffix *-ānus* probably originated with *a*-stems and was adopted by other declensions.

d. **-no-* is also added to certain nouns which end in **-ih₂-*, resulting in the suffix *-īnus, -īna* seen in forms like *vīcīnus* 'near' (*vīcus*), *lībertīnus* 'of the class of freedman' (*līber*), *rēgīna* 'queen' (*rēg-*), and *opificīna* 'workshop' (*opus*).

e. **-no-* is added to roots ending in **-es-*, a combination which results in a Latin suffix *-ēnus* seen in *a(h)ēnus* 'made of copper or bronze' (*aes*) and *egēnus* 'needy' (cf. *egestās*).

f. **-no-* is added to roots ending in **-o-*, with regular weakening of unstressed short *o* to *i*, as in Lat. *dominus* 'master' (< **domH-o-no-*) and *fāginus* 'of the beech tree' (*fāgus*).

g. **-no-/-neh₂-* is added to Latin roots ending in *-ū-* to form the suffix *-ūnus/ -ūna* seen in such forms as *tribūnus* 'tribune', *opportūnus* 'fit', and *fortūna* 'fortune'.

h. **-no-* is combined with the suffix *-(t)er-, -(t)ur-, -ti-* to form the suffixes *-(t)ernus, -(t)urnus, -tinus* in adjectives referring to time, as can be seen in *hodiernus* 'of today', *diūturnus* 'long-continued', and *crāstinus* 'of tomorrow'. The *-ti-* in *-tinus* may stem from the suffix **-to-* (*amātus* 'loved', *dēlētus* 'destroyed') weakened to *-ti-*, or it may continue *-ten-*, weakened to *-tin-*, derived from PIE **ten-* 'stretch'.

B. *m*-suffixes

There are several *m*-suffixes inherited from PIE which play a role in Latin derivation.

1. The suffix *-mo-*

The suffix **-mo-* occurs:

a. In some inherited nouns such as *fūmus* 'smoke' (cf. Gk. θῡμός, Skt. *dhūmáḥ*), *animus* 'soul' (cf. Gk. ἄνεμος 'wind'), and *culmus* 'stalk' (cf. OHG *halm*, *halm*).

b. In certain adjectives, such as *almus* 'nourishing' (*alō*), *formus* 'warm' (cf. Gk. θερμός, Skt. *gharmáḥ*), and *firmus* 'strong' (no certain cognates).

c. As a marker of ordinal numbers, as seen in *prīmus* 'first' (< **pri-so-mo-*), *septimus* 'seventh', and *decimus* 'tenth'.

d. As a marker of the superlative, seen in *summus* 'highest' (< **sup-mo-*), *suprēmus* 'highest' (cf. *suprā*). It is often enlarged with a suffix **-so-*, seen in *maximus* 'greatest' < **mag-so-mo-* (cf. *mag-nus*).

e. The suffix **-mo-* is often enlarged by the suffix **-to-* as seen in *fīnitimus* 'neighboring' (*fīnis*), and *optimus* 'best' (root *op-*).

f. It is possible that **-mo-* appears as lengthened grade *-mō* in some nouns denoting instrument or action, such as *pulmō* 'lung', *sermō* 'speech', though

these are more likely derived from **-mo-n*.

2. The suffix **-mn-*

a. There is a suffix **-mn-* which occurs as a marker of action and result nouns such as *nōmen* 'name', *flūmen* 'river', and *sēmen* 'seed'. This suffix is sometimes combined with **-to-* to create a new strengthened suffix **-mnto-*, seen in nouns like *fragmentum* 'fragment' (*frangō*) and *ornāmentum* 'ornament' (*ornō*).

b. The suffix **-men-* (possibly **-mh$_1$-n-*) is combined with **-o-* to form the PIE middle participle found in Indic forms like Skt. *bhármāṇaḥ* 'carrying', Gk. φερόμενος. This suffix appears in Latin in a few forms such as *fēmina* 'woman', *alumnus* 'pupil', and by some accounts forms the basis of the 2nd person plural passive/middle verb forms, e.g. *monēminī* 'you are being warned', *sequiminī* 'you follow'.

β. r-suffixes. In Latin there are several forms which utilize *r*-suffixes:

a. Old nouns such as *ager* 'field' (< **h$_2$egro-*, cf. Gk. ἀγρός, Skt. *ájraḥ*, Goth. *akrs*), *vir* 'man' (< **uiHro-*, cf. Lith. *výras*, OIr. *fer*, Skt. *vīráḥ*) show an inherited suffix **-ro-*. This same suffix appears in Latin instrument nouns such as *flāgrum* 'whip', *fulcrum* 'couch'; in adjectival formations such as *cārus* 'dear', *ruber* 'red', *vērus* 'true'; and in adverbs such as *super* 'above', *īnfrā* 'below'.

b. The suffix **-ter-/-tor-*, which shows the frequent "enlargement" in **-t-*, is observable in oppositional formations like *dexter* 'right', *sinister* 'left'; *noster* 'our', *vester* 'your' (pl.). It is also present in inherited kinship terms such as *pater* 'father', *māter* 'mother', *frāter* 'brother', as well as in agent noun formations like *victor* 'conqueror' (*vincō*), *iānitor* 'doorkeeper' (*iānua*), and *scrīptor* 'writer' (*scrībō*).

γ. l-suffixes. The principal suffix with *l* is **-lo-*, which is used to form some nouns derived from verbs, to form certain adjectives, and to create diminutives from both nouns and adjectives.

a. Nouns which are derived from verbs such as *tumulus* 'hill' (*tumeō*), *figulus* 'potter' (*fingō*). Some of these nouns are instrument nouns, such as *vinculum* 'bond' (*vinciō*) and *prēlum* (*premō*) 'wine/olive-press'. The suffix **-lo-* is sometimes enlarged with other suffixes, to which **-lo-* is appended, as in *-culum* from **-tlo-* and *-bulum* from **-d^{h}lo-*: cf. *pōculum* 'drinking cup' < **peh$_3$-tlom* (part. *pōtus*), *ferculum* 'bier' < **b^{h}er-tlom* (*ferō*), *fābula* 'narrative' < **b^{h}eh$_2$-d^{h}lo-* (*fārī*), and *stabulum* 'stall' < **sth$_2$-d^{h}lom* (*stāre*). The suffix *-culum* results in part from an anaptyxis of *u* between the *c* and the *l*, which stabilizes the syllable pattern; the unchanged suffix is to be seen in Plautine forms such as *perīclum* 'danger' (*perīculum*) and *saeclum* 'a generation' (*saeculum*).

b. Adjectives in *-ulus* derived from verbs, such as *pendulus* 'hanging'

(*pendeō*), *crēdulus* 'believing' (*crēdō*), *bibulus* 'fond of drink' (*bibō*).

c. Diminutive nouns and adjectives in *-ulus*, such as *rēgulus* 'chieftain' (*rēx*), *ānulus* 'finger-ring' (*ānus*), *adulēscēntulus* 'very young man' (*adulēscēns*), *homunculus* 'little man' (*homō*); *albulus* 'whitish' (*albus*), *longulus* 'somewhat long' (*longus*), *breviculus* 'somewhat short' (*brevis*). Diminutives in *-ulus* are often appended to a suffix **-ko-*, giving *-culus*, *-culum* < **-ko-* + *-lo-*; cf. *aedicula* 'chapel' (*aedēs*), *ōsculum* 'kiss' (*ōs*). The resulting suffix *-culum* is different from that resulting from **-tlo-* (*saeculum*, etc.), since diminutives in *-culus* do not have variants without the *u* such as ***ōsclum* 'kiss'. When added to stems ending in **-ro-* and **-no-*, the suffix **-lo-* conditions loss of the preceding *o* and assimilates the then preceding *n* or *r* to *l*. The result is the creation of a Latin diminutive suffix *-llus*, reanalyzed as *-ellus*, *-ella*, which can be seen in such forms as *puellus* 'little boy'< **puer-los*, *puella* 'girl' < **puer-la* (cf. *puer*), *bellus* 'pretty' < **benlos* (cf. *bene*), and *agellus* 'little field' < **agro-los* (cf. *ager*).

d. PIE **-lo-* was transferred into the Latin *i*-stems to create a series of suffixes built around a formative *-li-*, seen in *facilis* 'easy', *similis* 'like', and *humilis* 'low'. This suffix was enlarged through combination with several other suffixes, e.g. *-bi-li-s* (< **-d^h-lo-*), as in *amābilis* 'lovable' (*amō*), *crēdibilis* 'credible' (*crēdō*); *-ālis*, originally from stems ending in **-eh_2*, as in *animālis* 'having life' (*anima*) and *formālis* 'formal' (*forma*), which then spread to other classes, seen in *mortālis* 'mortal' (*mors*), and *rēgālis* 'royal' (*rēx*). This suffix *-ālis* is regularly dissimilated to *-āris* when preceded by an *l*: cf. *familiāris* 'of the family', *cōnsulāris* 'consular'. Finally, there are the suffixes *-ēlis*, *-īlis*, *-ūlus*, all based on nominal stem classes: cf. *fidēlis* 'faithful' (*fidēs*), *cīvīlis* 'civil' (*cīvis*), and *tribūlus* 'clansman' (*tribus*). The initial long vowel of these formations is difficult to clarify, though its consistency (as *ā*, *ē*, *ī*, and *ū*) suggests an inherited formation, perhaps based on an original collective **-eh_2-* (> *-ā-*).

*δ. The suffix *-io-*. The suffix **-io-* is extremely productive in Latin, serving as the foundation for a number of nominal and adjectival formations.

a. Some adjectives derived from nouns, including patronymics, are formed through the suffixation of **-io-*: *patrius* 'paternal' (*pater*), *meretrīcius* 'of a harlot' (*meretrīx*), *noxius* 'harmful' (*noxa*); *Martius* (*Mars*), *Octāvius* (*octāvus*), *Venerius* (*Venus*).

b. Certain masculine nouns like *socius* 'partner' (*sequor*), as well as neuter and feminine abstract nouns such as *studium* 'zeal' (*studeō*), *coniugium* 'wedlock' (*coniungō*), *adulterium* 'adultery' (*adulterō*), *invidia* 'envy' (*invideō*), and *audācia* 'boldness' (*audāx*).

c. **-io-* sometimes occurs in combination with other suffixes to form enlarged suffixes such as *-eu-* (< **-e-io-*), seen in forms like *aureus* 'golden' (*aurum*), *lapideus* 'made of stone' (*lapis*), and *virgineus* 'of a virgin' (*virgō*). This

compound construction stems from an IE formation **-eH-io* (> **eii̯o-* > Lat. *-eus*) which is found primarily with adjectives expressing material attributes (e.g. *lapideus* 'made of stone', *niveus* 'snowy'). Another combination of **-io-* is apparently with the formative **-eh₂s* (> *-ās*) to form a suffix **-eh₂sio-* > *-āriu-s*, seen in adjective forms such as *februārius* 'of the month of February' (*februum*) and *balneārius* 'pertaining to the bath' (*balneum*); and in certain nominal derivatives such as *legiōnārius* 'legionary' (*legiō*), *carbōnārius* 'charcoal burner' (*carbō*), and *pānārium* 'bread basket' (*pānis*).

d. The suffix **-io-* occurs with certain animate agentive nouns to form corresponding adjectives and to form inanimate nominal derivatives. Of the former there are *praetōrius* 'referring to a praetor' (*praetor*) and *senātōrius* 'senatorial' (*senātor*). Of the latter, there are *praetōrium* 'official residence of the governor' (*praetor*) and *territōrium* 'district' (*terra*).

*ε. The suffix *-uo-*. There is a suffix **-uo-* which is used to form adjectives and a few nouns. The suffix **-uo-* may be formed with the so-called "labializing laryngeal" **h₃* (Martinet 1955, 1956), which may also have served as the basis of the Latin verbal marker *-v-* in the perfective of *-ā-* and *-ī-* verbs such as *amāvī* 'I loved' (*amō*) and *crēvī* 'I separated' (*cernō*). This issue is taken up below in the discussion of the verb.

a. Adjectives such as *octāvus* 'eighth' < **h₃ekteh₃o-* (*octō*) and *vīvus* 'alive' < **gʷih₃-uo-* (*vīvō*) are formed with this suffix, as are *fulvus* 'tawny', *parvus* 'small', *silva* 'forest' (with **-h₂e*), and *arvum* 'field'.

b. The suffix **-uo-* is sometimes combined with the suffix **-to-* and is associated with past participles to form the suffix *-tīvus* (*captīvus* 'captive'), which is also seen in certain grammatical terms such as the names of the cases (*nōminātīvus*, *genetīvus*, and so on). The Lat. *mortuus* 'dead' (past part. of *morior*) reflects the unweakened form (**mr-tu-os*)

ζ. k-suffixes. There are several Latin suffixes which are characterized by **-k-*, including the adjectival suffixes *-āx*, *-ōx*, and *-īx* denoting personal characteristics (< **-Vh₂k-s*); and the adjectival suffix *-cus* (< **-ko-*).

a. Adjectives and some nouns formed through the addition of the suffixes *-āx*, *-ōx*, and *-īx* are derived from PIE **-k-s*, preceded by theme vowels *ā*, *ō*, and *ī*. Of these three, only *-āx*, seen in *audāx* 'bold' (*audeō*), *tenāx* 'tenacious' (*teneō*), and *sagāx* 'keen' (*sāgiō*), is productive. Formations in *-ōx* include *ātrōx* 'cruel' (*āter*), *vēlōx* 'swift' (*volō*), *ferōx* 'fierce' (*ferus*), and *celōx* 'swift' (*celer*). Some formations in *-īx* (variant *-ix*) are *fēlīx* 'happy' (*fēlō*), *pernīx* 'swift' (cf. *perna*), and the nouns *appendīx* 'addition' (*appendō*) and *ornīx* 'crow'. The *-īx* suffix combines with the zero-grade agent suffix *-tr-* (masc. *-tor*) to form a productive feminine agent suffix *-trīx*, seen in *creātrīx* 'female creator' (masc. *creātor*), *imperātrīx* 'female commander' (masc. *imperātor*), and *victrīx* 'female victor' (masc. *victor*). *Senex* 'old' is prob-

lematic and most likely reflects a different phonological history, with the final *-ex* possibly reflecting **-h_3s*.

b. The suffix *-cus* (< **-ko-*) typically appears with the vowel *i/ī* (< **i(h_2)* resulting in *-icus/-īcus*, as in *cīvicus* 'civic' (*cīvis*), *antīcus* 'in front' (*ante*), *umbilīcus* 'the navel' (*umbō*). The form *-icus* has a variant with the theme *-t-*, which is of unclear origin (cf. *rūsticus* 'rustic', *domesticus* 'domestic') but may be based on a reanalysis of roots with final *t* such as *antīcus*, though the difference in the length of the *i* poses a problem for this analogy.

*η. Dental suffixes in *d and *t.* Latin makes productive use of two dental suffixes, **-d-* and **-t-*, both of which are frequently combined with other suffixes to create enlarged forms. The voiceless one **-t-* is by far the most productive, with the voiced one **-d-* occurring less frequently. There is another dental suffix **-(n)d^h-*, seen in forms like Gk. κάλαθος 'basket', Κόρινθος 'Corinth', and ἐρέβινθος 'chickpea' which are rare in PIE and nonexistent in Latin. This suffix may be due to substratal Mediterranean influence or borrowing from some unknown regional language, and does not reflect an IE formation.

A. Suffixes in **-d-*

a. The Latin suffix *-d-* (< **-d-*) occurs as a nominal marker in such forms as *lapis, lapidis* 'stone', *palūs, palūdis* 'swamp', and *custōs, custōdis* 'guard'. It is sometimes combined with **-on/-en-* to create the suffix *-dō, -dinis*, seen in weakened form in *hirundō, hirundinis* 'swallow', *dulcēdō, dulcēdinis* 'sweetness', and *cupīdō, cupīdinis* 'desire'. This expanded suffix is further enlarged in combination with **-tuH-* to create the Latin suffix *-tūdō, -tūdinis* seen in *longitūdō, longitūdinis* 'length', *cōnsuētūdō, cōnsuētūdinis* 'custom', and *altitūdō, altitūdinis* 'height'.

b. The Latin future passive participle ending *-ndus* (< **-ndo-*) (*amandus* 'to be loved', *monendus* 'to be warned') may derive from the nominalizing suffix **-en-* (seen in *iuvenis* 'youth') added to the suffix **-do-*, though this is only one of several possible scenarios (reviewed in Sihler 1995: 626–628; see also Risch 1984) and perhaps not even the strongest (discussion at the end of this chapter). This participle supplies one of the uses of the gerundive formation, indicating obligation or necessity (*tuendus est* 'X is to be killed') and is generally passive in its thematic orientation. The *-ndus* suffix also forms the basis of a number of apparently active Latin adjectives which are peculiar to deponent verbs such as *rotundus* 'round' (cf. *rota* 'wheel' and a putative verb form **rotor*), *volvendus* 'rolling' (*volvor* 'I roll'), and *secundus* 'following' (*sequor* 'I follow'). The suffix **-do-* is sometimes combined with *-bu-* (< **b^huH-* 'be'?) to form *-bundus* (cf. *vagābundus* 'strolling about', *errābundus* 'wandering'); and with *-cu-* (of disputed origin) to form *-cundus* (cf. *fēcundus* 'fruitful').

c. **-do-* serves as the basis of the Latin suffix *-idus*, which is used to form adjectives from verbs ending in *-ēre* such as *lūcidus* 'bright' from *lūcēre* 'to

be bright'. The suffix *-idus* is formed by the combination of **-do-* with reduced grade **h$_1$* of the final **eh$_1$*, that is, **-h$_1$do- > *-ado-*, which becomes, through normal weakening, *-ido- > -idus*. Further examples are: *placidus* 'quiet' (*placēre*), *timidus* 'afraid' (*timēre*), and *tepidus* 'lukewarm' (*tepēre*). This suffix eventually was morphologized to *-idus* and came to be attached productively to non-*ēre* verbal derivatives such as *cupidus* 'eager' (*cupere*) and *rapidus* 'seizing' (*rapere*).

B. Suffixes in **-t-*

Like **n*, **t* figures in a large number of primary and secondary suffixal formations in Latin.

a. Agent nouns ending in **-t-* such as *mīles, mīlitis* 'soldier' and *eques, equitis* 'horseman' (< **mīlets, mīlitis*; **equets, equitis*, with vowel weakening in the genitive), as well as compounds such as *sacerdōs, sacerdōtis* 'priest' and *comes, comitis* 'companion', reflect this suffix. The same **-t-* is found in combination with another suffix **-eh$_2$t-* (> *-āt-*) to produce *-tāt-*, found in nouns such as *novitās, novitātis* 'newness', *bonitās, bonitātis* 'goodness'; and with **-uHt-* (> *-ūt-*) to produce *-tūt-*, found in *iuventūs, iuventūtis* 'youth', *virtūs, virtūtis* 'manliness', etc.

b. Latin active participles in *-nt-* arise from the PIE suffix **-ont-/-ent-*, which was added directly to the root: cf. Skt. *bhávant-* 'being', *adánt-* 'eating', Lith. *krùvintas* 'bloody', Hitt. *adant-* 'eaten, having eaten'. It can be found in a few old nouns which have participial origins such as Lat. *dēns*, Skt. *dántaḥ*, < **h$_1$dont-/h$_1$dent-* 'tooth' (if 'tooth' derives from **h$_1$ed-* 'eat' in the sense of 'chewing') and Gk. γέρων, γέροντος 'old man' (cf. Skt. *járantaḥ*). In Latin these participial formatives are productive for all conjugations: (gen. sg.) *amantis* 'loving', *monentis* 'warning', *regentis* 'ruling', *capientis* 'seizing', and *audientis* 'hearing'. Latin *-nt-* is combined with the abstract nominalizing suffix *-ia* to form nouns like *ignōrantia* 'ignorance', *patientia* 'patience'.

c. A prominent dental suffix in PIE and in Latin is **-to-*. This suffix appears in adjectives (Lat. *inclutus* 'famous', *honestus* 'honest'), past participles (Goth. *fulliþs* 'filled', Lat. *amātus* 'having been loved'), and even a few nouns, mostly referring to places where trees grow (Lat. *salictum* 'grove of willows', Lat. *fīcētum* 'fig plantation'). The primary force of the **-to-* suffix is to indicate that the notion expressed by the construction has been accomplished.

   i. The suffix **-to-* is found in adjectives which are derived from verbs, even if the relationship is no longer transparent: *altus* 'high' (*alō*), *certus* 'sure' (*cernō*), and *lautus* 'neat' (*lavō*).

   ii. The suffix **-to-* is found in adjectives formed from nouns, which are derived as if from verbal bases: *hastātus* 'armed with a spear' (*hasta*), *rōbustus* 'hearty' (*rōbur*), and *honestus* 'honored' (*honōs*).

   iii. The suffix **-to-* is found as the marker of a few ordinal numbers such as

quārtus 'fourth' (*quattuor*), *quīn(c)tus* 'fifth' (*quīnque*) and *sextus* 'sixth' (*sex*). Latin also makes use of the corresponding suffix **-mo-*, as in *prīmus* 'first' (< **pri-so-mo-*), *septimus* 'seventh' (*septem*), *decimus* 'tenth' (*decem*).

iv. The principal function of **-to-* in Latin is as a marker of the perfect passive participle found in all verbal conjugations: *amātus* 'loved', *monitus* 'warned', *rēctus* 'ruled', *captus* 'taken', and *audītus* 'heard'. It is likely that many other functions of **-to-* noted above are based on the completive notion inherent in the perfect participle.

Participles with the formative **-t-* have several notable features. One is that they frequently occur with the genitive of the agent. This use can be reconstructed for **-t-* participles in PIE which were active for intransitive verbs and passive for transitive verbs. Certain forms with the **-t-* participle are susceptible of either active or passive interpretation, e.g. Lat. *iūrātus* 'having sworn' or 'taken to witness in an oath'; *tacitus* 'silent' or 'not spoken of'; *pōtus* 'drunk' or 'having drunk'; Skt. *bhuktá* 'the thing enjoyed, food' or 'one who has eaten a meal', which parallel the pattern of Hittite *-nt-* participles such as *adant-* 'eaten' or 'having eaten', *akuwant-* 'having drunk' or 'having been drunk' (see Gonda 1960: 65–66; J. Friedrich 1952: 40, 44; Schmalstieg 1995).

7.2.2. Nominal inflection

A declension or nominal paradigm is a group of words which share common features of inflectional formation. Nominals in Latin are organized into five morphologically distinct declensions, with the third showing internal heterogeneity. Of these five, three are also used in adjectival inflection. Latin nominal paradigms are typically arranged according to the historical stem or theme, such as the *ā*-stems, *o*-stems, consonant stems, and so on. The typical Latin noun encodes in its inflectional morphology the three categories of gender, number, and case.[2]

Gender

Late PIE differentiated three genders in the noun, viz. masculine, feminine, and neuter. This system is a transformation of an earlier PIE system in which nouns were grouped into two classes, namely animate and inanimate, as in Hittite. Like other classical IE languages, Latin continues the late PIE system. The gender of nouns and adjectives is indicated chiefly by features of inflection. For example, nouns of the Latin first declension in *-ā* are primarily feminine; those of the second

2 There are a few examples of invariable nouns, e.g. *fās* 'right', *īnstar* 'likeness', *māne* 'morning', *nefās* 'impiety', *nihil* 'nothing', and *secus* 'sex'. With the exception of *māne* (which also serves as an ablative 'in the morning'), these are neuter nouns which occur only in the nominative and accusative singular.

Table 7.1. Nominal inflection in PIE[a]

Case		Vocalic stem *o*-stems	Consonantal stems *eh₂*-stems	*i*-stems	*u*-stems	Pure consonantal stems
Singular						
nom.	(non-neuter)	-os	-eh₂	-is	-us	-s
	(neuter)	-om		-i	-u	-ø
voc.		-e	-eh₂	-ei	-eu	-ø
acc.	(non-neuter)	-om	-eh₂m	-im	-um	-m
	(neuter)	-om		-i	-u	-ø
gen.		-ī, -os -osio	-eh₂s, -eh₂es, -eh₂os	-eis	-ous	-es, os
dat.		-ōi	-eh₂ei	-eiei	-euei	-ei
abl.		-ōt	-eh₂es, -eh₂os	-eis	-ous	-es, os
loc.		-oi, -ei	-ei	-ēi	-ēu	-i, ø
instr.		-oh₁, -eh₁	-eh₂b^{h}i, -eh₂eh₁	-ib^{h}i, -ih₁	-ub^{h}i, -uh₁	-b^{h}i, mi, -h₁
Plural						
nom.	(non-neuter)	-ōs	-eh₂es	-eies	-eues	-es
	(neuter)	-eh₂		-ih₂	-uh₂	-h₂
voc.		-ōs	-eh₂es	-eies	-eues	-es
acc.	(non-neuter)	-ons	-eh₂ns	-ins	-uns	-ns
	(neuter)	-eh₂		-ih₂	-uh₂	-h₂
gen.		-ŏm	-eh₂ŏm	-eiŏm	-euŏm	-ŏm
dat.		-ob^{h}os, -omos	-eh₂b^{h}os, -eh₂mos	-ib^{h}os, -imos	-ub^{h}os, -umos	-b^{h}os, -mos
abl.		-ob^{h}os, -omos	-eh₂b^{h}os, -eh₂mos	-ib^{h}os, -imos	-ub^{h}os, -umos	-b^{h}os, -mos
loc.		-oisu	-eh₂su	-isu	-usu	-su
instr.		-ōis	-eh₂b^{h}i(s), -eh₂mi(s)	-ib^{h}i(s), -imi(s)	-ub^{h}i(s), -umi(s)	-b^{h}i(s), -mi(s)[b]

a This chart draws from Monteil (1986: 142), Beekes (1995: 168–195), and Sihler (1995: 248), with modifications (cf. Klingenschmitt (1992) for some different interpretations). It expands table 2.12 on page 68, in which the overall system of PIE nominal endings is given without differentiating the individual inflectional groups. Since the dual is functionally and formally moribund in Latin, it is omitted from the discussion.

b It is quite possible that the *-s* of **-b^{h}i(s)*, **-mi(s)* of the consonantal stems is not original but rather a secondary addition based on analogy with abl./dat. pl. **-b^{h}os*, **-mos*.

declension in *-o-* are primarily masculine and neuter; the third declension, the most internally complex of the Latin declensions, contains nouns of all three genders; nouns of the fourth declension in *-u-* (*-ū*) are mostly masculine and neuter; and those of the fifth in *-ē-* are regularly feminine.

While partly natural in that most inherently masculine entities (e.g. 'son', 'boy',

'king') occur with masculine inflection and most inherently feminine entities (e.g. 'daughter', 'girl', 'queen') are morphologically feminine, the Latin gender system is primarily grammatical in nature. That is, there is an arbitrary relationship between the inherent gender of an entity (or its lack of gender) and its grammatical gender or morphological class, often reflecting some historical peculiarity. For example, *nauta* 'sailor' and *agricola* 'farmer', while inherently masculine (their modifiers are inflected with masculine morphology), are inflected in a feminine paradigm. Nouns like *mēnsa* 'table' and *porta* 'gate', while inherently genderless, are inflected in a feminine paradigm, and *circulus* 'circle' is masculine. *Animal* 'animal', which is inherently of unspecified gender, but definitely animate, is inflected in a neuter paradigm. The nouns *nurus* 'daughter-in-law' and *socrus* 'mother-in-law', while inherently feminine, are inflected in a paradigm which is primarily masculine and neuter. Furthermore, there are many classes of nouns and adjectives in which the masculine and feminine are morphologically undifferentiated, as they probably were in early PIE, e.g. (masc.) *pater* 'father' and (fem.) *māter* 'mother', or (masc. and fem.) *facilis* vs. (neut.) *facile* 'easy'. The neuter gender in Latin is distinct from the masculine only in its nominative and accusative forms, which are always identical to each other in the neuter.

Number

PIE formally differentiated three numbers, viz. the singular, which indicated an object as a single entity, or as unmarked with respect to number; the dual, which indicated that there were two of an object; and the plural, which indicated that there were more than two of an object. Latin preserves the PIE singular and plural but has given up the dual morphologically in all but a few words, namely *duo* 'two', *ambō* 'both', possibly *octō* 'eight' (2 fours?), *vīgintī* 'twenty' (2 tens), and in a few disputed inscriptional examples.

Case

Of the eight cases which are reconstructed for classical PIE, Latin preserves six in productive usage (the nominative, vocative, accusative, genitive, dative, and ablative) and shows residual morphological evidence of a seventh (the locative). For the most part, the Latin cases continue functions from PIE, except for the ablative, which results, formally and functionally, from a historical syncretism of the PIE ablative, locative, and instrumental. All three PIE cases have left ample functional traces in the Latin ablative (e.g. the ablative of separation, the ablative of location, and the ablative of means), though only the PIE ablative and locative have left a strong morphological presence in Latin as well. The Latin dative and ablative plurals always share a common form. See table 7.1.

Table 7.2. The Latin *o*-stem declension

	'garden'	'master'	'man'	'war'
Sg.				
nom.	hortus	magister	vir	bellum
voc.	horte	magister	vir	bellum
acc.	hortum	magistrum	virum	bellum
gen.	hortī	magistrī	virī	bellī
dat.	hortō	magistrō	virō	bellō
abl.	hortō	magistrō	virō	bellō
(loc.	domī 'at home'			bellī 'in time of war')
Pl.				
nom.	hortī	magistrī	virī	bella
voc.	hortī	magistrī	virī	bella
acc.	hortōs	magistrōs	virōs	bella
gen.	hortōrum, hortum	magistrōrum, magistrum	virōrum, virum	bellōrum, bellum
dat.	hortīs	magistrīs	virīs	bellīs
abl.	hortīs	magistrīs	virīs	bellīs

7.2.3. The development of Latin nominal inflection from PIE

7.2.3.1. The *o*-stem (second) declension

This declension continues the PIE thematic **o*-stem declension. Stems ending in *-o-*, which form the only truly vocalic-stem group inherited from PIE (< **o*), comprise a large number of nominals in Latin. This group evolved into the Latin 2nd declension. The phonetic change by which the stem-final *-o-* becomes *-u-* before all final consonants obscures the etymological origins of this class somewhat. However, recognizable examples of the earlier form are common, such as OLat. *equos* 'horse', SERVOS 'servant', *iugom* 'yoke', and *aevom* 'age', which are analyzable as *equ-o-s*, *serv-o-s*, *iug-o-m*, and *aev-o-m* in terms of their IE origins. Nouns in this declensional class are typically masculine or neuter, with the nominative ending in *-us* (OLat. *-os*) and *-er* in the masculine and *-um* (OLat. *-om*) in the neuter. There is no formal differentiation between the masculine and neuter paradigms except that in the neuter, the nominative and accusative cases are always identical, in both singular and plural; and in the vocative singular, where some masculine nouns are formally differentiated from the nominative (table 7.2).

7.2.3.1.1. Singular

Nominative (non-neuters)
The masculine nominative ending *-us* is from **-s*, attached to the theme **-o-*, i.e. **-o-s*. Many forms are attested in Old Latin which show the earlier form of the nominative in *-os*, such as *equos* 'horse', SERVOS 'servant', and so on. The *-os* ending is evident inscriptionally in the late sixth century B.C.E.: cf. the Forum Romanum Cippus, which contains the words SAKROS ESED = *sacer esset* 'X was (subj.) sacred'. Masculines in *-er* (e.g. *puer* 'boy') and *-ir* (e.g. *vir* 'man') derive from earlier **-er-o-s*, **-ir-o-s*, with regular stress-induced syncope to **-er-s*, **-ir-s*, assimilation of *rs* to *rr*, then simplification to *r*, e.g. **pueros* > **puers* > **puerr* (> **puēr?*) > *puer* 'boy'. Also **-r-os*, found in *ruber* 'red' (< **$h_1$rud^h-ro-s*), which develops a vowel in the nominative (for a parallel, cf. *ager* 'field' from **agros* < **$h_2$egro-s*, reflected in Gk ἀγρός).

Nominative (neuters)
For the neuters, the ancestral form is **-o-m*, which is still found in Old Latin in such forms as *aevom* 'age', with regular change of *-om* to *-um*. Retention of the *-om* ending is especially favored, at least in spelling, by the presence of a preceding *u* or *v*, well into the first century B.C.E.

Vocative
The vocative singular of the masculines shows *e*-grade stem ablaut, with a *ø* ending (*serve* 'O servant'). Most likely the final *-e* of forms in *-er* and *-ir* (*puer* 'O boy', *vir* 'O man', etc.) was lost at an early stage, though *puere* is attested in Plautus (this could be an analogical innovation, however). Neuter vocatives are the same as the nominative and accusative forms.

Accusative
The accusative singular ending in PIE can be taken back to **-o-m*, both for masculines and neuters. This developed regularly into the familiar accusative singular *-um* seen in (masc.) *dominum* 'lord', (neut.) *aevum* 'age'. The final *-m* was weakly articulated, and was often omitted in inscriptions. Cf. *CIL* 1^2.8.9: HONC OINO PLOIRVME CONSENTIONT ROMAI DVONORO OPTUMO FVISE VIRO LVCIOM SCIPIONE (= CLat. *Hunc unum plurimi consentiunt Romae bonorum optimum fuisse virum Lucium Scipionem*) 'This man Lucius Scipio, as most agree, was the very best of all good men at Rome.'

Genitive
The form of the **o*-stem genitive singular in PIE is contested, with no single form reconstructible. There are several recoverable suffixes, including **-os* (< **-o-s*), **-osio* (< **-os-io*), and **-ī*. The form **-os* has no direct Latin reflex, while the second, **-osio*, appears to be modeled on a pronominal form (cf. Skt. gen. sg. *tásya* 'his', *devásya* 'of the god') added to stem-final *o*, representing an early PIE combination of gen. sg. *-o-s* plus the relative pronoun **io*, i.e. **-os-io*. While not common

in Latin, **-osio* appears in Faliscan and some non-Roman Latin examples. Cf. Falisc. **euotenosio** 'gen. sg. of masc. name', **kaisiosio** 'gen. sg. of masc. name' (= Rom. Lat. *caesī*), and the Lapis Satricanus genitives POPLIOSIO VALESIOSIO 'of Publius Valerius' (= Rom. Lat. *Publī Valerī*). Latin uses the morpheme *-ī* to mark the genitive singular of *o*-stems, an ending it shares with Celtic: cf. Ogham Ir. *maqī* 'of the son'. Lepontic and Venetic *-oiso* may be related somehow, though the relationship is difficult to establish. The origin of the *-ī* morpheme, which is not preceded by any thematic vowel, is obscure. It has been claimed that the *-ī* is originally an adverbial marker of estimation or quantity, evident in Skt. *mithuní-karoti* (lit.) 'X makes of a pair'. Such adverbial forms, which undoubtedly form the basis of the Latin Genitive of the Price, are seen in expressions such as *magnī aestimāre* 'to esteem greatly' and *sūmptī facere* 'to spend', which have *-ī* (the expected form for *sūmptī* would be *sūmptūs*). Another possibility is that this *-ī* is originally some kind of adjectival suffix with a meaning like 'belonging to' or 'connected with'. Such forms as Skt. *rathí-ḥ* 'charioteer' (< *rátha-* 'wagon, chariot') and perhaps Lat. *rēgī-na* 'queen', Skt. *rā́jñī* may also provide evidence of this formation. It is in any case of PIE date.

In nouns ending in *-ius*, *-ium* such as *fīlius* 'son' and *ingenium* 'talent', the original ending *-iī* was regularly contracted to *-ī* but was later restored analogically to the familiar *-iī*.

Dative

The dative singular ending **-ōi* (< **-o-ei*?) is evident in Gk. λόγωι (λόγῳ) 'to the word' and in Oscan **húrtúi** (= Lat. *hortō*) 'to the garden' and may be present in a few archaic forms in *-oe* and *-oi* (e.g. DVENOI in the Duenos inscription). In Latin, the normal development of this final diphthong was to the familiar *ō* of *hortō* 'to the garden', *virō* 'to the man', etc., with loss of the final member of the diphthong. This is the normal development of long diphthongs in final position, in contrast to their behavior in non-final position, where they undergo Osthoff's Law (cf. Lat. abl. pl. *-īs* < **-ōis*).

Ablative/instrumental

PIE ablative and instrumental merged functionally and formally in Latin, showing no morphological evidence of PIE **-eh₁/-oh₂*. Ablative singular **-ōt* (< **-o-et*?) is evident in Skt. *a*-stem (< **o*) ablatives like *devā́t* 'from the god', *āsyā́t* 'from the mouth', as well as in Osc. *-ud* (e.g. **sakaraklúd** 'from the temple', *dolud* 'by deceit'), and in OLat. PREIVATOD (*preivātōd*) 'private', EOD (*eōd*) 'him', MERITOD (*meritōd*) 'deservedly'. Ablatival adverb forms such as OLat. FACILVMED (*facilumēd*) 'easily' (later *facillimē*), Falisc. **rected** 'rightly' appear to be analogical to these *o*-stem ablative/instrumentals. Loss of final *-d* leaves the usual Lat. ablative ending *-ō*.

Locative

PIE **-oi* (< **-o-i*) and a variant **-ei* (< **-e-i*) are both evident in Latin. Locative **-ei*

(seen in Gk. ἐκεῖ 'there') appears in Osc. **eíseí tereí** 'in that territory' and in Latin adverbs like *hīc* 'here' and *illīc* 'there' (< **-ei-ce*). This ending is also attested in such forms as *Lanuviei* 'in Lanuvium' and *(diē) septumei* 'on the seventh (day)', and later developed into the more familiar locative (adverbial) form in *-ī* seen in *domī* 'at home', *bellī* 'in time of war', and *humī* 'on the ground'. Locative **-oi*, on the other hand, which is found in Gk. οἴκοι 'at home', is present in Latin adverbs such as *hūc* 'to this place' and *illūc* 'to that place' (< **-oi-ce*). In principle, it is not always possible to know whether a given locative form in Latin reflects final **-ei* or **-oi*, since both developed regularly as *-ī*.

7.2.3.1.2. Plural

Nominative/vocative (non-neuters)

The PIE nominal ending **-ōs* (< **-o-es*) serves as the foundational form for the nominative/vocative plural in many of the IE languages, e.g. Skt. (unchanged form) *kắmās* 'loves', *devấs* 'gods'; Osc. **Núvlanús** (= Lat. *Nōlānī*) and the pronominal form *ius-c* (= Lat. *iī* 'those'); also Umbr. **prinuvatus** 'deputies', Goth. *dagōs* 'days'. In Latin (as in Greek), the nominative/vocative plural was replaced at a very early stage by the demonstrative pronominal ending **-oi*, as seen in pronominal nominative plurals such as Gk. οἵ, Skt. *té* (< **tai* < **toi*), Goth. *þái*, and Lith. nominal *tẽvai* 'fathers'. The motivation for this replacement of **-ōs* by **-oi* appears to be the constituent unity of the pronominal and its accompanying nominal in constructions like Lat. **illoi lupōs* > **illoi lupoi* (= *illī lupī*) 'those wolves'. There are sporadic attestations of final *-oe* (< **-oi*), as in *pilumnoe poploe* in the *Carmen Saliare*, which is of doubtful meaning but may be something like *pīlumnī populī* 'the armed people'. More often *-ei* is found, as in OINVORSEI VIREI (= *ūniversī virī*) 'all men' in the *SC de Bacch.* Final *-ei* further developed into *-ē*, and then to the familiar nom. pl. *-ī*, as is evident from the inscriptional form PLOIRVME (= *plūrimī*) 'most'. There are also some early inscriptions which show a form *-eis*, *-īs* (e.g. the names MINVCIEIS, RVFEIS, VERTVLEIEIS), as well as the Plautine nom. pl. *hī-s-ce* 'these' and nouns ending in *-es* such as *magisteres* 'chiefs'. These forms appear to be hybrids which have incorporated the final *-s* of the athematic declensions.

Nominative/vocative/accusative (neuters)

In PIE the inanimate *o*-stem plurals were replaced at an early date by the suffix **-eh₂* (> *-ā*), which is probably a collective suffix in origin. Evidence for former collective status of this suffix is to be seen in the Hittite use of the neuter "plural" with 3rd singular verbs, a syntactic type already known from Greek neuter plurals which are used with singular verbs of the type τὰ παιδία παίζει (lit.) 'the children plays', which is interpreted as 'a collection of children plays'. This type is upper register "Attic syntax" and is marked as stylistically elegant. The more common, less marked construction with plural verb is represented in the following example from Xen. *An.* 1.7.17: ... φανερὰ ἦσαν καὶ ἵππων καὶ ἀνθρώπων ἴχνη πολλά (lit.

'many traces both of horses and of men were plain'. But the archaic status of the τὰ παιδία παίζει type is now assured by the Hittite evidence.

The full-grade *-ā* (< **-eh₂*) is attested in several IE languages, as seen in Skt. *yúgā*, 'yokes', Umbr. **iuka**, **iuku** 'prayers', Osc. **prúftú** 'things (which have been) placed'. It is preserved in Latin expressions of counting in tens such as *trīgintā* 'thirty', *quadrāgintā* 'forty', and in pronominal adverbs like *propterea* 'therefore', *interea* 'meanwhile'. In Latin nominal inflection, however, only the reduced grade *-a* (< **-h₂*) is found (*bella* 'wars', *templa* 'temples', etc.). It has been claimed that the **-h₂* ending alone is the original collective marker (see Beekes 1995: 182).

Accusative (non-neuters)

The accusative ending is **-ons* (< **-o-ns*), which is preserved in Gk. (Cret.) ἐλεύθερονς 'free ones' and in occasional accusative forms of the article (e.g. τόνς for τούς). In Latin the ending **-ons* develops as elsewhere into *-ōs*. For a parallel, cf. *cōnsul/cōsul* 'consul'.

Genitive

The reduced grade **-om* of the PIE ending **-ŏm* (< **-ŏ-m*) serves as the basis for the Latin genitive plural, developing as normally into *-um*. A full-grade form **-ōm* is found (cf. Gk. λύκων 'of the wolves', ζυγῶν 'of the yokes'). The short-vowel variant may be original; its archaic status seems likely given the presence of the *-om* ending in the Garigliano inscription (**AUDEOM** 'of the Audei'), in some fixed Latin expressions like DVOMVIR 'one of (a committee of) two men', SOCIVM 'of partners' in the *SC de Bacch.*, and in various Plautine forms such as *verbum* 'of words', *inimīcum* 'of enemies', and elsewhere. This form is also the one found in both Oscan (cf. **Núvlanúm** 'of the Nolani') and Umbrian (cf. **pihaklu** 'of offerings'). The ending *-um* was eventually replaced by the familiar classical ending *-ōrum* through a series of complicated analogies. To begin with, the **eh₂*-stem genitive ending **-eh₂om* was influenced by the pronominal genitive ending **-eh₂som* seen in Skt. *tā́sām* 'of these ones', yielding the ending *-ā-rum* (cf. *rosārum* 'of the roses', *portārum* 'of the gates'). From this reanalysis of the **eh₂*-stems, the *o*-stem nouns were reshaped analogically, yielding the gen. pl. *-ōrum* seen in *servōrum* 'of the servants' and *templōrum* 'of the temples'. Though the two endings *-um* and *-ōrum* existed side by side in some forms (e.g. *deum/deōrum* 'of the gods'), the *-ōrum* variant became the productive one in the classical period, supported, no doubt, by the feminine *-ārum*.

Dative/ablative/instrumental/locative

As noted, the dative and ablative plurals always share a common form in Latin. Also, the ablative in Latin, both singular and plural, arises from the historical syncretism of the PIE ablative, instrumental, and locative cases. Thus the Latin dative/ablative plural in effect represents a syncretism of four cases. The PIE dative/ablative ending **-bʰos/-mos* was replaced at an early stage in Latin by the form which resulted from the merger of the instrumental and locative endings,

Table 7.3. The Latin *a*-stem declension

	'gate'	
	Sg.	Pl.
nom.	porta	portae
voc.	porta	portae
acc.	portam	portās
gen.	portae	portārum
dat.	portae	portīs
abl.	portā	portīs
(loc.	Rōmae 'at Rome')	

namely **-ōis* and **-oisu*. The formal and functional syncretism of the ablative, instrumental, and locative resulted in a dative/ablative form **-ois* (shortened from *-ōis* by Osthoff's Law), which developed into Latin as *-eis*, then *-īs*. The Garigliano inscription contains the forms **MEOIS SOKIOIS** '(with) my companions', which evidences the rare ablative plural *-ois*, seen with a different vowel in the form *poploes* (= CLat. *populīs*) from the *Carmen Saliare*. The transitional *-eis* is evident inscriptionally in several forms, e.g. AEDIFICIEIS 'from the buildings' and CASTREIS 'from the camp' (= CLat. *aedificiīs*, *castrīs*).

7.2.3.2. The *a*-stem (first) declension

Latin nouns ending in *-a*, overwhelmingly feminine, are derived from PIE **-eh₂*, where the **-h₂* alone may reflect an early PIE collective ending. This highly productive stem class forms the basis of the Latin first declension feminine nouns like *porta* 'gate', *familia* 'family', *via* 'road', and so on (table 7.3). There are a few masculine agent nouns in the *a*-class, with several different origins. Some are borrowed from Greek (*nauta* 'sailor', *poeta* 'poet'); some are borrowed from Etruscan (*verpa* 'male member', *cacula* 'servant', *sculna* 'arbitrator'); some are proper names (*Cherea*, *Demea*); and a few are analogical compound formations such as *agricola* 'farmer', *convīva* 'guest', and *advena* 'foreigner', perhaps modeled on the collective *indi-gena* 'native'.

7.2.3.2.1. Singular

Nominative/vocative

Although there is a possibility that the form of the PIE nominative/vocative singular was **-h₂* (> Latin *a*), the most likely form of these cases was full-grade **-eh₂* (> **-ā*), with *ø*-suffix. PIE **eh₂* regularly passes to Lat. *ā*: cf. Lat. *stā-re* 'to stand', Gk. (Dor.) ἵστᾱμι 'I stand' (< **steh₂-*); Lat. *fā-tur* 'X speaks', Gk. (Dor.) φᾱτί (< **bʰeh₂-*). Greek preserves the nominative *-ā* in such forms as χώρᾱ 'place' and ἡμέρᾱ 'day', and this ending is also recoverable in Oscan–Umbrian final *-u*, *-o*

(both with rounding) and *-a*. Greek also preserves *$*-h_2$* in the suffix *$*-i-h_2$* (cf. Gk. μία 'one' < *$*sm-i-h_2$*), and in the neuter plural (= collective) ending *-a* (cf. δῶρα 'gifts'). In Latin, however, only the *-a* variant is found, for both the nominative and the vocative, and it must be allowed that for Latin a reconstruction with *$*-h_2$* would suffice, with the *$*-h_2$* serving as a suffix with collective value. However, since a reconstruction with *$*-eh_2$* is more plausible on comparative grounds, there must be some general mechanism whereby the final *$*ā$* has been reduced to *a* in Latin. One such mechanism is iambic shortening. It has been claimed that the pattern created by iambic words such as *$*togā$* > *toga* 'a covering', *$*aquā$* > *aqua* 'water', *$*locā$* > *loca* 'places' was eventually morphologized as the conventional exponent of the nominative and spread analogically to other members of these inflectional classes, e.g. *anima* 'spirit', *vīta* 'life', and *templa* 'temples' (see e.g. Monteil 1986: 168, Leumann 1977: 101). In the process a new template for the nominative singular of *$*ā$*-stems was formed, specifying that the nominative and the parallel vocative morpheme be expressed by a light syllable.

Accusative

The ending of the accusative in PIE was *$*-eh_2m$* (< *$*-eh_2-m$*), which develops into Proto-Italic *$*-ām$*. The accusative marker *$*-eh_2m$* is evident in forms such as Gk. χώρᾱν 'place' and Skt. *sénām* 'army' and can also be seen in Osc. fem. acc. sg. **paam** 'whom'. In Latin, the shortening of *$*ā$* before the final *-m* yields a consistent *-am*, seen in familiar forms such as *portam* 'gate', *togam* 'covering', etc.

Genitive

The reconstructed genitive ending *$*-eh_2s$*, *$*-eh_2es$*, *$*-eh_2os$* (< *$*-eh_2-(e/o)s$*), with full grade, is seen in Goth. *gibōs* 'gift', Lith. *rasõs* 'dew'. It develops into *$*-ās$*, evident in Gk. ἡμέρᾱς 'of the day', Oscan *eituas* 'of money', and Umbr. *totar* 'of the city'. The ending *$*-ās$* is preserved in some OLat. forms such as the proper names *Latōnās*, *Monētās*, the noun forms *terrās* 'of the land', *(dux ipse) viās* '(the very leader) of the road', and in the expression *paterfamiliās* 'father of the family'. This ending is not the historically productive one in Latin, however. At an early date *$*-ās$* was replaced by the ending *-āī*, that is, the stem-final *-ā* followed by the *-ī* genitive marker imported from the masculine *o*-stems (*virī* 'of the man', etc.). The resulting form *-āī* is attested in several forms such as *silvāī frōndōsāī* 'of the leafy forest' and *Albāī lōngāī* 'of Alba Longa', both found in Ennius and scanned long, in Plautine *magnāī rēī publicāī* 'of the great republic', and in other poetic texts in which meter reveals the length of the vowels. It also occurs in the *SC de Bacch.* in TABELAI DATAI 'of the tablet which has been given'. The phonetic chain by which *-āī* becomes CLat. *-ae* (*portae* 'of the gate', *togae* 'of the toga', etc.) appears to be something like *-āī* > *-aī* > *-ai* > *-ae*.

Dative

The PIE ending *$*-eh_2ei$* (< *$*-eh_2-ei$*) evolved into *-āi*, preserved in Greek datives such as ἡμέρᾳ (> ἡμέρᾳ) 'to the day', and in Latin inscriptional forms like

DIANAI and MENERVAI. Some older dialectal and inscriptional forms in Latin preserve a dative with a bare *-ā*, e.g. the proper names *Dianā* and *Menervā* (cf. the treatment of final *-ōi* in the datives of *o*-stems). The regular development of *-āi*, however, is to *-ai*, with a shortening of the first element of the diphthong seen in Osc. **deívaí** 'to the goddess', and then to the familiar CLat. *-ae* (*dīvae* 'to the goddess', *fēminae* 'to the woman', etc.).

Ablative

The PIE ablative ending **-eh₂s* (< **-eh₂-s*) was replaced in Proto-Italic times by a formation built on the *o*-stems, with final *-d* (< **-t*), namely *-ād*. This ending is found in Early Latin inscriptions (e.g. SENTENTIAD (*sententiād*) 'by the opinion'), and in the ablative feminine EAD (*eād*) of the personal pronoun *is, ea, id* in the *SC de Bacch.* The final *-d* is preserved in Oscan (cf. **eítuvad** 'by money', *toutad* 'from the city') but is lost in Umbrian (cf. *tota(-per)* 'for the state') and is regularly lost in Latin after a long vowel, giving the familiar CLat. form in *-ā* seen in *togā* 'with a toga', *portā* 'by the gate', and so on.

Locative

The PIE locative ending **-eh₂i* was formed through the addition of the ending **-i* to stem-final **-eh₂-* (i.e. **-eh₂-i*), which developed into the form **-āi* (> *-ai* > *-ae*). This case was merged functionally with the dative in Greek but with the ablative (and the instrumental) in Latin and the other Italic languages. The ending is found in several Latin forms, such as *Rōmai* (later *Rōmae*) 'at Rome', *mīlitiae* 'in military service', and in several phrases in Plautus such as *domī meae* 'at my home' and *proxumae vīcīniae* 'in the immediate neighborhood'. Cf. also Oscan **eísaí víaí mefiaí** (= Lat. *in eā viā mediā*) 'in the middle of that road'.

Instrumental

The PIE instrumental endings **-eh₂bʰi*, **-eh₂eh₁* are problematic for Latin, and in any event merged with the ablative in form and function. It is conceivable that Lat. *quā* 'in what manner' reflects an old instrumental (with *-ā* < **-eh₂*), but this form could just as easily be an ablative.

7.2.3.2.2. Plural

Nominative/vocative

In PIE the nominative/vocative plural ending was **-eh₂es*, i.e. **-eh₂* followed by the inflection **-es*. Through a phonetic contraction, **-eh₂es* produced the Proto-Italic ending **-ās*. Still evident in Oscan and Umbrian (cf. Osc. **aasas** (= Lat. *ārae*) 'altars', Umbr. **urtas** (= Lat. *ortae* 'arisen'), **-ās* was replaced in Latin by **-āi* (> *-ai* > *-ae*) to give classical forms like *togae* 'togas' and *portae* 'gates'. This new construction is built on analogical parallel to the innovative *o*-stem nom. pl. *-oi*, with possible additional influence from the dual forms such as *duai* (*duae*) 'two'. The older form in **-ās* is apparently preserved in a devotional tablet as *quās* (= *quae*

'which'), and in several other, less secure representatives.

Accusative

The PIE ending **-eh_2ns* (**-eh_2-ns*) is recoverable from a variety of IE languages, e.g. Osc. **víass** 'roads', Umbr. **vitlaf** 'bull calves', both of which rest on earlier **-ss*, assimilated from **-ns*; cf. also the Cretan form στεγανς 'coverings', with the *n* preserved. With *-ns* added to stem-final **-eh_2-*, the resulting **-eh_2ns* develops into Proto-Italic **-āns*, from which it becomes **-ans* with regular vowel shortening. The conventional Latin ending *-ās* shows regular loss of **n* before **s* with compensatory lengthening (*togās* 'togas', *portās* 'gates', etc.).

Genitive

When added to stem-final **-eh_2-*, PIE reduced-grade **-om* yields **-eh_2om* > **-āom*, which in turn becomes Latin *-um*, as in the *o*-stems. Inherited *-um* in Latin is preserved in a few Greek borrowings such as *(mille) drachmum* '(of one thousand) drachmas' and in a few compounds such as *agricolum* 'of the farmers'. These may reflect the original archaic status of the **-om* variant. At an early stage, the Italic languages (and Greek as well) replaced the inherited *-um* with the ending **-sŏm*, which is characteristic of the demonstrative pronouns, as seen in Skt. gen. pl. fem. *tásām* 'of those ones', Lat. *hārum* (with rhotacized **s*). **-sōm* is added to *-eh_2-*, resulting in the ending **-āsōm*. Thus Gk. θεῶν (< **θεᾱσῶν) 'of the goddesses' (cf. Hom. θεάων), Osc. **eehiianasúm** 'of those to be sent out', *egmazum* 'of things', Umbr. **hapinaru(m)** 'of the lambs', and Lat. *togārum* 'of the togas', *portārum* 'of the gates'.

Dative/ablative/instrumental

PIE **-eh_2-b^hos*, **-eh_2-mos* characterized the dative and ablative plurals, while the instrumental plural was marked by **-eh_2-$b^hi(s)$*. The ending **-mos* is found in Baltic, Slavic, and Germanic but is nowhere reflected in the Italic languages. The ending **-ā$b^hi(s)$*, from full-grade **-$eh_2b^hi(s)$*, was replaced in the Proto-Italic period by **-āis* (> **-ais*) on analogy to the *o*-stem instrumental ending **-ois*, which served as the basis for the dative/ablative plural. Final **-ais* can be recovered in Oscan *-ais* (cf. **kerssnaís** 'to the dinners') and Umbrian *-eis* (cf. **tekuries** 'at the decurial festival'). **-ais* develops regularly in Latin as *-ais*, then as *-eis*, which is recoverable inscriptionally in such forms as SOVEIS (= *suīs*) 'to their own', MANIBIEIS (= *manubiīs*) 'from booty', and many others. From *-eis* the development to the familiar *-īs* is regular, as in *togīs* 'to/from the togas' and *portīs* 'to/from the gates'.

In certain *a*-stem nouns with dative/ablative forms which were ambiguous with their masculine *o*-stem counterparts, new dative/ablative feminines were formed to eliminate the gender ambiguity, e.g. *deābus* 'to/from the goddesses' (cf. *deīs* 'to/from the gods') and *fīliābus* 'to/from the daughters' (cf. *fīliīs* 'to/from the sons').

Locative

The PIE locative plural **-eh₂-su* is nowhere reflected in Latin or the other Italic languages.

7.2.3.3. The "third declension" consonantal and *i*-stems

The Roman grammarians included several stem types from PIE under the name of the "third declension" (table 7.4). The first of these are the pure consonantal stems, i.e. those ending in a stop (e.g. *duk-s* 'leader', *pēs* 'foot' < **ped-s*), a fricative (e.g. *lepōs* 'charm', *mōs* 'custom'), a nasal (e.g. *ratiō[n]* 'account', *hiem-s* 'winter'), or a liquid (e.g. *cōnsul* 'consul' and *māter* 'mother'). Also included in the Roman classification of the third declension are the *i*-stems (e.g. *cīvis* 'citizen'), which in PIE were consonantal (**i-*) stems and which show mutual analogical influence with the pure consonantal stems. A final type of inherited stems in *u* (e.g. *fructus* 'fruit') are inflectionally parallel to the *i*-stems and derive from the PIE consonantal **u*-stems. This latter group was not included by the Roman grammarians in the third declension, but served to make up the "fourth declension" of Latin nouns. It will be taken up separately below.

7.2.3.3.1. The consonantal stems of the third declension

The Latin consonantal stem nouns continue the pure consonantal stems of PIE. These nouns are grouped morphologically with the *i*-stems to form the Latin third declension.

Singular

Nominative (non-neuters). The PIE nominative ending **-s* is added directly to the final consonant of the stem, as in Gk. θρίξ 'hair' [tʰrik-s], Lat. *dux* 'leader' [duk-s]. The combination of stem-final consonant with following *-s* yields several different phonological results in Latin.

1. Non-dental voiced obstruents are assimilated to the voicelessness of the following *-s* , as in *urb-s* 'city' (pronounced *urps*, and in fact recorded with this spelling in some early inscriptions), *rēmex* 'rower' (< **rēmeg-s*; cf. gen. *rēmig-is*), *nix* 'snow' (cf. gen. *niv-is*). If voiceless, they simply remain, as in *dux* 'leader' (cf. *dūcō*), *prīnceps* 'chief' (< **prīmo-cap-s*).
2. Dental obstruents are assimilated to a following *-s*, then simplified, as can be seen in forms such as *lapis* 'stone' < **lapid-s* (cf. gen. *lapid-is*), *mīles* 'soldier', Plautine *mīless* < **mīlet-s* (cf. gen. *mīlitis*); *virtūs* 'manliness' < **virtūt-s* (cf. gen. *virtūtis*).
3. PIE nouns ending in sonorants (**r*, **l*, **m*, **n*) lacked the ending **-s* and were typically accompanied by a lengthening of the pre-inflectional vowel. The Latin developments are as follows.

Table 7.4. The Latin third declension consonant stems

	'chief' (masc.)	'voice' (fem.)	'stone' (masc.)	'merit' (fem.)	'conqueror' (masc.)
Sg.					
nom.	prīnceps	vōx	lapis	virtūs	victor
voc.	prīnceps	vōx	lapis	virtūs	victor
acc.	prīncipem	vōcem	lapidem	virtūtem	victōrem
gen.	prīncipis	vōcis	lapidis	virtūtis	victōris
dat.	prīncipī	vōcī	lapidī	virtūtī	victōrī
abl.	prīncipe	vōce	lapide	virtūte	victōre
Pl.					
nom.	prīncipēs	vōcēs	lapidēs	virtūtēs	victōrēs
voc.	prīncipēs	vōcēs	lapidēs	virtūtēs	victōrēs
acc.	prīncipēs	vōcēs	lapidēs	virtūtēs	victōrēs
gen.	prīncipum	vōcum	lapidum	virtūtum	victōrum
dat.	prīncipibus	vōcibus	lapidibus	virtūtibus	victōribus
abl.	prīncipibus	vōcibus	lapidibus	virtūtibus	victōribus
	'sea' (neut.)	'likeness' (fem.)	'custom' (masc.)	'race' (neut.)	
Sg.					
nom.	aequor	imāgō	mōs	genus	
voc.	aequor	imāgō	mōs	genus	
acc.	aequor	imāginem	mōrem	genus	
gen.	aequoris	imāginis	mōris	generis	
dat.	aequorī	imāginī	mōrī	generī	
abl.	aequore	imāgine	mōre	genere	
Pl.					
nom.	aequora	imāginēs	mōrēs	genera	
voc.	aequora	imāginēs	mōrēs	genera	
acc.	aequora	imāginēs	mōrēs	genera	
gen.	aequorum	imāginum	mōrum	generum	
dat.	aequoribus	imāginibus	mōribus	generibus	
abl.	aequoribus	imāginibus	mōribus	generibus	

a. In *r*-stems the pre-inflectional long vowels were regularly reduced: cf. Gk. nom. πατήρ 'father', ῥήτωρ 'orator', Skt. *pitā́* 'father', *dā́tā* 'giver' vs. Lat. *pater* 'father', *victor* 'conqueror'. Latin has a few stems ending in *-l* (cf. *vigil* 'watchman', which may have been an original *i*-stem), *cōnsul* 'consul', *sōl* 'sun', and *sāl* 'salt (cf. Gk. ἅλς). These do not constitute a productive class, however.

b. There is only one isolated noun *hiem(p)-s* 'winter' ending in a stem-final *-m*.

In stems ending in *-ōn*, the final nasal is lost, and the *ō* is mostly generalized throughout the paradigm: cf. *ratiō*, gen. *ratiōnis* 'reason', *sermō*, *sermōnis* 'speech'. Stems ending in *-ēn* such as *liēn*, *liēnis* 'spleen' and *rēn*, *rēnis* 'kidney' preserve both the long vowel and the nasal. *Rēn*, however, is most likely a back-formation based on the more common plural form *rēnēs*.

c. Neuter heteroclite stems in *r/n* such as Lat. *iecur*, *iecinoris* 'liver' are discussed below with the neuter nouns.

4. Stems ending in *s* fall into several categories.

a. Masculine and feminine nouns from PIE **-ōs* (e.g. **h₂eusōs-* 'dawn', cf. Gk. ἠώς) typically generalize the *ō* in the oblique cases, as in *flōs*, *flōris* 'flower', *mōs*, *mōris* 'custom', *honōs*, *honōris* 'honor'. When the intervocalic *r* of the oblique cases is generalized to the nominative, as in *honor* 'honor', *lepor* 'charm', *arbor* 'tree', the inherited *ō* is shortened by regular sound change, resulting in doublets such as *honōs/honor*, *lepōs/lepor*, and *arbōs/arbor*. This creates a notable situation in that the paradigmatic unity of the word is either disrupted by the *s/r* alternation or by the *V̆/V* alternation between the nominative and the oblique cases. This may be why the older form with *-ōs* appears so frequently, even in the later language, suggesting that the morphologized *s/r* alternation, which was always accompanied by *V/V*, constituted less opacity than the *V̆/V* alternation, which was always accompanied by *r/r*.

b. Masculine and feminine stems in *-ēs* such as *Cerēs*, *Cereris* 'Ceres', *pūbēs* (*pūber*), *pūberis* 'adult' (also *mulier*, *mulieris* 'woman', with obligatory shortening in *mulier*) show an alternation between *ē* in the nominative and *e* in the oblique cases. This is not a productive inflectional class in Latin.

c. Neuter nouns ending in *-os* which maintain original **o* in the nominative such as *rōbur* (OLat. *rōbus* < **rōbos*), *rōboris* 'oak' are discussed below with the neuter nouns.

Nominative/vocative/accusative (neuters). The PIE inanimates had no specific morphological marking in the nominative, vocative, or accusative, with the bare stem serving as the typical form. This situation is attested in Latin for all neuters: cf. nom./acc. *nōmen* 'name', *genus* 'race', *flūmen* 'river', *cor* 'heart', etc. The only exception to this is the innovative neuter participial ending *-s*, which is undoubtedly modeled on the masculine/feminine nominative in *-s* (*amāns* 'loving', *monēns* 'warning', etc.).

Neuter nouns with stem-final *-os* maintain original **o* in the nominative, which is often generalized in the oblique forms: cf. *rōbur* (OLat. *rōbus* < **rōbos*), *rōboris* 'oak', *aequor* (< **aequos*), *aequoris* 'sea', *corpus* (< **corpos*), *corporis* 'body'. The *e*-grade can be seen in related forms such as *tempestās* 'a space of time' vs. *tempus*, *temporis* 'time'. Examples such as the genitive forms *generis* 'race' (*genus*), *ponderis* 'weight' (*pondus*), and *sceleris* 'crime' (*scelus*) no doubt continue the ablaut variant **e* in the oblique cases, but this cannot be demonstrated because of the rule

by which any short vowel is changed to *e* before *r*, as in *cinis, cineris* 'ashes'.

Latin attests a class of neuter heteroclite stems in *r/n* which is directly derived from the **r/n*-stems of PIE. Such nouns as Lat. *iecur, iecinoris* 'liver' (also found as *iecoris*, with the *r* generalized), *femur, feminis* 'thigh' (also found as *femoris*), and *iter, itineris* 'road' (for the expected **itinis*) are paralleled by such forms as Gk. ὕδωρ, ὕδατος 'water', Umbr. **utur**, abl. **une**; OE *wæter*, with *r* generalized; Gk. ἧπαρ, ἥπατος 'liver', Skt. *yákṛt, yaknáḥ*; Lith. *jāknos*; and Skt. *áhar, áhnaḥ* 'day'. As can be seen, the strong pressure to regularize paradigms results in a partial deformation of this class in Latin.

Vocative (non-neuters). In PIE the vocative was characterized by a short stem vowel and ∅ ending: cf. Gk. nom. πατήρ 'father', voc. πάτερ, Skt. *pitá*, voc. *pítar*. In Latin, the length distinction in the stem was largely eliminated, resulting in a virtual identity between nominative and vocative: cf. nom./voc. *pater*. This tendency is in evidence even in consonantal stems with nominative marker *-s* (e.g. *prīnceps* 'chief', *dux* 'leader'), where the vocative is the same: cf. nom./voc. *prīnceps, dux*).

Accusative (non-neuters). In combinations of non-sonorant + **m̥* the Latin accusative singular develops regularly as *-em*: cf. *pedem* 'foot' (Gk. πόδα), *nepōtem* 'nephew' (Ved. *nápātam* 'grandson'), etc. Because of the tendency in PIE and Latin for a sonorant to disappear before another sonorant, or for *s* to be deleted before *m*, it must be the case that the ending *-em* of *salem* 'salt' (< **sal-m̥*) or *arborem* 'tree' (< **arbor-em* < **arbōs-m̥*) or *ratiōnem* 'reason' (< **ratiōn-m̥*) is the result of the morphologization of *-em* as the animate accusative marker. This then allows the root (*sal-*, *arbor-*, *ratiōn-*) to remain intact throughout the paradigm and eliminates the root allomorphy in the accusative which would result from the elimination of these sounds in this position, viz. **sām*, **arbōm*, or **ratiōm*.

Genitive. The PIE genitive singular ending **-es*, **-os* shows traces of pre-inflectional ablaut (cf. *carō, carnis* 'flesh', *pater, patris* 'father'). The ablaut variant **-es* yields the productive Latin suffix *-es*. This ending is preserved intact in a few forms in Old Latin inscriptions (e.g. the names APOLONES, VENERES, SALVTES), but eventually it underwent the normal phonetic weakening to *-is*, as seen in forms such as *lapidis* 'of the stone', *leōnis* 'of the lion', and *mīlitis* 'of the soldier'. The variant form **-os* (> *-us*) is rare in Latin, though it is the normal form in Greek (cf. ποδός 'of the foot', κλωπός 'of the thief'). A few Latin examples are the names DIOVOS, *Cererus, Venerus, Honorus*, PATRVS 'of the father', and REGVS 'of the king'.

Dative. The PIE ending **-ei* developed into Latin as *-ei* (> *-ī*). This ending is preserved in Oscan as *-ei*, as in **patereí** 'to the father' (= Lat. *patrī*), **Diúveí** 'to Jupiter' (= Lat. *Iovī*). There are numerous inscriptional examples of the older ending in Latin, e.g. VIRTVTEI = *virtūtī* 'to valor', SIBEI = *sibī* 'to oneself', APOLONEI = *Apollōnī* 'to Apollo'. It is all but certain that *-ei* passed through the intermediate phonetic stage of *-ē*, which may be attested in inscriptional forms such as DIOVE and APOLONE.

Ablative. The PIE ablative was identical to the genitive ending **-es/-os*. This ending, however, is nowhere evident in Latin ablatives, which are functionally the result of a historical syncretism of the PIE ablative, locative, and instrumental. The Latin ablative singular in *-e* (*lapide* 'by the stone', *leōne* 'by the lion', etc.) probably attests the PIE locative in **-i*, with regular change of *-i* to *-e* (cf. Greek datives such as κλωπί 'to the thief', γέροντι 'to the old man' for the original *i*). There are some examples from Old Latin which show an analogical form with final *-īd*, viz. BOVID 'by the cow' (= *bove*), CONVENTIONID 'by the assembly' (= *conventiōne*), and OPID 'by might' (= *ope*), based on the *o*-stem nouns in *-ōd* (cf. PREIVATOD 'private' in the *SC de Bacch.*).

Locative. Though generally moribund in Latin, there are traces of the PIE locative in **-i*. Locative expressions such as *rūre* 'in the countryside', *Carthāgine* 'at Carthage' continue the PIE consonantal stem locative, with alternate forms in *-ī* (*rūrī*, *Carthāginī*) modeled on the *o*-stems like *domī* 'at home', *humī* 'on the ground'. It is likely that the present active infinitive of the verb (e.g. *agere* 'to do', *legere* 'to read') is derived from **-si*, in which the final **-i* appears to be from an old consonantal stem locative which has undergone normal phonetic development.

Instrumental. The PIE instrumental ending **-h_1* is not continued in the Latin consonantal stems.

Plural

Nominative/vocative (non-neuters). The PIE ending **-es* is well attested in Greek (cf. κλῶπες 'thieves'), Sanskrit (cf. (unchanged form) *vā́cas* 'voices'), Oscan (cf. **humuns** 'men' = Lat. *hominēs*), and elsewhere. It was replaced in Latin by the ending *-ēs* from the **i*-stems. PIE **-es* would have become Latin *-is* by regular phonetic rule, and it is possible that the analogical change to *-ēs* was motivated by an avoidance of homophony with the genitive singular (cf. *leōnis* 'of the lion'). It is more likely, however, that the replacement by *-ēs* is due to the analogical influence of the accusative plural ending, which is also *-ēs*.

Nominative/vocative/accusative (neuters). The PIE feminine suffix **-eh_2* gave rise to the neuter plural (originally collective) suffix *-a*, which has been shortened from **ā* via mechanisms considered above in the discussion of **-eh_2*-stems (or perhaps the **h_2* alone represents the original ending). The Latin ending is seen in familiar plurals such as *scelera* 'crimes', *aequora* 'seas', and *nōmina* 'names'. Participles in *-nt-* (*amant-* 'loving', *monent-* 'warning') have formed the neuter plurals on the basis of the *i*-stem plurals, resulting in *amantia* 'things loving', *monentia* 'things warning', etc.

Accusative (non-neuters). The PIE accusative plural **-ns* (cf. Gk. κλῶπας 'thieves', Skt. (unchanged forms) *vācás*, *vā́cas* 'voices') developed first into Lat. **-ens*, which passes regularly to *-ēs* (*pedēs* 'feet', *leōnēs* 'lions').

Genitive. The PIE genitive plural ending is **-ŏ̄m*, represented as *-ōm* in Greek (cf. κλωπῶν 'of the thieves', γερόντων 'of the old men') and Sanskrit (cf. *vācā́m* 'of the voices', *marútām* 'of the winds'). In the Italic languages, the form **-om* is found (cf. Osc. **fratrúm** 'of the brothers', Umbr. *fratrom*). The short-vowel variant may be the original one. This form is found inscriptionally in Latin (cf. POVMILIONOM 'of the dwarves' and DVOMVIR 'one of (a committee of) two men'). In Classical Latin it develops, as regularly, to *-um*: cf. *frātrum* 'of the brothers', *mīlitum* 'of the soldiers'.

Dative/ablative. The PIE ending **-mos* (cf. Goth. *brōþrum* 'to the brothers', Lith. *dukterìms* 'to the daughters') was not continued in Latin, Greek, or Sanskrit, which continue PIE **-b^h-*. Judging from the Indo-Iranian and Mycenaean evidence, the ending was added directly to the final consonant of the stem (Skt. (unchanged form) *marúdbhyas* 'to/from the winds', Myc. *po-pi* 'with feet'). In the Italic languages, the dative/ablative ending **-b^{h}os* ending underwent several analogical modifications. In Umbrian, it was modified in accord with the *u*-stems, as in *fratrus* (= Lat. *frātribus*) 'to the brothers' and *homonus* (= Lat. *hominibus*) 'to the men', while in Oscan and Latin it was drawn into the pattern of the *i*-stems: cf. Osc. *ligis* 'in the laws', **luisarifs** 'by things relating to pleasure'(?) by adding the vowel *-i-* to the front of the ending (Lat. *-ibus*). The form **luisarifs** is the only one in Oscan which preserves the original *b* (> *f*) of the ending. In Latin, representative forms are *leōnibus* 'to/from the lions' and *lapidibus* 'to/from the stones'. The older form of *-ibus* can be seen in OLat. TREBIBOS (= CLat. *tribibus* 'to/from the tribes'), and possibly also the form SENATORBVS (from the *SC de Bacch.*), with no thematic vowel at all.

Locative/instrumental. The PIE instrumental and the locative merged with the ablative. The locative marker **-su* disappeared without leaving a trace.

7.2.3.3.2. The *i*-stem nouns of the third declension

The Latin *i*-stem nouns continue the athematic **i*-stems of PIE. These nouns are grouped morphologically with the athematic stems in the Latin third declension. The *i*-stem nouns are typically masculine or feminine in Latin, though there are many neuters as well (table 7.5).

Singular

Nominative/vocative (non-neuters). The PIE ending **-is* (< **-i-s*) develops into the expected Latin nominative masculine and feminine singular forms exemplified by *cīvi-s* 'citizen', *tussi-s* 'cough', *ovi-s* 'sheep', and so on. The identical vocative in *-is* is a Latin innovation, displacing the inherited ending **-ei*. There is a process of syncopation which affects certain stems such as *arti-* 'art', *monti-* 'mountain', *morti-* 'death', resulting in the nominative/vocative forms *ars*, *mōns*, *mors*, etc. (viz. **montis* > **monts* > *mōns*). In still a few other stems such as *imber* 'rainstorm' and the masculine adjective *ācer* 'sharp', the syncopated form develops a vowel (viz.

Table 7.5. The Latin *i*-stem nouns of the third declension

	'cough' (fem.)	'fire' (masc.)	'animal' (neut.)
Sg.			
nom.	tussis	ignis	animal
voc.	tussis	ignis	animal
acc.	tussim, tussem	ignem	animal
gen.	tussis	ignis	animālis
dat.	tussī	ignī	animālī
abl.	tussī	ignī, igne	animālī
Pl.			
nom.	tussēs	ignēs	animālia
voc.	tussēs	ignēs	animālia
acc.	tussīs, tussēs	ignīs, ignēs	animālia
gen.	tussium	ignium	animālium
dat.	tussibus	ignibus	animālibus
abl.	tussibus	ignibus	animālibus

**imbris* > **imbrs* > **imbr* > *imber*, or perhaps **imbris* > **imbers* > **imberr* > **imbēr* > *imber*) in much the same way that the *o*-stem nouns like *ager* 'field' develop from **agros*. There are some *i*-stem nouns with a nominative/vocative ending *-ēs* (e.g. *caedēs* 'slaughter', *vulpēs* 'fox'). These are most likely not original **i*-stems, however; their ending may reflect PIE **-ēs* (also *vātēs*, *vātis* 'prophet').

Nominative/vocative/accusative (neuters). The late PIE neuters were characterized by a bare stem **-i* (> Lat. *i*), without overt ending. As everywhere in Latin declension, there was no distinction in the neuters among the nominative, vocative, and accusative cases. The final **-i* yielded neuters in Proto-Latin such as **mari* 'sea' and **sēdili* 'seat', but the **-i* changed, as regularly, to a final *-e*, viz. *mare*, *sedīle*. Additionally, neuters such as *animal* 'animal' and *exemplar* 'example' derive from **animāli* and **exemplāri*, with loss of final *-i* (polysyllabic neuter nouns regularly lose their final vowel) and shortening of *ā* before final *-r* and *-l* (cf. the genitives *animālis*, *exemplāris*). In some of these forms there was a later analogical reintroduction of final *-e*, resulting in *animāle*, *exemplāre*, etc.

Accusative (non-neuters). The old form of the accusative singular of the masculines and feminines is *-im* (< **-i-m*), which is preserved: in adverbial forms such as *statim* 'firmly' and *partim* 'partly'; in a few words in which the stem ended in *ī* (e.g. *vim* 'force'), where the stem-final *ī* is shortened as regularly before *m*; and in a few other nouns such as *tussim* 'cough', and *sitim* 'thirst'. Otherwise, the older ending *-im* is regularly replaced by *-em* from the consonantal stems. There are a few words in which the two endings alternate freely, e.g. *clāvis* 'key', *cutis* 'skin', and *turris* 'tower'.

Genitive. The PIE genitive singular ending is **-eis* (< **-ei-s*), with an *o*-grade variant **-ois* (< **-oi-s*, evidenced by the Gothic genitive *-ais*). The ending **-eis*, which is preserved in Oscan genitives such as **kúmbenniefs** 'of coming together', normally develops into *-īs* in Latin, but there appears to have been an analogical influence from the genitive singular of consonantal stems such as *duc-is* (< **duc-es*) 'of the leader' which caused a generalization of the ending *-is*.

Dative. The early PIE dative singular ending is **eiei* (< **ei-ei*), which develops to **-ei*, and then by regular phonetic rule to the dative singular ending *-ī* of *cīvī* 'to the citizen', *ignī* 'to the fire', etc. For the earlier forms, cf. Skt. *agnáye* 'to the fire', *gátaye* 'to the going' (< **-ei-ei*), Gk. πόλει 'to the city' < *πόλ-ε-i̯-ι.

Ablative. The original PIE ablative singular was the same as the genitive (**-eis*). However, the Italic languages innovated significantly in this case, producing a Proto-Italic ablative singular **-īd*, formed on analogy to the *o*-stem ablative *-ōd* (cf. OLat. PREIVATOD 'private') and the *a*-stem ablative *-ād* (cf. SENTENTIAD 'by the opinion'). The ablative in *-īd*, which is evident in Osc. **slaagid** 'to the end' and OLat. LOVCARID (= *lūcārī*) 'with a forest tax', passed eventually to *-ī*, though this form was preserved primarily in nouns such as *tussis* 'cough', *puppis* 'stern of a ship', and *sitis* 'thirst', which also have an accusative in *-im*. Generally, the ablative ending *-ī* is replaced by *-e*, on analogy to the consonantal stems like *pede* ' by the foot', *arce* 'by the citadel', and so forth, which also have accusative singulars in *-em*. Many nouns vary between ablative *-ī* and *-e* throughout the historical period: cf. *ignī/igne* 'by fire', *classī/classe* 'with the fleet', *cīvī/cīve* 'by the citizen'. There is some morphologization of this alternation in the present participle, where the *-e* is prevalent in the verbal function and the *-ī* is prevalent in the adjectival one.

Locative/instrumental. Neither of these cases has survived in Latin in the *i*-stems; however, the locative (from PIE **-ēi*) is evident in Umbr. *ocre(-per)* 'for the mount'.

Plural

Nominative/vocative (non-neuters). PIE **-eies* (< **-ei-es*), seen in Gk. τρεῖς 'three', Skt. (unchanged form) *tráyas*, develops regularly into *-ēs*, by loss of the **i* and contraction of the vowels, resulting in standard plurals like *partēs* 'parts', *nāvēs* 'ships', *ovēs* 'eggs', etc. There is an occasional form *-īs* which is no doubt based on the accusative plural form *-īs*.

Nominative/vocative/accusative (neuters). Latin innovates in the neuter nouns of the *i*-stem class by adding *-a* (< *ā* < **-eh₂*) to the stem vowel: cf. *maria* 'seas', *calcāria* 'spurs', *animālia* 'animals'. This *-a* is the characteristic plural marker of the *o*-stem plural neuters such as *templa* 'temples', *aeva* 'ages', etc., added analogically to the *-i*.

Accusative (non-neuters). PIE **-ins* (< **-i-ns*) develops into *-īs*, which is recorded

as *-eis* in some early inscriptions (cf. PONTEIS OMNEIS 'all the bridges' from 132 B.C.E.). The ending *-īs*, which is the regular classical form, tended to be replaced by *-ēs* from the consonantal stems in Imperial Latin (the first example is from 107 B.C.E.), resulting in a regular variation between the two: cf. *ignīs/ignēs* 'fires', *hostīs/hostēs* 'enemies', etc. The consonantal *-ēs* eventually became the productive ending, while *-īs* remained common in poetry.

Genitive. PIE **-iŏm* (< **-i-ŏm*) proceeds directly into the Latin *i*-stem nouns as *-ium*, seen in forms such as *cīvium* 'of the citizens', *partium* 'of the parts', *marium* 'of the seas', etc. There is frequent interference from the ending *-um* of the consonantal stems, with forms such as *canum* (*canis*) 'of the dogs' and *mēnsum* (*mēnsis*) 'of the months', though these may have started out as consonantal stems in any case, making their genitive plurals archaic rather than analogical: cf. Gk. κυν-ῶν 'of the dogs', μην-ῶν 'of the months'. As with other stem classes, it is possible that the reduced grade **-om* reflects the PIE situation.

Dative/ablative/instrumental. PIE **-imus* (< **-i-mus*) is not preserved in Latin. The alternate ending **-ib^{h}os* develops into OLat. *-ibus*, paralleled by the isolated Oscan form *-ifs* in **luisarifs** (= Lat. *lūsōriīs*) 'relating to pleasure', with syncopation of the *i*. All other Oscan–Umbrian examples show *-fs*, with regular assimilation to *-ss* or *-s*: cf. Osc. **sakriss** 'to the enemies', Umbr. **avis** '(by) the birds'. The Lat. *-ibus* is seen in *hostibus* 'to/by the enemies', *ignibus* 'to/by the fires', etc.

Locative. The PIE locative in **-isu* (< **-i-su*) merged functionally and formally with the ablative. Locative **-isu* left no trace in Latin.

7.2.3.4. The *u*-stem nouns of the fourth declension

The Latin *u*-stem nouns of the fourth declension continue the PIE athematic **u*-class of nominal stems. As noted above, the PIE **i*- and **u*-stems were structurally parallel in that they made use of the same endings, but with different phonological results for each stem. Just as the PIE **i*-stems vocalized to become the Latin *i*-stems, so too did the PIE **u*-stems vocalize to become the Latin *u*-stems. And while the Roman grammarians grouped the *i*-stems with the consonantal stems to form the "third declension", the *u*-stems were considered to constitute a different group altogether, namely the "fourth declension" (table 7.6). This is probably because of the general non-productivity of the *u*-stems in Latin, and also because of the degree of fusion which took place in the *u*-stems between the stem and the ending, making them noticeably dissimilar from the *i*-stems of the third declension. Separating the historical **i*- and **u*-stems thus recognizes their synchronic status rather than their diachronic grouping. It should be noted that there is another class of Latin nouns with similar morphology, namely those with the stem in *ū*- (< **uH*); this group shows a good deal of inflectional crossover with the *u*-stems. The *uH*-stems rarely

Table 7.6. The Latin *u*-stem nouns of the fourth declension

	'fruit' (masc.)	'hand' (fem.)	'horn' (neut.)
Sg.			
nom.	fructus	manus	cornū
voc.	fructus	manus	cornū
acc.	fructum	manum	cornū
gen.	fructūs	manūs	cornū(s)
dat.	fructuī	manuī	cornū (-uī)
abl.	fructū	manū	cornū
Pl.			
nom.	fructūs	manūs	cornua
voc.	fructūs	manūs	cornua
acc.	fructūs	manūs	cornua
gen.	fructuum	manuum	cornuum
dat.	fructibus	manibus	cornibus
abl.	fructibus	manibus	cornibus

occur in Latin (cf. *grūs* 'crane', *sūs* 'pig'), but are amply attested in Greek (cf. σῦς 'sow', ὀφρῦς 'eyebrow').

Most nouns of the fourth declension are masculine. There are a few feminines (e.g. *acus* 'needle', *domus* 'house', *manus* 'hand') and a few neuters (e.g. *cornū* 'horn', *genū* 'knee', and *verū* 'spit'). The neuters display a somewhat different inflectional pattern from the others.

7.2.3.4.1. Singular

Nominative (non-neuters)

The PIE nominative ending was **-us* (< **-u-s*), normally with reduced grade of the pre-inflectional vowel. This ending is well represented in Greek *u*-stems (cf. Gk. πῆχυς 'forearm', ἡδύς 'sweet') and in Sanskrit (e.g. (unchanged form) *śátrus* 'enemy', *dhenús* 'cow') as well as in Latin. Examples are *fructus* 'fruit', *senātus* 'senate', and *manus* 'hand'.

Nominative/vocative/accusative (neuters)

The nominative, vocative, and accusative neuters share a common form in Latin, namely the bare stem ending in *-u* without inflection. Comparative evidence suggests that the final *u* of Latin should be short (cf. Gk. γόνυ 'knee', ἡδύ 'sweet', Skt. *mádhu* 'honey'), though prosodic evidence and testimony from the grammarians show that the final vowel of the few neuters was *ū* (*cornū*, *genū*), perhaps old duals or collectives (cf. Skt. nom. dual *śátrū* 'two enemies').

Vocative (non-neuters)

The PIE vocative was signaled by **-eu*, with no overt morphological marker, as can

be seen in Gk. πρέσβυ 'O old man', Skt. *śátro* 'O enemy' (*o* < **au* < **eu*). In Italic generally, and Latin in particular, there was never a separate ending for the vocative of this group, the vocative consistently aligning itself with the nominative, e.g. *senātus* 'O senate', *tribus* 'O tribe'.

Accusative (non-neuters)

From the PIE accusative marker **-um* (< **-u-m*), seen in Gk. (masc.) ἡδύν 'sweet', Skt. *śátrum* 'enemy', Umbr. *trifo*, **trifu** (< **trifum*) 'tribe' derives Lat. *-um* (*tribum* 'tribe', *manum* 'hand').

Genitive

The PIE genitive singular ending **-ous* (< **-ou-s*) is attested in Skt. (unchanged form) *śátros* 'of the enemy', Osc. *castrous* 'of a piece of land', Umbr. *trifor* 'of the tribe', and Goth. *sunáus* 'of the son'. It develops regularly into *-ūs* in Latin: cf. Lat. *fructūs* 'of the fruit', *tribūs* 'of the tribe', *manūs* 'of the hand', *senātūs* 'of the senate'. It may also be seen in *anuis* 'of the old woman' and *socruis* 'of the mother-in-law' (both attested in Terence), though these may be from either **-ou-os/-es* or from **-u-os/-es*. It is not uncommon for nouns of the fourth declension to be influenced by the second declension: cf. especially *domī* 'at home', *domō* 'from home', as well as *senātī* 'of the senate', *ornātī* 'of the dress'. OLat. SENATVOS (*SC de Bacch.*) and parallel forms like *fructuis* and *senātuis* seem to reflect a competing form **-uos*, **-ues*.

Dative

The PIE ending **-euei* (< **eu-ei*), seen in Skt. *śátrave* 'to the enemy', developed into Latin *-uī* by a series of phonetic transformations, viz. **euei* > **-ouei*, preserved in OLat. SENATVEI 'to the senate', and finally to *-uī*. The ending *-uī* is the regular form for the fourth declension dative. An alternate dative ending *-ū*, which is normal for neuters like *cornū* 'to the horn', *genū* 'to the knee', often appears in masculine and feminine forms as well: cf. *ūsū* 'to the use' (Plautus), *vestītū* 'to the attire' (Terence), *adspectū* 'to the sight' (Vergil). It appears to be the result of the strong mutual influence between the ablative and the dative, apparent in all plurals, in *o*-stems, and in some forms of consonantal stems. It is also common in poetry, where metrical requirements often demand a reduction of the diphthong to *-ū*. Alternatively, it may be an old endingless locative such as **-ŏu*.

Ablative

The PIE ablative singular shares a common ending with the genitive, namely **-ous* (< **-ou-s*), seen in Skt. abl./gen. (unchanged form) *śátros* 'of/by the enemy'. This ending is nowhere in evidence in the ablative in Italic generally. Latin has developed an innovative ablative in *-ūd*, on the analogy of the *a*-stems (cf. OLat. SENTENTIAD 'by the opinion', EAD 'by her') and the *o*-stems (cf. PREIVATOD 'private', EOD 'by him', MERITOD 'deservedly'). Examples of *u*-stem ablatives are OLat. MAGISTRATVD 'by the office of magistrate', CASTVD 'by abstinence'

(cf. Osc. *castrid* '(with) a piece of land'). The ending *-ūd* gave way to *-ū* by regular loss of final *-d*, seen in familiar forms such as *fructū* 'by fruit', *manū* 'by hand', and so on.

Locative and instrumental
The PIE locative (**-ēu*) and instrumental (**-uh$_1$*, **-ub^{h}i*) merged functionally with the ablative. Both **-ēu* - (> *eu*) and **-uh$_1$* > Lat. *-ū*. This merger is facilitated by the prevocalic shortening of **-ēu* to **-eu*.

7.2.3.4.2. Plural

Nominative/vocative (non-neuters)
The PIE ending **-eues* (< **-eu-es*), seen in Skt. (unchanged form) *śátravas* 'enemies', Gk. πήχεις 'forearms' < **-εϝες*, is apparently not continued in Latin. The normal Latin nominative plural ending *-ūs* (*manūs* 'hands', *fructūs* 'fruits', etc.) can only be derived from **-eues* by invoking several questionable phonetic steps (its normal development would be to **-uis*). The ending *-ūs* is most convincingly explained as the result of an analogical influence of the accusative plural, which also ends in *-ūs*. This follows the pattern of the consonantal stems and the *i*-stems, where the two cases are identical (cf. nom./acc. *ducēs* 'leaders', *cīvēs* 'citizens'). As elsewhere, the vocative replicates the nominative.

Nominative/vocative/accusative (neuters)
Latin innovates in the neuter nouns of the *u*-stem class by adding *-a* to the inherited ending **-uh$_2$* to form **-ūa*, which develops to *-ua* by regular prevocalic shortening (the long vowel is preserved in Umbr. *castruo*, **kastruvu** 'pieces of land'). Latin plurals such as *genua* 'knees', *cornua* 'horns', *verua* 'spits' display this ending.

Accusative (non-neuters)
The PIE ending **-uns* (< **-u-ns*), attested in Goth. *sununs*, Gk. (Cret.) υἱύνς 'sons', Umbr. *-f* (cf. **manf** 'hands' < **manuf* < **manuns*) developed regularly into Latin as *-ūs*, as in *fructūs* 'fruits', *manūs* 'hands', and *senātūs* 'senates'.

Genitive
From PIE **-euŏm* (< **-eu-ŏm*) is derived Lat. *-uom* (> *-uum*), attested in examples such as *magistrātuum* 'of the magistrates'. There is an alternate form *-um* (cf. *passum* 'of the steps', *manum* 'of the hands', *nummum* 'of the coins') which is apparently imported from the consonantal stems (e.g. *prīncipum* 'of the chiefs'). This ending may not be the result of a contraction of *-uum*, since it occurs much earlier.

Dative/ablative
Latin does not continue the PIE dative/ablative in **-umos* (< **-u-mos*). Rather, it builds on the alternate form **-ub^{h}os*, which develops into Latin *-ubus*. This form is attested in *artubus* 'to/from the limbs', *arcubus* 'to/from the rainbows', *partubus* 'to/from the births', and is prescribed by the grammarians for *tribubus* 'to/from the

Table 7.7. The Latin fifth declension

	'day' (masc.)	'thing' (fem.)
Sg.		
nom.	diēs	rēs
voc.	diēs	rēs
acc.	diem	rem
gen.	diēī	reī
dat.	diēī	reī
abl.	diē	rē
Pl.		
nom.	diēs	rēs
voc.	diēs	rēs
acc.	diēs	rēs
gen.	diērum	rērum
dat.	diēbus	rēbus
abl.	diēbus	rēbus

tribes'. However, the general form for the fourth declension dative/ablative plural is *-ibus* (cf. *hostibus* 'to/from the enemies', *ignibus* 'to/from the fires'), borrowed from the *i*-stems and supported by the tendency to avoid the *u* ... *u* sequence present in *-ubus*. It has also been suggested that *artubus*, *arcubus*, and *partubus* have maintained the *-ubus* ending to avoid homophony with the *i*-stem forms *artibus* 'to/from the arts', *arcibus* 'to/from the citadels', and *partibus* 'to/from the parts'.

Locative and instrumental

The PIE locative and instrumental merged functionally with the ablative, leaving no morphological trace in Latin.

7.2.3.5. The *ē*-stem nouns of the fifth declension

The Latin *ē*-stem nouns, which are grouped into the fifth declension, do not continue an Indo-European class. This relatively small and somewhat artificial group is an Italic (mostly Latin) construction which has been built by a series of analogical transformations from inflectional patterns of other noun groups, especially the first declension *a*-stem nouns (< **-eh₂*). There are actually only two words for which completely attested paradigms exist, namely *diēs* 'day' and *rēs* 'thing' (table 7.7). Because the fifth declension represents a semantic class of primarily abstract nouns which are not normally quantified, most of the other nouns are not declined in the plural, except for *aciēs* 'edge', *spēs* 'hope', and a few others which are used in the nominative and accusative plural. Nouns of the *ē*-class are regularly feminine, except for the masculine *diēs* 'day' and *merīdiēs* 'midday', though *diēs* is some-

times feminine in the singular. See especially Pedersen (1926).

The two words *diēs* 'day' and *rēs* 'thing' are by far the most frequent of this class and may be diphthongal stems in origin: cf. Skt. *dyáuḥ*, Gk. Ζεύς, and Skt. *rā́ḥ*, gen. *rā́yaḥ*. It has been suggested that the Latin stems *diē-* and *rē-* were formed out of the accusative singular (**diĕu-m* and **rĕi-m*) in which the semivowel was deleted before *-m*, leaving behind the base *diē-* and *rē-*, to which the endings were attached. This derivation is not without difficulties, however. The remaining members of the fifth declension *ē*-stems fall into several historical categories.

1. Nouns built on the suffix *-iē* (< **-ieh*$_1$). The abstract nominalizing suffix *-iēs* is built on the suffix *-iē* (< **-ieh*$_1$) with the addition of final *-s*. The resulting suffix *-iēs*, seen in *aciēs* 'edge', *seriēs* 'row', and *rabiēs* 'rage', often exists as an alternative by-form to nominals in *-ia* (< **-iā* < **-ieh*$_2$), as in *māteriēs/māteria* 'matter' and *dūritiēs/dūritia* 'hardness'. Mester (1994: 43–44) has explained the coexistence of the two apparently synonymous suffixes *-ia* and *-iēs* as the result of cretic shortening. (A cretic is a metrical pattern comprising the sequence long syllable followed by short syllable followed by long syllable.) Latin tends to avoid the "trapping" of a light penult between a heavy antepenult and a heavy final (i.e. ō ŏ ō), which would result in forms like **grātiēs* 'thanks', **īnsāniēs* 'madness', and **audāciēs* 'boldness', thereby avoiding the cretic. This prompts the morphological selection of the *-ia* alternative, with its optimum syllabic structure of ō ŏ ŏ giving *grātia*, *īnsānia*, and *audācia*. Nouns with alternating *-ia* and *-iēs* forms like *māteriēs/māteria* 'matter', *dūritiēs/dūritia* 'hardness', and *luxuriēs/luxuria* conform to either structure, and the noun *intemperiēs* 'inclemency' has an alternate form *intemperiae*. The same principle seems to apply to extended suffixes, as seen in *scābritiēs/scābritia* 'roughness'. This analysis provides a prosodically governed explanation for an apparently random morphological selection. Given the sporadic nature of this process, it is of no necessary concern that by-forms do not exist for candidates such as *caesariēs* 'hair' and *pauperiēs* 'poverty'. For an early discussion see Thurneysen 1921: 200–202, then Kuryłowicz 1949.

2. Nouns such as *fidēs* 'faith' and *spēs* 'hope' are most likely derived from their corresponding verbs *fīdere* 'to trust' and *spērāre* 'to hope', though it is possible that they are original consonantal stems (nom. pl. *sper-ēs* is attested in Ennius) from which the corresponding verbs are derived.[3]

7.2.3.5.1. Singular

Nominative/vocative

To create the nominative, on which the vocative is patterned, the typical animate ending *-s* of the Latin athematic nouns is added directly to the stem *ē-*, thus *diē-s* 'day', *spē-s* 'hope', *māteriē-s* 'matter', etc.

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3 *Sēdēs* (gen. *sēdis*) 'seat', though not fifth declension, is apparently derived this way, from *sedēre* 'to sit'.

Accusative
The familiar ending *-m* is added to the stem *ē-*, which is shortened, as regularly, to *e*: thus *die-m* 'day', *spe-m* 'hope', *māterie-m* 'matter', etc.

Genitive
The genitive has many different inflectional realizations, illustrating the instability of this declensional class. The typical classical ending is *-ēī*, the first member of which is retained as long after a vowel (cf. *diēī* 'to the day') and shortened after a consonant (*fideī* 'to faith'). This ending is clearly modeled on the *a*-stem genitive ending *-āī* (*silvāī frōndōsāī* 'of the leafy forest' and *Albāī lōngāī* 'of Alba Longa', attested in Ennius), an ending which itself is built on the *-ī* genitive marker of the masculine *o*-stems (*virī* 'of the man'). The long diphthong *ēī* is sometimes reduced by prevocalic shortening to *eī*, the standard form; alternatively, sometimes the second member is also shortened (*dieī*) or even lost in the second member (cf. inscriptional DIE (*diē*) 'of the day', a pattern found in Plautus and Cicero). The *-ēī* ending is unexpected in that it contravenes the rule of prevocalic shortening. It seems that the morphological function being performed by the long vowel overrides the application of the prosodic rule. There is also a genitive form in *-ēs*, based on the archaic *ā*-stem genitive in *-ās* (e.g. *paterfamiliās* 'father of the family'). Examples of this ending are *diēs* 'of the day' and *rabiēs* 'of the madness'. The development of this alternate marker of the genitive seems to be a morphological repair for the unstable inherited vocalic endings, which were affected and ultimately confused by competing prosodic processes.

Dative
The dative is expressed by *-ēi*, apparently built on analogy to the dative of the *a*-stem dative ending *-āi* seen in Osc. **deívaí** 'to the goddess', which shortens to *-ae* in Latin (*dīvae* 'to the goddess', *fēminae* 'to the woman', etc.). In similar fashion, *-ēi* shortens to *-ei*, which then evolves to *ē*, a dative ending attested in Plautus (*diē* 'to the day', *rē* 'to the thing'), although a case might be made for an original ending *-ē*. The endings *-ēī* and *-eī* (cf. *rēī/reī* 'to the thing') may represent an attempt to avoid confusion with the genitive. Despite the virtual identity of the genitive and dative endings of the fifth declension, it is noteworthy that the analogically created genitive form in *-ēs* never spread to the dative.

Ablative
The normal Latin form for the ablative is *-ē* (*diē* 'on the day', *fidē* 'by faith'), which is probably derived from **-ēd* on the pattern of the *a*-stem ablatives in *-ād* such as OLat. SENTENTIAD 'by the opinion' (itself based on the *o*-stem pattern illustrated by PREIVATOD 'private'). Though not attested in Latin, the final *-d* is supported by the Faliscan form **foied** 'today' (= Lat. *hodiē*).

Locative/instrumental
There are no traces of either of these cases for this stem class.

7.2.3.5.2. Plural

Nominative/vocative/accusative
Though the nominative and accusative share an identical ending *-ēs* in Latin, the two result from distinct phonetic chains. The nominative is best explained as having begun with the noun *rēs* 'things', which began as **rēi-es* and contracted, as regularly, to *rēs*. The accusative had its origins in a form **rēi-ns*, which also developed regularly into *rēs* (cf. *a*-stem acc. pl. *-ās* < **-ans* < **-āns* < **-eh₂ns*, as in *togās* 'togas'). There may also have been some analogical influence from the first declension. The nominative/accusative inflection of *rēs* is thought to have served as the model for the entire declension, starting with *diēs* 'day'. The vocative is, as always, modeled on the nominative.

Genitive
There are only two fifth declension nouns in Latin which are attested in the genitive plural, namely *diērum* 'of the days' and *rērum* 'of the things'. The genitive ending *-ērum* is clearly structured on analogy to the *a*-stem ending *-ārum* (*rosārum* 'of the roses', etc.).

Dative/ablative
The ending *-ēbus* (*rēbus* 'to/by the things', *diēbus* 'to/on the days') is based on the athematic stem type *-ibus* (*ducibus* 'to the leaders', etc.).

Locative/instrumental
These cases have left no traces in the Latin fifth declension.

7.3. Pronouns

Like its PIE ancestor, Latin distinguishes two basic pronominal types, viz. personal pronouns and non-personal pronouns. Personal pronouns have a three-way distinction of first, second, and third person. Included in the personal pronoun category are the possessive pronouns and the reflexive pronouns.

The non-personal pronouns include a wide and heterogeneous group of pronominal types. Included are demonstrative (deictic) pronouns, which serve to point out some entity; interrogative pronouns, which serve to introduce questions; indefinite pronouns, which have unspecified referents; and relative pronouns, which reference some previously mentioned entity, usually within the same sentence.

From a morphological perspective, there are many problems in the reconstruction of unique etyma for the pronouns, and the forms cited below certainly do not exhaust the possibilities. Some of the morphological difficulties are discussed in Sihler (1995: 369ff.).

Table 7.8. The PIE personal pronouns[a]

	Singular		Plural	
	First person	Second person	First person	Second person
Nom.	$h_1$egoH/ $h_1$egHom	tuH	uei(s)	iuH(s)
Acc.	$h_1$me	tue (te)	nsme (nŏs)	usme (uŏs)
Gen.	$h_1$mene ($h_1$mei)	teue (tei)	nsom (nŏs)	usom (uŏs)
Dat.	$h_1$meg^{h}io ($h_1$mei, $h_1$moi)	teb^{h}io (tei, toi)	nsmei (nŏs)	usmei (uŏs)
Abl.	$h_1$met	tuet	nsmet	usmet

a Forms in parentheses are enclitic variants.

Table 7.9. The Latin personal pronouns

	'I'	'you (sg.)'	'we'	'you (pl.)'	'oneself'
Nom.	ego	tū	nōs	vōs	–
Voc.	–	tū	–	vōs	–
Acc.	mē(d)	tē(d)	nōs	vōs	sē(d)
Gen.	meī	tuī	nostrum, nostrī	vestrum, vestrī	suī
Dat.	mihi	tibi	nōbīs	vōbīs	sibi
Abl.	mē(d)	tē(d)	nōbīs	vōbīs	sē(d)

7.3.1. The personal pronouns

PIE had special forms for the first and second person personal pronouns, but not the third person (table 7.8). It also had a special form for the reflexive pronoun, which is a relatively late development. All these pronouns were indifferent to gender, and the reflexive was indifferent to person and number as well. Latin continues the PIE personal pronouns morphologically, though it innovates in the reflexive by restricting the inherited form **se-* (Lat. *sē*) to third person usage, both singular and plural (table 7.9). For the third person pronouns, Latin makes use of the demonstrative pronouns *is*, *ea*, *id*, which derive from the PIE anaphoric pronoun **$h_1$is*, **$h_1$ih$_2$*, **$h_1$id*.

7.3.2. The development of the PIE personal pronouns into Latin

7.3.2.1. *Ego*

7.3.2.1.1. Nominative

The PIE first person singular pronoun **h₁egoH/h₁egHom* 'I' is realized in Latin as *ego* (shortened iambically from *egō*). Cognate forms are Skt. *ahám*, Hitt. *uk*, Gk. ἐγώ, Goth. *ik*, OCS *azŭ*, and Lith. *aš*.

7.3.2.1.2. Accusative

The PIE accusative form **h₁me* is strengthened to *mēd* in Latin through the addition of *-d*, which was originally a demonstrative particle from PIE **-(e/o)t* (**d* is also possible). Though it is attested in various inscriptions, including Duenos and Garigliano, the *-d* had disappeared by the time of Classical Latin, giving *mē*. The long vowel *ē* in Lat. *mēd* is guaranteed because of its metrical patterning in early verse texts. Final *-d* is maintained after short vowels (cf. *id* 'it'), and exceptionally after **ē* in *sed* 'but' < **sēd*.

7.3.2.1.3. Genitive

The PIE genitive form **h₁mene* (**h₁mei*) is often realized throughout the IE family in combination with other morphemes, indicating that this case was somewhat unstable in PIE. The Latin form *meī* is most likely from the genitive of the possessive pronoun *meus* 'my/mine'. An alternate form *mīs*, found in Ennius (*Ann.* 2.17) is probably based on the enclitic form **h₁mei* plus the genitive ending *-s* from the nominal declensions.

7.3.2.1.4. Dative

The Latin *mihi* derives from PIE **h₁meg^{h}io*, with an innovative Latin ending *-ei* (i.e. **h₁meg^{h}ei*). Classical Latin shows *mihi*, with iambic shortening from an earlier *mihī*, and an alternate contracted form *mī* from enclitic **h₁mei*.

7.3.2.1.5. Ablative

PIE **h₁met* develops directly into OLat. *mēd*, with the same final *-d* found in nominal declensions (cf. OLat. DOLVD 'by deceit', PREIVATOD 'private', EOD 'him', etc.). Final *-d* is lost by the time of Classical Latin, giving *mē*, following the same phonetic development as acc. *mē*. The long vowel of *mēd* is probably analogical to the long vowels which generally characterize the ablative singular.

7.3.2.2. *Tū*

7.3.2.2.1. Nominative

The PIE second singular personal pronoun **tuH* 'you (sg.)' is realized in Latin as *tū* in both the nominative and vocative cases. Cognate forms are Skt. *tvám*, Gk. σύ, Hitt. *zik*, Goth. *þu*, OCS *ty*, and Lith. *tù*, some with shortened vowel.

7.3.2.2.2. Accusative

The PIE accusative form **tue* is strengthened in Latin through the addition of the demonstrative particle *-d* (< **-(e/o)t*), resulting in *tēd*, just as in the accusative *mēd* 'me'. The loss of the **u* in this form (preserved in Skt. *tvā́m*, *tvā*) is not easily explained. *Tēd* is attested in Plautus (*Asin.* 299), though as with *mēd*, the *-d* had disappeared by the time of Classical Latin, with preservation of the long vowel, giving *tē*.

7.3.2.2.3. Genitive

The PIE genitive forms **teue* (**tei*) do not descend directly into Latin. Rather, as with *meī* and *mīs* 'of me', Latin innovates by utilizing the genitive singular of the possessive pronoun *tuus* 'your' to give *tuī* and strengthens the enclitic variant **tei* through the addition of the nominal case-marker *-s* to form *tīs*, attested in Plautus (*Miles* 1033).

7.3.2.2.4. Dative

The PIE dative forms are **teb^{h}io* and the enclitic variants **tei*, **toi*. The Latin form *tibi* (iambically shortened from *tibī*) is based on the form **teb^{h}ei* (> *tibī* > *tibi*), which contains the innovative Latin suffix *-ei* seen also in first person *mihī*. The root vowel **e* weakens predictably to *i*.

7.3.2.2.5. Ablative

PIE **tuet* develops into Latin *tēd* (attested in Plaut. *Cas.* 90), though as with the accusative the loss of the **u* is difficult to explain (the **u* is guaranteed by Skt. *tvát*). As with *mēd* 'by me' and all other ablatives ending in *-d*, *tēd* loses the final *-d*, yielding the classical ablative *tē*.

7.3.2.3. *Nōs*

7.3.2.3.1. Nominative/vocative/accusative

The PIE first singular nominative personal pronoun **uei(s)* 'we' yields Skt. *vayám*, Gk. ἡμεῖς, Hitt. *wēš*, Goth. *weis*, Lith. *mẽs*, Toch. A *was*, B *wes*. The Latin form

nōs, which serves as the common form of the nominative, vocative, and accusative cases, is originally an unaccented enclitic variant of the PIE accusative **nsme* (**nṓs*).

7.3.2.3.2. Genitive

The PIE forms **nsom* (**nṓs*) do not descend directly into Latin. The Lat. *nostrum* is in origin a genitive plural of the possessive pronoun *noster* 'our', a pattern also seen in Tocharian (cf. B *wesi*). The alternate genitive form of Lat. *nōs*, *nostrī*, is used as the form of the objective genitive; it is based on the morphological pattern of *meī*, *tuī*, etc.

7.3.2.3.3. Dative/ablative

The PIE dative **nsmei* (**nṓs*) and the ablative **nsmet* find no direct realization in Latin. The Latin dative/ablative form *nōbīs* is a blend of the root *nō-*, reanalyzed from *nōs*, and a **b*^{h}- ending such as that found in *tibi* 'to you', *senibus* 'to the old men', etc., viz. **nōs-b*^{h}*ei-s* > *nōbīs*.

7.3.2.4. *Vōs*

7.3.2.4.1. Nominative/vocative/accusative

The PIE nominative second person plural pronoun **iuH(s)* 'you (pl.)' gives Skt. *yūyám*, Gk. ὑμεῖς, Hitt. *šumēš*, Goth. *jūs*, OCS *vy*, Lith. *jūs*, Toch. A *yas*, B *yes*. PIE **iuH(s)* does not yield the expected **iūs* in Latin, which would roughly parallel English *ye* (without the final *-s*). Rather, just as with *nōs* 'we', the Latin nominative/vocative/accusative forms *vōs* are based on the enclitic form of the PIE accusative **usme* (**uṓs*).

7.3.2.4.2. Genitive

The PIE genitive form **usom* (**uṓs*) follows the same pattern as **nsom* (**nṓs*) 'we'. *Vestrum* (OLat. *vostrum*) is originally a genitive plural of the possessive pronoun *vester* 'your', a pattern also seen in Tocharian (B *yesi*). The alternate form of *vestrum*, *vestrī*, is used when in an objective genitive construction. Just as with *nostrī* 'of you (pl.)', *vestrī* is modeled on the *meī*, *tuī* type of genitive based on the singular of the possessive pronoun.

7.3.2.4.3. Dative/ablative

The PIE dative **usmei* (*uṓs*) and the ablative **usmet* find no direct realization in Latin. Just as with the first person plural dative/ablative form *nōbīs*, the second person plural *vōbīs* is a blend of the root *vō-*, reanalyzed from *vōs*, and a **b*^{h}- ending

such as that found in *tibi* 'to you', *senibus* 'to the old men', etc.

7.3.2.5. Reflexives

The PIE reflexive **se-* was used for all persons and numbers and like other personal pronouns was indifferent to gender. Pronominal **se-* is probably a late development; its functions were originally carried by the middle voice, which obviated the need for such pronouns. The Latin reflexive pronoun *sē* is used for the third person, singular and plural. For the first and second persons, the reflexive is isomorphic with the oblique forms of the corresponding personal pronoun. Because a reflexive must have an expressed or implied antecedent in the sentence, its functions are restricted to oblique cases, and it therefore lacks a nominative form.

7.3.2.5.1. Accusative

PIE **se-* is augmented in Latin by the same particle *-d* that is found in acc. *mēd* 'me', *tēd* 'you', etc., giving *sēd* 'oneself' (attested as SED in the *SC de Bacch.*). As with *mēd* and *tēd*, the final *-d* was lost and the long vowel remained, giving the Latin accusative form *sē*.

7.3.2.5.2. Genitive

The PIE form **seue* (**sei*) does not descend directly into Latin. Rather, just as with the forms *meī* 'of me' and *tuī* 'of you', the genitive form *suī* 'of oneself' is based on the genitive of the possessive form *suus* 'one's own'.

7.3.2.5.3. Dative

The PIE dative form **seb^{h}io* (**sei*, **soi*) develops into Latin as *sibi*, shortened iambically from *sibī*. The pattern is the same as with *mihi* and *tibi*, namely weakening of the root vowel **e* to *i* and substitution of the innovative ending **-ei*, resulting in a protoform **seb^{h}ei* (> **sebei* > *sibī* > *sibi*).

7.3.2.5.4. Ablative

The Latin *sē* does not rest on any PIE form. Rather, it is constructed analogically to the first and second person forms *mē* and *tē*, and, like *mē* and *tē*, even has an epigraphically attested variant SED (*sēd*), with ablatival *-d* from the other pronouns and nominal declensions.

7.3.3. Possessive pronouns (adjectives)

The PIE possessive pronouns are adjectives which are based on some form of the

Table 7.10. The declension of *is, ea, id*

	Singular masc.	fem.	neut.	Plural masc.	fem.	neut.
nom.	is	ea	id	eī, iī, (ī)	eae	ea
acc.	eum	eam	id	eōs	eās	ea
gen.	eius	eius	eius	eōrum	eārum	eōrum
dat.	eī	eī	eī	eīs, iīs	eīs, iīs	eis, iīs
abl.	eō	eā	eō	eīs, iīs	eīs, iīs	eis, iīs

stem of the personal pronouns. They are typically formed through the addition of the thematic vowels seen in nominal and adjectival derivation, namely masc./neut. **-o-* and fem. **-eh$_2$-*, or with the suffix **-tero-/-tereh$_2$-*. The suffix **-tero-/-tereh$_2$-* marks contrast between pairs such as 'mine/ours', 'your/yours (sg.)' vs. 'your/yours (pl.)'; it is also found in the oppositional pair *dexter/sinister* 'right/left'. The Latin possessive pronouns (nom. masc. only) are: *meus* 'my, mine' (< **h$_1$mos*); *tuus* 'your, yours (sg.)') (< **tuos*); *suus* 'one's own' (< **suos*); *noster* 'our, ours' (< **nos-teros*), and *voster* (later *vester*) 'your, yours (pl.)' (< **uos-teros*).

7.3.4. Non-personal pronouns

7.3.4.1. Anaphoric and demonstrative pronouns

The most widely evident demonstrative pronouns in PIE are **so, *seh$_2$, *tod* 'that one', and **h$_1$is, *h$_1$ih$_2$, *h$_1$id*. These pronouns came to serve the function of third person pronouns in many of the IE languages, indicating a person or thing previously mentioned or already known from context. **so, *seh$_2$, *tod* is represented in Skt. (unchanged form) *sás, sā́, tát*, Goth. *sa, sō, þata*, OE *se, sēo, þæt*, and Gk. ὁ, ἡ, τό. This pronoun is not represented in any full Latin paradigm; it occurs in a few rare Early Latin forms such as acc. sg. masc. *sum* (in Ter. *Phorm.* 1028 and in various places in Ennius, e.g. *Ann.* 1.53), acc. sg. fem. *sam* (*Ann.* 7.2), *sapsa* (*Ann.* 16.22), acc. pl. masc and fem. *sōs, sās* (*Ann.* e.g. 1.16), and acc. sg. masc. *sum-pse* (Plaut. *Truc.* 160). **so* also appears in a few adverbial relics such as *sī* 'if' and *sīc* 'thus'. The stem form **to-* is also found in adverbial relics such as *tum* 'then' and *tam* 'so'. The pronoun **h$_1$is, *h$_1$ih$_2$, *h$_1$id*, on the other hand, came to function as the third person pronoun in Latin (*is, ea, id*, table 7.10) and as a general anaphoric pronoun used to refer to any previously mentioned or contextually understood referent. In Indo-Iranian, Slavic, and Greek, a different form, **ios, *ieh$_2$, *iod*, apparently also an original demonstrative, serves the relative function (cf. Skt. (unchanged form) *yás, yā́, yát*, OCS *je-*, Gk. ὅς, ἥ, ὅ).

PIE **h$_1$is, *h$_1$ih$_2$, *h$_1$id* comes into Latin in several variant forms, some based on oblique cases. One such form is the root **h$_1$i-*. Representations of **h$_1$i-* are clearly

seen in various forms in Sanskrit and Germanic, such as Skt. nom./acc. sg. neut. *id-ám*, acc. sg. masc. *im-ám*, fem. *im-ā́m*, and Goth. acc. sg. *in-a*, nom. pl. masc. *eis*, acc. pl. *ins*, and in an isolated Cypriot Greek accusative form ἰν, which parallels an Early Latin masculine accusative *im* (in the Law of the XII Tables). The nominative masculine form *is* is no doubt remodeled on the oblique themes in **i*, probably from the accusative (**$h_1$im*). In its development into Latin, this pronoun became blended with another pronominal form **$h_1$eio-*, perhaps an earlier bound element which was reanalyzed as an independent form. **$h_1$eio-* forms the basis for some of the oblique forms of *is*, *ea*, *id*, e.g. acc. sg. masc. *eum* (< **$h_1$eiom*), abl. sg. masc./neut. *eō* (< **$h_1$eiōt*), acc. masc. pl. *eōs* (< **$h_1$eions*), gen. pl. masc./neut. *eōrum* (< **$h_1$eiosom*), nom. pl. masc. *eī* (< **$h_1$eioi*), dat./abl. pl. masc./neut. *eīs* (< **$h_1$eiois*), nom. acc. pl. neut. and nom. fem. sg. *ea* (< **$h_1$eieh$_2$*), acc. sg. fem. *eam* (< *$h_1$eieh$_2$m*), abl. fem. sg. *eā* (< **$h_1$eieh$_2$t*), nom. pl. fem. *eae* (**$h_1$eih$_2$ei*), acc. sg. fem. *eās* (< **$h_1$eieh$_2$ns*), gen. pl. fem. *eārum* (< **$h_1$eieh$_2$som*), and dat./abl. pl. fem. *eīs* (< **$h_1$eih$_2$eis*). The pronominal root **ei-* (< **$h_1$ei-*), without the theme **-o-*, serves as the basis for certain other oblique endings of *is*, *ea*, *id*, such as the genitive *eius* (< **$h_1$eisios*, cf. *cuius* 'whose' < **k$^{\text{u}}$osios*), with secondary *-s*, and the masc./neut. dative *eī* (< **$h_1$eiei*).

7.3.4.2. *īdem*, *eadem*, *idem*

The pronoun *īdem*, *eadem*, *idem* 'same' is formed from the combination of the anaphoric pronoun *is*, *ea*, *id* and the deictic particle *-dem* (cf. Lat. *prī-dem* 'long ago', *qui-dem* 'indeed'). The Latin particle *-dem* is probably not of IE date. It seems to represent the combination of **-d-* and the particle **-em* (seen in Lat. *tamen* < **tam-em* 'nevertheless', Osc. **píd-um** 'anything'). The source of the *d*, however, is unclear. One possibility is that it is connected to the *-de* found in *unde* 'from which place', Gk. -δε, though the semantic connections are tenuous. Another possible solution is that the *d* of *-dem* results from the resegmentation of either the nom. or acc. sg. neut. *id-em* as *i-dem*; with a reanalysis of the combination as a particle *-dem*. Another approach is to locate the source of the **d* in the old ablative forms *eōd-em*, *eād-em*, resegmented as *eō-dem*, *eā-dem*. Though neither of these latter solutions is without problems, it seems clear that the Latin *-dem* is based on a reanalysis of some ending *-d* and an old particle *-em*.

7.3.4.3. *hic*, *haec*, *hoc*

The pronoun *hic*, *haec*, *hoc* 'this one' is based on a PIE stem **g$^{\text{h}}$o-*, **g$^{\text{h}}$eh$_2$-*, which does not appear as a fully developed pronominal in any other IE language. It does appear in Lat. *ho-diē* 'on this day', Falisc. **foied**; and a variant form **g$^{\text{h}}$i-*, from which *hic* is derived, appears as an affirmative particle in Skt. *hí* 'certainly' and Gk. ναί-χι 'yes'. Apart from *hic* and the gen. sg. *huius* (which is analogical to *cuius*,

eius, etc.), all other forms of *hic*, *haec*, *hoc* are based on *g^ho-, *g^heh_2-. This pronoun is strengthened in all singular cases except the genitive, and in the nominative/accusative plural neuter, by the emphatic particle *-c(e)*, viz. dat. *huic*, abl. *hōc*, *hāc*, *hōc*, nom./acc. pl. neut. *haec*, etc. The particle is optionally added to other cases, e.g. acc. pl. masc. *hōs-ce*.

7.3.4.4. *iste, ista, istud*

The pronoun *iste, ista, istud* 'that one' is an etymological hybrid made up of the original deictic pronoun *is* followed by *-te*, an enclitic connective in a "strengthened" construction parallel to *quisque* 'each' (Eska 1989). It corresponds to Gk. αὖτε 'again, next', Osc, avt 'but, however', Umbr. *ote*. But from the earliest times the combined form was treated as though *is* were an invariable stem *is-*, and the inflection was carried out, as generally in Latin, at the end of the word, following the pattern of other pronominal declensions.

7.3.4.5. *ille, illa, illud*

The pronoun *ille, illa, illud* 'that one' is inflectionally parallel to *iste*. There is some uncertainty over the root. The best analysis is based on Old Latin forms such as *olle, ollus, olleis*, and *ollos*, which suggest a root **ol-* suffixed with **-no-*. The base *ol-* may be connected with the first member of such forms as *ul-terior* 'farther', *ul-trā, ul-trō* 'beyond', and perhaps even *ōl-im* 'at that time'. This derivation is not without problems, however, since the change of *o-* to *i-* in this form is isolated. But the testimony of the grammarians that *olle, olla*, etc. is the earlier form of *ille, illa* (cf. Varro *Ling.* 7.42) seems to secure their status, despite the phonetic difficulties.

7.3.4.6. *ipse, ipsa, ipsum*

The pronoun *ipse, ipsa, ipsum* 'the very one', frequently used in conjunction with the reflexive pronoun (*sē ipsum* 'his very self'), is based on the pronoun *is, ea, id* plus the particle *-pse*. There are early forms such as nom. sg. fem. *ea-pse*, acc. sg. masc. *eum-pse*, and abl. sg. fem. *eā-pse* found in Plautus, all attesting to the original makeup of this pronoun. The particle *-pse* is of obscure origin. One remote though phonologically manageable possibility is that *-pse* is based on an accusative *eom* followed by some enclitic **se* (which on syntactic grounds could not be the reflexive pronoun *sē* 'himself'). Such a collocation **eom-se* would undergo regular epenthesis of *-p-* between *m* and *s* (cf. *sūmō* 'I take up', perf. *sūmpsī*), giving **eompse* (Zamudio 1989). Despite the phonological workability of this solution, it is morphologically unsubstantiated, since there is no recoverable form **se* on which the combination would be based. In any case, just as with *iste* and *ille*, *ipse* was reana-

lyzed as if there were a stem *is-*, which, following the loss of the *s*, developed with inflection at the end. There must have been some additional analogical influence from *iste* and *ille*, since the expected form of at least *ipse* is **īpse*, with compensatory lengthening after the loss of the *s*. Such influence did not prevent the neuter singular from being *ipsum* (not **ipsud*), nor did it block the interesting nom. sg. masc. form *ipsus* from occurring occasionally.

7.3.5. Indefinites, interrogatives, and relatives

It appears that PIE had two stems for the interrogative/indefinite, namely $*k^{\mu}e$-/$k^{\mu}i$- and a pronominal adjective/relative $*k^{\mu}o$-/$k^{\mu}eh_2$-/$k^{\mu}o$-. These forms underwent considerable modification in their transmission into Latin and were often confused. The Latin interrogative pronoun *quis, quid* (< $*k^{\mu}e$-/$k^{\mu}i$-) retains the early PIE gender distinction between animate and inanimate (table 7.11). Since interrogative pronouns are by their nature not dependent on an antecedent, it is sufficient to maintain an animate/inanimate system which does not differentiate between masculine and feminine (as with Eng. *who/what*). The indefinite, on the other hand, in response to the general development of the three-part masculine/feminine/neuter gender categorization of Latin nouns, evidences the same three-way system as the relative *quī, quae, quod* (< $*k^{\mu}o$-/$k^{\mu}eh_2$-/$k^{\mu}o$-, table 7.12). The reason for this development of the three-way gender distinction in the indefinites seems to be connected to their use as indefinite adjectives which depend on the noun they qualify for gender, number, and case. As an adjective, the indefinite must have the morphological capability to index its dependence on masculine, feminine, or neuter noun phrases. As the indefinite developed further into its function as relative, a category for which a single PIE etymon cannot be reconstructed, the indexing of relations with antecedents further contributed to the stabilization of the categories of gender, number, and of course case in the indefinite pronoun.

The PIE interrogative/indefinite reconstruction $*k^{\mu}e$-/$k^{\mu}i$- (table 7.13), with the adjectival/relative variant $*k^{\mu}o$-/$k^{\mu}eh_2$-/$k^{\mu}o$- (table 7.14), is supported by data from a wide range of IE languages: Osc. **pís**, Skt. (unchanged form) *kás, kā́, kát*; Gk. τίς, τί; Lat. *quis, quid*; OIr. *cia, cid*; Hitt. *kuiš, kuit*; Goth. *hvas, hvō, hva*; OCS *kŭto, čĭto*. As these bases developed into Latin, they split into the three functional categories of interrogative, indefinite, and relative, with a significant amount of formal and constructional overlap among the three. Among the forms covered in this overall inflectional group are the following.

a. **Interrogatives**: *quis, quid* 'who?', *ecquis* 'is there anyone that?', *quisnam* 'who, pray?', and the adjective *uter* 'which of two ?' < $*k^{\mu}otero$-, which contains the oppositional suffix *-*tero*-: cf. Skt. *katarā́ḥ*, Lith. *katràs*, OCS *koteryjĭ*, Gk. πότερος, Osc. (loc. sg.) **pútereí-píd**, Goth. *hvaþar*.
b. **Indefinites**: *quis, quid* 'anyone, anything', *aliquis* 'someone', *quisquam*

Table 7.11. The Latin interrogative/indefinite

	Sg. masc./fem.	Pl. neut.	
nom.	quis	quid	The interrogative plural is rare; when it occurs it follows the declension of the relative.
acc.	quem	quid	
gen.	cuius	cuius	
dat.	cui	cui	
abl.	quō	quō	

Table 7.12. The Latin relative

	Sg. masc.	fem.	neut.	Pl. masc.	fem.	neut.
nom.	quī	quae	quod	quī	quae	quae
acc.	quem	quam	quod	quōs	quās	quae
gen.	cuius	cuius	cuius	quōrum	quārum	quōrum
dat.	cui	cui	cui	quibus	quibus	quibus
abl.	quō	quā	quō	quibus	quibus	quibus

Table 7.13. The PIE interrogative/indefinite *$*k^{\mu}e$-/$k^{\mu}i$-*

	Sg. masc./fem.		neut.	Pl. masc./fem.		neut.
nom.	$k^{\mu}e$, $k^{\mu}is$		$k^{\mu}id$	$k^{\mu}eies$		$k^{\mu}ih_2$
acc.	$k^{\mu}im$		$k^{\mu}id$	$k^{\mu}ins$		$k^{\mu}ih_2$
gen.		$k^{\mu}esio$			$k^{\mu}eisom$	
dat.		$k^{\mu}esmei$			$k^{\mu}eib^{h}(i)os$	
abl.		$k^{\mu}et$			$k^{\mu}eib^{h}(i)os$	
loc.		$k^{\mu}esmi$			$k^{\mu}eisu$	
instr.	$k^{\mu}ei$		$k^{\mu}ih_1$		$k^{\mu}eib^{h}is$	

Table 7.14. The PIE adjective/relative *$*k^{\mu}o$-/$k^{\mu}eh_2$-/$k^{\mu}o$-*

	Sg. masc.	fem.	neut.	Pl. masc.	fem.	neut.
nom.	$k^{\mu}os$	$k^{\mu}eh_2$	$k^{\mu}od$	$k^{\mu}oi$	$k^{\mu}eh_2es$	$k^{\mu}eh_2$
acc.	$k^{\mu}om$	$k^{\mu}eh_2m$	$k^{\mu}od$	$k^{\mu}ons$	$k^{\mu}eh_2ns$	$k^{\mu}eh_2$
gen.		$k^{\mu}osio$		$k^{\mu}oisom$	$k^{\mu}eh_2som$	$k^{\mu}oisom$
dat.		$k^{\mu}osmei$			$k^{\mu}oib^{h}(i)os$	
abl.	$k^{\mu}ot$	$k^{\mu}et$	$k^{\mu}ot$		$k^{\mu}oib^{h}(i)os$	
loc.		$k^{\mu}osmi$			$k^{\mu}oisu$	
instr.	$k^{\mu}oi$		$k^{\mu}ih_2$		$k^{\mu}oib^{h}is$	

'anybody', *quispiam* 'anyone', *quisque* 'everyone', and two indefinite relatives, namely *quīcumque* 'whoever' and the reduplicated *quisquis* 'whoever' (Osc. **pispis**).

c. **Relatives**: *quī*, *quae*, *quod* 'who', *quīvīs* 'whoever you will', *quīlibet* 'anyone you will', and *quīdam* 'a certain one'.

7.3.6. The development of the PIE interrogative and indefinite pronouns into Latin

7.3.6.1. Singular

7.3.6.1.1. Nominative

The interrogative forms *quis*, *quid* go back to PIE **k$^{\text{w}}$is*, **k$^{\text{w}}$id* (cf. Gk. τίς, τί, Osc. **pís**, **píd**). The masculine and feminine relative forms *quī*, *quae*, on the other hand, rest on a PIE **k$^{\text{w}}$o-*, **k$^{\text{w}}$eh$_2$-* followed by a particle *-i*; the neuter *quod* derives from PIE **k$^{\text{w}}$od*. The endings of *quis* and *quid* derive from the PIE nom. sg. animate ending **-s* and the nom. sg. neut. **-d*, also in *id*, *illud*, *hoc* (< **hod-ce*).

7.3.6.1.2. Accusative

The interrogative and indefinite share a common form *quem* for the masculine and feminine (< **k$^{\text{w}}$im*), which also appears in the the relative masculine; the relative feminine *quam* derives from **k$^{\text{w}}$eh$_2$m*. The neuter *quid* (< **k$^{\text{w}}$id*) and *quod* (< **k$^{\text{w}}$od*) utilize the same inanimate pronominal suffix **-d* seen in the nominative.

7.3.6.1.3. Genitive

The common genitive form *cuius* has received a number of explanations, all of them difficult to justify with phonetic precision. Given the inscriptional representation of *cuius* as QVOIVS, and the comparative evidence of forms such as Skt. *kásya* 'whose' and Gk. τοῖο 'of the one', it seems that a reconstruction **k$^{\text{w}}$osio-s*, with an additional ending *-s*, will provide the least problematic derivation, though it must be conceded that the loss of **-si-* is without parallel in the history of Latin phonology. See Wallace—Joseph (1991) for discussion.

7.3.6.1.4. Dative

Latin *cui*, common to all genders, is represented by *quoi* in some archaizing texts and even has an inscriptional representation as QVOIEI. None of these forms can be taken back to PIE **k$^{\text{w}}$esmei*. They are independent Italic formations (Oscan–Umbrian shows both: cf. Osc. **pusme** < **k$^{\text{w}}$esmei* and *piei*). The innovating dative forms may be based on the root form **k$^{\text{w}}$o-* or are perhaps modeled on the genitives after the loss of **-si-* when the stem could have been reinterpreted as **k$^{\text{w}}$o(i)-*.

7.3.6.1.5. Ablative

The common ablative forms *quŏ*, *quā* are derived from PIE **$k^{\mu}ot$* and **$k^{\mu}et$*, with loss of final **-t*. The *-ā* of *quā* is problematic, however, and is probably analogical to the ablative of the nominal stems in **-eh_2*.

7.3.6.2. Plural

7.3.6.2.1. Nominative

PIE **$k^{\mu}eies$* is reconstructed in large part on the strength of the OLat. *quēs*, which occurs in the *SC de Bacch.* as QVES. Otherwise, a reconstructed form **$k^{\mu}ei$* (cf. Skt. *ké*) for the nominative plural animate is indicated, at least based on the Latin data, since the plurals of the interrogative, relative, and indefinite are all *quī*, *quae*.

7.3.6.2.2. Accusative

PIE **$k^{\mu}ons/k^{\mu}eh_2ns$* yields Latin masc./fem. *quōs*, *quās*, with regular loss of *n* before *s* and compensatory lengthening.

7.3.6.2.3. Genitive

From PIE **$k^{\mu}oisom$* comes Lat. *quōrum*; the fem. *quārum* derives from **$k^{\mu}eh_2som$*.

7.3.6.2.4. Dative/ablative

The joint dative/ablative plural form *quibus* derives from the PIE dative/ablative **$k^{\mu}eib^{h}(i)os$*. An alternate form *quīs* is found in certain authors; it is no doubt constructed on the analogy of the first and second declension noun forms such as *puellīs* 'to/by the girls' and *puerīs* 'to/by the boys'.

7.3.7. Pronominal adjectives

There is a group of adjectives which share certain inflectional peculiarities with some of the pronouns. The interrogative *uter*, *utra*, *utrum* 'which of two?' (< **$k^{\mu}ot$-ero-*, cf. Gk. πότερος), and its negative counterpart *neuter* 'neither' (i.e. *ne-uter*), are formed from the interrogative root **$k^{\mu}o$-* followed by the oppositional suffix **-tero-* (cf. *dexter* 'right', *sinister* 'left', etc.). While they are generally like other 1st and 2nd declension adjectives such as *bonus* 'good', *uter* and *neuter* take their genitive (*ūllius*, *nūllius*) and their dative (*ūllī*, *nūllī*) from the pronominal forms of *quis*, viz. *cuius*, *cui*. A similar pattern can be found in *alius* 'another', with its neuter from *aliu-d* (cf. Gk. ἄλλο) < **h_2elio-d*, *alter* 'the other', *sōlus* 'alone', and *tōtus* 'whole'.

7.4. Comparison of adjectives

From the standpoint of morphology, adjectives are nominals; their derivation and formation have been discussed under nominal formation. It is most likely the case that early PIE did not regularly and systematically (i.e. morphologically) compare adjectives in the positive, comparative, and superlative degrees like English "tall", "taller", "tallest". Rather, each adjective was an independent semantic and morphological unit, something like what is found in English "good", "better", "best": Lat. *bonus, melior, optimus*. Over time the three-part distinction came into existence as one member of a set of independent but semantically related adjectives came to be taken as the base form (the positive), and the comparative (with an intensive meaning something like 'very') and superlative (with a meaning something like 'absolutive') evolved around it into a suffixally expressed system.

7.4.1. Comparative

a. The intensifying (comparative) suffix **-ies-/-ios-* is added directly to the root (cf. **neu-ios-* 'very new). It is consistently found in the lengthened grade **-iōs-*, which appears regularly in Latin as masc./fem. *-ior*, neut. *-ius*, gen. *-iōris* (*altior, altius*, gen. *altiōris* 'higher', from *altus*). Thus the masculine and feminine forms of this suffix undergo paradigmatic analogical reshaping such that the nominative *-s* is replaced by *-r*, just as it is in *honor* < *honōs*, with the same shortening of the pre-suffixal vowel (**-iōs-* > **-iōr-* > **-ior*). The paradigmatic analogy to *altior* eliminates the allomorphy brought about by rhotacism in the oblique forms, as between nom. sg. **altiōs* and gen. *altiōris*. However, the nominative and accusative neuter form in *-ius* does not undergo this analogical change. The resulting *-ior, -ius* comparative suffix appears everywhere in Latin apart from exceptional forms such as *plūs* 'more' (indirectly from **pleh$_1$iōs*) and *minus* 'less' (which lacks the comparative suffix). The adverbial form *magis* 'more' is from **mag-ios*, with a reduced form of the suffix.

b. **-(t)ero-* is common in Greek and Sanskrit comparatives (cf. Gk. πονηρότερος 'more wicked' from πονηρός, Skt. *priyátaraḥ* 'more beloved' from *priyá-*), where it is affixed to stems. This suffix occurs in Latin, but only as a marker of contrastive oppositions (its original force) such as *superus* 'above' vs. *īnferus* 'below', or *dexter* 'right' vs. *sinister* 'left', and *noster* 'our' vs. *vester* 'your pl.'.

7.4.2. Superlative

The PIE absolutive (superlative) suffixes were of several types. One was based on a single morpheme **-mo-*, which occurs in Latin in lexicalized adjectives like *extrēmus* 'outermost' and *summus* 'highest'. The morpheme **-mo-* was strengthened through the addition of several other formatives. One of these, **-to-*, forms superlatives in **-to-mo-*, seen in Lat. *ultimus* 'most distant' < **ul-to-mo-*), *optimus* 'best' (< **op-to-mo-*), *intimus* 'innermost' (< **-in-to-mo-*), and *pessimus* 'worst' (**ped-to-mo- > *petsemo- > pessimus*). Another strengthening suffix is **-so-*, which forms superlatives in **-so-mo-*, seen in Lat. *proximus* 'nearest' (**prokʷ-so-mo- > *prokʷsemo- *proksemo- > proximus*), *maximus* 'greatest' (**mag-so-mo- > *mag-semo- > *maksemo- > maximus*), and *prīmus* 'first' (**pri-so-mo- > *prīsemo- >*prīsmo-> prīmus*). A third type, with **-is-to-*, is not found in Latin but can be seen in such forms as Gk. κάκιστος 'worst' (κακός), Goth. *managists* 'greatest' (*manags*), and Skt. *náviṣṭhaḥ* 'newest' (*náva-*). The productive Latin superlative formative is *-issimus* (*doctissimus* 'most learned', *fēlīcissimus* 'most fortunate', *fortissimus* 'bravest'). This suffix is difficult to analyze and may be a blend of **-isto-* and **-somo-* to create **-is-somo- > -issemo- > -issimus.*

7.5. Adverbs

The adverb cannot be reliably postulated as a separate grammatical category in PIE. Adverbs in the descendant languages are typically fossilized case forms of individual nominal expressions which have come to be reanalyzed as adjuncts to verbs or adjectives. Though every case except the vocative is reflected in the overall inventory of adverbs in the IE languages, the process of adverb formation is most readily seen in fossilized ablative case forms such as Gk. (Delph.) Ϝοίκω 'from the house' and Lat. *dextrā* 'on the right'. In these words the original case-meaning of direction is clearly preserved. Such ablatival formations are common in Latin.

The regular comparison of adverbs in Latin is based on a simple morphological process whereby the adverb is derived from the corresponding adjective. In the positive, adverbs based on adjectives of the first and second declension are formed by adding the inherited ablative form *-ē* (< *-ēd*) to the stem (e.g. *cārē* 'dearly' from *cārus*). Those based on adjectives of the third declension are productively formed by adding inherited *-iter* (e.g. *ācriter* 'fiercely' (*ācer*) and *leviter* 'lightly' (*levis*)). The ending *-iter* is based on the contrastive suffix **-tero-* (cf. *dexter* 'right', *sinister* 'left') and is found in lexicalized adverbs such as *inter* 'between', *subter* 'beneath', and *praeter* 'beside'. In the comparative, adverbs of all declensions consist regularly of the accusative singular neuter of the corresponding adjective, e.g. *cārius* 'more dearly'. The superlative is formed in a fashion parallel to that of the positive, namely by adding *-ē* to the adjectival stem, e.g. *cārissimē* 'most dearly'.

The following lexicalized adverbs in Latin have their origins in various PIE case-forms.

1. Nominative singular
   a. From masculine nouns: *versus* 'toward', *adversus* 'opposite'.
   b. From neuter nouns: *praeceps* 'headlong'.
   c. From feminine nouns: *satis* 'enough'.
2. Accusative singular
   a. From neuter adjectives: *secundum* 'beside', *multum* 'much', *vērum* 'truly', *prīmum* 'at first'.
   b. From feminine nouns: *statim* 'at once'; *clam* 'secretly', *cōram* 'openly'.
   c. From pronominals: *dum* 'yet', *tum* 'then', *nunc* 'now', *enim* 'for', *hinc* 'from which', *ōlim* 'formerly', *paulātim* 'gradually', *tam* 'so', *iam* 'already', *nam* 'for'.
3. Accusative plural
   a. From neuter nouns: *quia* 'because', *multa* 'much', *cētera* 'otherwise'.
   b. From feminine nouns/adjectives: *forās* 'outdoors', *aliās* 'at another time'.
4. Ablative singular
   a. From masculine nouns and adjectives: *prīmō* 'at first', *modo* 'only', *cito* 'quickly'; *cārē* 'dearly', *bene* 'well', *male* 'badly'.
   b. From feminine nouns: *suprā* 'above'.
   c. From pronominals: *aliā* 'otherwise', *eā* 'there', *hāc* 'here'.
5. Locative singular
   a. From masculine nouns: *domī* 'at home', *humī* 'on the ground', *rūrī* 'in the country', *illīc* 'there', *herī* 'yesterday'.

There are several other adverbial endings in Latin which have their origins in adjectival suffixes and earlier particles (see below). The form **-tos* (Lat. *-tus*) develops into the adverbial ending *-tus* seen in *intus* 'within' and *antīquitus* 'anciently'. This ending is most likely based on the participial ending **-tos*.

Inherited particles (see below) are found in adverbial complexes made up of *-de*, seen in *quamde* 'than', *unde* 'from which place' (cf. the Greek deictic particle -δε), and possibly *-dō*, as in *quandō* 'when'. Also, there is a locative particle *-bĭ* (*ibĭ*, *ubĭ*, *ibĭdem*) from PIE **-d^hi* (Skt. *ihá* 'here', Av. *iδa*), a temporal particle *-s* (*bis* 'twice'), and a temporal particle *-per* seen in *semper* 'always', *nūper* 'lately', *parumper* 'for a little while', and *topper* 'forthwith'. Adverbial *-per* may be related to the preposition/adverb *per* 'through', although it is more likely that *-per* is made up of the particle *-pe* (*quippe* 'certainly' < *quid-pe*) joined with the adverbial particle *-r* seen in *cūr* 'why' (Goth. *hvar* 'where', Lith. *kur̃*, from **k^{μ}or*).

7.6. Numerals

The IE languages show great consistency in the words for the cardinal numbers 1–10, all of which are clearly reconstructible for PIE (table 7.15). After 10 there is

Table 7.15. The numbers 1–10 in PIE[a]

**Hoinos*; **sem-*	'one'
**duoh₁*	'two'
**treies*	'three'
**kʷetuor-*	'four'
**penkʷe*	'five'
**sueks/seks*	'six'
**septm*	'seven'
**h₃ektoh₁*	'eight'
**h₁neun*	'nine'
**dekmt*	'ten'

a For selected cognates from IE languages for the numbers from one to ten, see table 1.1 on page 8.

some variation, with a few different combinations of numbers serving for 11–19. For the decad groups such as 20, 30, 40, and so on, there is a definite pattern of combination using a base number and a form of 10, such as 'four-ten' for 40. The word for '100' **(d)kmtom* is well-established for PIE. **(d)kmtom* can be analyzed as either elliptical for **(d)kmtom (d)kmt* 'tenth ten', in which **(d)kmtom* is the neuter of an ordinal form; or alternatively, and more probably, **(d)kmtom* is the genitive plural of the collective noun **(d)kmt-* with the meaning 'a decad of tens', again used as an ellipsis of **(d)kmtom (d)kmt*. The expression '1000' (Lat. *mīlle*) is less secure, without a unique realization in the IE family. Indo-Iranian and Greek furnish evidence of a stem **gʰeslo-* (Skt. *sahásram*, Av. *hazaŋrəm*, Gk. (Lesb.) χέλλιοι). This root may work for *mīlle* as well if *mīlle* is from a feminine abstract form **smih₂ gʰslih₂*, lit. 'one thousand', though there are some phonological problems with this proposal. Also recoverable for the protolanguage are the ordinal numbers from 'first' to 'tenth'. These are adjectives which, except for 'first' and 'second', are derived from their cardinal counterparts through the addition of some suffix. In Latin the suffixes are **-mo-* (*prīmus*), **-to-* (*quārtus*, *quīn(c)tus*, *sextus*), and **-o-* (*septimus*, *octāvus*, *nōnus*, *decimus*). The first three numbers *ūnus*, *duo*, and *trēs* are inflected as adjectives and agree with the noun they modify. In PIE, the first four numerals were inflected.

7.6.1. The Latin numerals

7.6.1.1. ūnus

The form *ūnus* (OLat. *oinos*, *oenus*) 'one' continues PIE **Hoinos*. **Hoinos* may not be an original numeral, but rather a pronominal "singulative" which was taken over in many of the IE languages into the numeral system. The numeral function was quite possibly carried by the root **sem-* 'one' (cf. Gk. εἷς < **sems*, μία < **smih₂*, ἕν < **sem*), which appears frequently in Latin, but outside the numeral system

proper: cf. *similis* 'like', *semel* 'once', *simul* 'at once', *simplex* 'simple', as well as in the distributive *singulus* 'single'. The ordinal which goes with *ūnus* is *prīmus* 'first' (cf. Lith. *pìrmas*, Gk. πρῶτος). A secure PIE reconstruction for 'first' is difficult: Lat. *prīmus* seems to descend from something like **prisomo-* (cf. *prī-dem* 'long ago', *pris-cus* 'ancient'). The Paelignian form *prismu* supports a reconstruction with **pris-*, though clearly the Greek evidence does not, nor does that of other IE branches such as Indo-Iranian (Skt. *prathamá-*) and Germanic (Goth. *fruma*).

7.6.1.2. duo

The form *duo* 'two' (shortened from **duō*) is from PIE **duoh*$_1$. The original final **-ō* (still evident in gen. *duōrum*, dat. *duōbus*) continues the PIE dual, seen also in the form *ambō* 'both'. Otherwise the inflection follows that of the plural. An alternate form of **duoh*$_1$, **du-*, is found in multiplicative compounds such as Lat. *duplex* 'double'; from an extended form **dui-* comes the Latin *bi-* 'two', as in *biduum* 'a space of two days', *bipennis* 'having two wings', Skt. *dvijáḥ* 'twice born', Gk. δίπυλος 'with two entrances'. The ordinal *secundus* 'second, the following' is a verbal adjective from *sequor* 'I follow'. This formation represents an independent Latin development, since the PIE word for 'second' seems to have been something like **h*$_2$*enteros* (as in Lith. *añtras* 'second') or **h*$_2$*elteros* (as in Lat. *alter* 'the other of two').

7.6.1.3. trēs

The form for the masculine and feminine of 'three' is *trēs*, directly from PIE **treies*; neut. *tria* reflects **trih*$_2$. The ordinal *tertius* is from **trio-*, augmented by the suffix **-t(i)o* (cf. Gk. τρίτος, Skt. *tṛtíyaḥ*).

7.6.1.4. quattuor

The form *quattuor* 'four' continues PIE **k*$^{\text{u}}$*etuor-*. This numeral, invariable in Latin, was inflected in the protolanguage, with the masc. form ending in **-es* (**k*$^{\text{u}}$*etuores*) and the neut. in **h*$_2$ (**k*$^{\text{u}}$*etuorh*$_2$); the PIE feminine form is reconstructible as **k*$^{\text{u}}$*etesr-* based on Celtic and Indo-Iranian evidence, but the form is unique. The loss of inflection in *quattuor* is probably due to a series of word-final changes such as, for example, the ending *-es* being absorbed into the final *-r* (viz. **k*$^{\text{u}}$*etuor-es* > **k*$^{\text{u}}$*etuor-s* > **k*$^{\text{u}}$*etuor-r* > *quattuor*). Phonetically there are several aspects of *quattuor* which are puzzling. The first is the *a* instead of the expected *e* or *o* as the first vowel. This *a*, which is present in all forms and derivatives of *quattuor*, has been explained as "expressive", a doubtful solution since there was nothing about the number "four" in Roman religion or folklore to give it privileged status. It has also

been explained as the result of some mysterious vowel in PIE, but nothing can be substantiated. The second phonetic puzzle is the geminate *-tt-*, which is also potentially expressive but is found only in *quattuor* and not in any of its derivatives. All the others have single *-t-* (cf. *quater* 'four times'). The ordinal *quārtus* 'fourth' (< **kʷotr-to-*, cf. Praen. *Quorta*, with the suffix **-to-*) contains a poorly explained *ā*, which may be due to an occasional lengthening of vowels before *r* plus a consonant (cf. *ŏrdō* 'order'). Bammesberger (1995) has suggested that the *-tt-* and *-ā-* of *quattuor* and *quārtus* may result from the same alternation of long vowel followed by single consonant and short vowel followed by geminate consonant seen in Lachmann's Law forms like *fissus* 'split' vs. *fūsus* 'poured', *lassus* 'tired' vs. *cāsus* 'fallen', and *sessus* 'seated' vs. *vīsus* 'seen'. There is yet another unpredictable variant of this stem, *quadr-* instead of the expected *quatr-* (cf. *quadrō* 'I make square', *quadrigae* 'team of four horses abreast'), with an unusual outcome for **dr*, which usually becomes *tr*, as in *taeter* 'foul' (< **taetros*), cf. *taedet* 'it disgusts'.

7.6.1.5. quīnque

The form *quīnque* 'five' continues PIE **penkʷe*, with assimilation of PIE **p ... kʷ* to *kʷ ... kʷ* in both Italic and Celtic: cf. Lat. *quīnque*, OIr. *cóic*, but Skt. *páñca*, Av. *panča*, Gk. πέντε; **pekʷoh₂* 'I cook' > **quequō* > **quoquō* > Lat. *coquō*. (*Prope* 'near' < **prokʷ-* shows the opposite assimilatory pattern.) The *ī* in *quīnque* lacks a convincing explanation: it may be analogical to the ordinal *quīn(c)tus* 'fifth' < **penkʷtos*, which makes use of the suffix **-to-*. It has been suggested (see Bammesberger 1995) that the PIE form for 'five' might have been **kʷenkʷe*, with the Latin and Old Irish forms reflecting the archaic pattern and the innovative assimilation of **kʷ ... kʷ* to *p ... kʷ* in the other languages working in the opposite direction, as a dissimilation. It has been further suggested that the initial **kʷe-* of *quattuor* and *quīnque* might then reflect the same PIE morpheme ('and'?), but this seems doubtful.

7.6.1.6. sex

The Latin form *sex* 'six' represents one of the three developments of PIE **sueks/seks*. In one group of languages, **sueks* emerged with the sibilant intact, as in Latin (cf. Skt. *ṣáṭ-*, Goth. *saíhs*); in another group the **s* is lost and the labial remains (cf. Gk. (Myc.) *we-pe-za*, Arm. *vec'*); and in a third group both initial sounds remain (cf. Gaul. *suexos* 'sixth'). The ordinal *sextus* is built on the combination of *sex* and the suffix *-tus* < **-to-*.

7.6.1.7. septem

The form *septem* 'seven' continues PIE **septm*, following regular phonetic developments. Germanic does not conform here, showing no evidence of the **t* found

everywhere else (cf. Goth. *sibun*, OE *seofon*). The Latin ordinal is *septimus* (< **septmo-*).

7.6.1.8. octō

The form *octō* 'eight' (which is also found in *octōber* 'October') is derived from PIE **h₃ektoh₁*, with regular phonetic developments. The ordinal form *octāvus* contains an unpredicted *ā*, possibly reflecting **h₃*, which according to Martinet (1956) becomes in Latin *āv* before a vowel. By this analysis, *octāvus* derives from **h₃ekteh₃o-*.

7.6.1.9. novem

The form *novem* 'nine' continues PIE **h₁neun*, with alteration of the final consonant **n* to *m* under the influence of *decem* 'ten'. The original final **n* is plainly evident in OIr. *nói n-*, Goth. *niun*, and can even be seen in the Latin ordinal *nōnus* 'ninth', which is formed from **h₁noueno-*.

7.6.1.10. decem

The form *decem* 'ten' (which is also found in *december* 'December', *decemplex* 'tenfold', etc.) continues PIE **dekmt*. The ordinal *decimus* is formed with the suffix **-o-*, as in *septimus*.

7.6.1.11. 'Eleven' to 'nineteen'

The numbers 11 to 19 cannot be securely reconstructed for PIE, though in most branches of IE some phrasal combination of a lower numeral plus ten seems to be prevalent. Latin forms the numbers 11 to 17 by creating compounds based on the numbers 1 through 7 in combination with the number 10. These formations are relatively transparent and require no special comment except to note that the second member of the compound *-decim* has weakened second vowel (from *decem*), and that the order of elements is the opposite of that found in the Romance languages, where such a construction is used (cf. Lat. *septen-decim*, Fr. *dix-sept* '17'). Otherwise, they follow regularly: *ūndecim* '11' < **oin(o)-decem*; *duodecim* '12' < **duō-decem*; *tredecim* '13' < **trēs-decem*; *quattuordecim* '14' < **quattuor-decem*; *quīndecim* '15' < **quīnqu(e)-decem*; *sēdecim* '16' < **segz-decem* < **seks-decem*; *septendecim* '17' < **septem-decem*. The numerals *duodēvīgintī* '18' and *ūndēvīgintī* '19' are literally '1, 2 from 20', a counting pattern found in Etruscan and quite possibly modeled on it, though the presence of the subtraction pattern in Indic suggests the possibility that it might be inherited.

The ordinals for 11 and 12 are transparently based on the corresponding cardinals, viz. *ūndecimus* and *duodecimus*. After that there is a different pattern for 13 to 17, which are formed from the combination of ordinals such as *tertius decimus*, *quārtus decimus*, *quīntus decimus*, and so on, though a few analogical formations are found such as *prīmus et decimus* and *secundus et decimus*. The ordinals 'eighteenth' and 'nineteenth' (*duodēvīcēsimus* and *ūndēvīcēsimus*) are based on the cardinals.

7.6.1.12. Decads, hundreds, thousands

The decads 20, 30, 40, 50, 60, 70, 80, and 90 are compounds based on the numbers 2–9 in combination with the number 10, which appears as *-gintī* in *vīgintī* '20' and as *-gintā* elsewhere. The form *-gintā* is derived from **dekmt* '10' with the collective suffix **-eh₂* (> Lat. *-ā*). The morpheme *-gintā* is reshaped considerably from its PIE source **dekmt*; the initial **d* is lost (cf. Gk. τριά-κοντα '30'), and the **k* is voiced to *g*, perhaps in the following stages: **-dekmteh₂* > **-dkmteh₂* > **-kmteh₂* > **-gmteh₂* > **-gentā* > *-gintā*. The second part of *vīgintī* '20', *-gintī*, is formed in the same way, but with a different (dual?) collective suffix **-ih₁* > Lat. *-ī*. The derivations of the individual words for 20 to 90 are as follows, each base number ending in a collective suffix: *vīgintī* '20' < **dui-dekmtih₁*; *trīgintā* '30' < **trih₂-dekmteh₂*; *quadrāgintā* '40' (with unexplained *d* for *t*) < **kʷetreh₂-dekmteh₂*; *quīnquāgintā* '50' < **penkʷeh₂-dekmteh₂*; *sexāgintā* '60' < **suekseh₂-dekmteh₂*; *septuāgintā* '70' (with unexplained *u*) < **septeh₂-dekmteh₂*; *octōgintā* '80' < **h₃ektoh₁-dekmteh₂*; *nōnāgintā* '90' < **h₁noueneh₂-dekmteh₂*.

The ordinals of the decads are built on the suffix *-ēsimus* (*-ensimus*), which has several possible sources. It may derive from the reanalysis of the suffix of **dekmt-o-* 'tenth' as **dekmt-to-*, giving in turn **-dekmtˢt-o-*, directly attested in forms such as Gk. εἰκοστός 'twentieth'. By this analysis the affix **-tˢt-* becomes **-ss-*, simplified to **-s-*, to which is added (again) the suffix *-imus* of *decimus*, yielding the regular ordinal forms like *vīcēsimus* 'twentieth', *trīcēsimus* 'thirtieth'. For the phonetics of the change of **-tt-* to *-ss-*, cf. past participial forms *sessus* (*sedeō* 'I sit'), *passus* (*patior* 'I suffer'). Another derivation for the ordinals of the decads treats the suffix of (zero-grade) **-dkmt-* as a variant of the superlative suffix seen in Skt. *-tamaḥ* in the zero grade, viz. **-tmmo-*. The suffix is reanalyzed as **-mttmmo-* > **-ensumo-* > *-ensimus* (*-ēsimus*).

The Latin word for '100', *centum*, is part of a well-established set of words in the IE languages which go back to PIE **(d)kmtom* (Skt. *śatám*, OIr. *cét*, Goth. *hund*, Gk. ἑκατόν, etc.). Lat. *centum* is derived directly from **(d)kmtom*, with predictable loss of the initial **d*. Latin also has internal mechanisms for the creation of adjectives signifying 'hundreds' such as *ducentī*, *trecentī*, *quadringentī*, etc., along with numerous other formations indicating numerical categories like ordinals (e.g. *ducentēsimus* 'the two hundreth'), distributives (e.g. *ducēnī* 'by two hundreds'),

and adverbial expressions (*ducentiēs* 'two hundred times').

Lat. *mīlle* '1000' has a neuter plural form *mīllia, mīlia*. *Mīlle* has no transparent etymology, though the most credible derivation of this form postulates a compound of 'one' and an abstract form of *$*g^heslo$*- '1000', viz. *$*smih_2\ g^hslih_2$*, which, though not without phonetic difficulty, yields *mīlle, mīlia*. The ordinal which corresponds to *mīlle* is *mīllēsimus*.

7.6.1.13. Distributives and multiplicatives

Latin (also Armenian) marks number words which express group membership. These adjectives are known as distributives and are typically translated with the word 'each', as in Lat. *sēnī* 'six at a time, six each'. The first four are characterized by the adjectival formative *-*(s)no*- followed by the abstract suffix *-*ih_1*. The sporadic *-*s* in these forms is possibly an analogical extension from the final of **treies* 'three'. The Latin forms are: *bīnī* 'twofold, two apiece' (< *$*duis\text{-}no\text{-}ih_2$*, cf. *bis* 'twice'; cf. Arm. *krkin*); *trīnī* 'three at a time, three together' (< *$*tris\text{-}no\text{-}ih_1$*, cf. *ter* 'three times' < *$*tr(i)s$*); cf. Arm. *err*-); *quaternī* 'four at a time, four each' (< *$*k^we\text{-}tris\text{-}no\text{-}ih_1$* (with the first vowel uncertain); cf. Arm. *kʻarr*-); *quīnī* 'five each' (< *$*penk^w\text{-}s\text{-}no\text{-}ih_1$*); *sēnī* 'six each' (< *$*sueks\text{-}no\text{-}ih_1$*); *septēnī* 'seven each' (< *$*sept\text{-}eh_1n\text{-}ih_1$*), which is analogical to *sēnī*; *octōnī* 'eight each' (< *$*h_3ektoh_1\text{-}no\text{-}ih_1$*); *novēnī* 'nine each' (< *$*h_1neu\text{-}eh_1n\text{-}ih_1$*, like *sēnī*, but with reanalysis of the root *$*h_1neun$* without the final nasal); and *dēnī* 'ten each' (< *$*d(e)\text{-}eh_1n\text{-}ih_1$*), with the same truncation of the root as in *novēnī*.

Finally, Latin has a special category of words known as multiplicatives, which indicate how many times or how often some event takes place. These words exist as both adverbs and adjectives. The adjectives are formed in combination with the root **plek*- 'fold', as in *simplex* 'single', *duplex* 'twofold', *triplex* 'threefold'. The adverbs, which are distinct in origin from the adjectives, are derived directly from the cardinal numbers of PIE: *semel* 'once', *simul* 'at once' (< **sem*-); *bis* 'twice' (< **duis*); *ter* 'three times' (< **tris*, reflecting the process whereby the sequence *CriC*- becomes *CerC*-, cf. *tertius* 'third'); *quater* 'four times' (< *$*k^wetro$*-); the remaining multiplicatives are formed by the addition of a suffix *-iēns* (< **-int*; cf. Skt. *kíyant*- 'how much') to the cardinal, viz. *quīnquiē(n)s* 'five times', *sexiē(n)s* 'six times', *septiē(n)s* 'seven times', *octiē(n)s* 'eight times', *noviē(n)s* 'nine times', and *deciē(n)s* 'ten times', with the last four in simplified form, viz. *sept*-, *oct*-, *nov*-, and *dec*-). For further discussion of Latin numerals see Coleman (1992) and Sihler (1995: 402–438).

7.7. Undeclined forms

7.7.1. Particles

Particles are invariable lexical items reconstructible for PIE which serve specified grammatical functions that are not carried by the familiar parts of speech. Among the many functions marked by particles in the IE languages are the indication of a question, negation, emphasis, or the "here and now". Many of the particles inherited from PIE into Latin became fused onto host words, making them recoverable only by etymological analysis (e.g. the *-c* of *hic*, *haec*, *hoc* 'this', or the *-de* of *quamde* 'in what manner'). Some others developed into enclitics, such as negative **-ne* 'not' and the conjunctions **-$k^{u}e$* 'and' and **-ue* 'or'. Others, such as the Latin negative and interrogative particles (*nĕ*, *nōn*, *num*, etc.), remained independent. Still others developed into preverbs and prepositions, which are discussed in § 7.7.2. Among the particles in Latin with secure PIE foundations and cognates are the following: the interrogative *an* 'or then?' (cf. Gk. ἄν, Goth. *an* < **h_2en*); the emphatic *-c(e)* seen lexicalized in *hic* 'this one' or still separable in dat./abl. pl. *hīs-ce* 'to/by these ones' (cf. Lith. *šė̀* 'here' < **ke*); the *-de* of *quamde* 'in what manner', *unde* 'from which place' (cf. the Greek deictic particle -δε); the intensive *-pe* of *nempe* 'truly', *quippe* 'indeed' (cf. Lith. *kaĩp* 'how' < **-pe*); and the negative particles *ne* of *neque* 'neither' (< **ne*), *nī* 'why not' (< **ne-i*); *nĕ* 'not' (< **nē*); and *nōn* 'not', which reflects earlier *ne oin(om)* < **ne-Hoinom* 'not a one'.[4]

7.7.2. Preverbs and prepositions

Many of the Latin preverbs and prepositions have their origins as the fossilized case form of a noun, pronoun, or adjective. Prepositions such as *adversus* 'against', *adversum* 'toward', *circā* 'around', *circum* 'around', *cis* 'this side of' (*citrō*/*citrā*), *extrā* 'outside', *iuxtā* 'near', *penes* 'in the hands of', *per* 'through', *praeter* 'past', *secundum* 'after', *ultrā* 'beyond', *versus* 'toward', and *cōram* 'in the presence of' are all secondary formations of this type.

The majority of the prepositions and preverbs in Latin can be taken back to particles in PIE, mostly involving local or temporal notions. Among the preverbs and prepositions in Latin which derive from particles in the protolanguage are the following.

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4 Lat. *in-* 'un-, not' (< **n-*) occurs as a negativizing prefix before adjectives and participles; cf. Skt. *a-*, *an-*, Gk. α-, αν-, Goth. *un-*. This prefix, which in Latin has the positional variants *in-*, *im-*, *il-*, and *ir-*, can be seen in the following forms: Lat. *im-mortālis* 'immortal', *in-hospitus* 'inhospitable', *il-lĭberālis* 'ungenerous', and *ir-rāsus* 'unshaven'. This prefix is disguised in forms like Lat. *ignōtus* 'unknown' (< **in-gnōtus*) by the omission of the *n* of the prefix before a velar. This omission is to be explained by the pronunciation of *gn* in Latin as *ŋn*.

ad 'to' (cf. Goth. *at*); < *$*h_2ed$*
ante 'before' (cf. Skt. *ánti*, Gk. ἀντί); < *$*h_2enti$* (originally the locative of *$*h_2ent$*- 'front')
ab 'from, by' (cf. Skt. *ápa*, Gk. ἀπό); < *$*h_2epo$*
ambi 'around' (cf. Skt. *abhí*, Gk. ἀμφί); < *$*h_2mb^hi$*?
ē, ex 'out of' (cf. Gk. ἐξ, OIr. *ess*-); < *$*h_1eg^hs$*
in 'in, into' (cf. Gk. ἐν, Goth. *in*); < *$*h_1en$*; related to *in* are the suffixed forms *inter* 'between' and *intrā* 'within', and perhaps *īnferus/īnfrā* 'below' < *$*h_1nd^her(i)$*
ob 'against' (cf. Skt. *ápi*, Gk. ἐπί); < *$*h_1e$*-*pi* or *$*h_1o$*-*pi*; the voiced *b* in *ob* raises the possibility of a connection with *$*h_2m$*-*b^hi*
cum 'with' (cf. OIr. *co*, Goth. *ga*-); < *$*ko(m)$*; related to *cum* is *contrā* 'against'—cf. *in* and *intrā*.
prō(d)- 'in front of, for' (cf. Skt. *prá*, Gk. πρό); < *$*pro$*
prae 'before' (cf. OCS *prědŭ*); < *$*preh_2i$*
post 'after' (cf. Skt. *paścát*, Alb. *pas*); < *$*pos$* (*post* from extended form *$*pos$*-*ti*)
super 'over' (cf. Skt. *upári*, Gk. ὑπέρ); < *$*(s)uper(i)$*; related to *super* is *suprā* 'above';
sub 'beneath' (cf. Gk. ὑπό, Skt. *úpa* 'near, proximate'); < *$*(s)upo$*; related to *sub* is the suffixed *subter* 'beneath'.

Accounting for the systematic relationship between preverbs and pre- and postpositions in PIE and the descendant languages has proven difficult. It is generally agreed that the PIE particles had rather free movement within a sentence: if unmarked, they appeared before the verb; if marked, the typical position was clause-initial (cf. Watkins 1964). It is also the case that throughout the IE languages there is often a systematic morphological relationship between preverbs such as the *in*- of Lat. *inveniō* 'I come upon' and prepositions such as Lat. *in* 'in, into'. According to Lehmann (1974), from their unmarked preverbal position there were two developments which took place with the PIE particles, which together resulted in the genesis of the systems of preverbs and pre- and postpositions in the IE languages. In the first instance, many of the PIE particles became fused to their following verb as the juncture tightened between the two, as in the following.

(1) *domHom #$h_1$en #g^umti (= Lat. *domum in venit*) →
home to X comes

(1') *domHom #$h_1$en+g^umti (= Lat. *domum* [*in venit*] > *domum invenit*)
home to+X comes

'X comes home.'

In examples (1) and (1') the strong word boundary separating the verb and the particle was weakened to a morpheme boundary, and the free particle became a bound preverb. In examples (2) and (2'), the particle attached itself to the noun phrase constituent, becoming a postposition during the period when PIE was SOV.

(2) **domHom #$h_1$en #g^{μ}mti* (= Lat. *domum in venit*) →
home to X comes

(2') **domHom+$h_1$en #g^{μ}mti* (= Lat. [*domum in*] *venit* > *in domum venit*)
home+to X comes'

'X comes home.'

It is not uncommon for a preverb to govern a noun as if it were a preposition in the same syntactic constituent, as can be seen in the following examples.

Omnibus Druidibus (dat.) *praeest unus.* Caes. *BGall.* 6.13.8

'One man is in charge of all the Druids.'

... περιγένοιντ' ἐμοῦ ... (gen.) Dem. *De Cor.* 236

'They surpassed me.'

Also, there are times when both the preverb and the preposition occur in the same sentence, creating a hypercharacterized construction which may have served as the intermediate stage in the shift from postpositions to prepositions in the various IE languages. This construction can be seen in the following examples.

Primum, ne quam multitudinem hominum amplius trans Rhenum in Galliam traduceret. Caes. *BGall.* 1.35.3

'First, that he should not lead any further multitude of men across the Rhine.'

... *easque ad urbem adducere* ... Cic. *Fam.* 12.23.2

'and to lead them [legions] to the city'

... ἐκβῆναι ἐκ τῆς νεώς ... Thuc. 1.137.2

'to go out from the ship'

As the word order of the individual languages moved toward SVO, these postpositions became prepositions (see Baldi 1979a for discussion).

Table 7.16. Interjections

ā, āh	'ah'	cf. Gk. ᾶ, Skt. *ā*	< **h₂eh₂*
ai	'ah'	cf. Skt. *ē, ai*, Gk. αἲ, αἰαῖ	< **h₂ei*
eh	'hey'	cf. Skt. *é*, Gk. ἦ	< **h₁ē*
ō	'oh no'	cf. Goth. *ō*, Gk. ὤ	< **h₁ō*
ēheu	'alas'	cf. Skt. *ahō*	< **eheu*
hă	'ha'	cf. Skt. *ha*	< **hă*
ha ha	'ha ha'	cf. Skt. *ha ha*, Gk. ἃ ἃ	< **ha ha*
vae	'woe'	cf. Goth. *wai*, Arm. *vay*	< **uai*

7.7.3. Conjunctions

There are very few conjunctions which can be safely reconstructed for PIE. The most secure are **-kʷe* 'and', which is found in Lat. *-que* (as in *neque* 'neither'), Skt. *ca*, Gk. τε; and **-ue* 'or', found in Lat. *-ue* (as in *nēve, neu* 'nor, and not'), Skt. *vā*, Gk. ἤ. The remaining conjunctions are secondary formations, many built on the relative pronoun, such as Lat. *quod* 'that', *quia* 'because', and *cum* 'when, since', which are based on PIE **kʷod*, **kʷih₂*, and **kʷom*, respectively. Other Latin conjunctions, such as *et* 'and' (Gk. ἔτι, Skt. *áti* 'beyond') and *sed* 'but', have various derivations. *Et* is apparently based on an old locative adverb **h₁eti* 'above, beyond', while *sed* is an old privative or separative particle seen in *sēcēdō* 'go away from' or *sēpōnō* 'put aside'.

7.7.4. Interjections

Interjections are invariable words which enter into no syntactic relationship with other words in a sentence. They typically are exclamatory, expressing such notions as joy, surprise, or grief, or they are used to call or summon. These words have an emotive and often an onomatopoetic character and are thus difficult to reconstruct for the protolanguage. It is not uncommon for the reconstructions which can be conjectured to contain segments which are not part of the standard PIE inventory, such as **a*, **ā*, **h*, and **kʰ*. A few of the Latin interjections seem to have secure cognates and can be conjectured for PIE (table 7.16).

7.8. The verb

7.8.1. General characteristics of the PIE verb

Late PIE expressed the following verbal categories morphologically: **voice, mood, tense/aspect, person,** and **number.**

This system, which among the classical Indo-European languages is most elaborately represented in Greek and Sanskrit, is formally complex.[5] Individual verbal categories are sometimes expressed by independent morphemes, as in the Latin *am-ā-bā-t-ur* 'X used to be loved' (love-1st con.-impft. past indic.-3rd sg.-pass.). However, it is common for verbal categories to be expressed in multifunctional (portmanteau) morphemes which simultaneously indicate several grammatical functions in a single fused construction, such as mood and tense/aspect, or person and number. For example, in Lat. *am-ō* 'I love' the suffix *-ō* carries grammatical information relative to person, number, tense, voice, and mood. Partly because of such fusions, the precise analysis of PIE verbal categories, and the ultimate reconstruction of the protosystem, have proven to be controversial. A further obstacle to reconstruction is the uneven distribution of verbal categories in the descendant languages. The formally luxurious systems of Greek, Latin, and Sanskrit, for example, which express complicated temporal oppositions, contrast with the systems of, say, Germanic and Hittite, with a primary opposition of past vs. non-past events.

7.8.2. Active and non-active in early PIE

Schmidt (1979), Gamkrelidze—Ivanov (e.g. 1995), and Kurzová (1993) have argued that the primitive voice distinction in early PIE was between active and non-active verb classes (see also Neu, e.g. 1985, with different terminology). This proposal constitutes a significant departure from the traditional view of such scholars as Benveniste (1950). In the view of Schmidt, Gamkrelidze—Ivanov, Neu, and Kurzová, PIE verbs were marked as denoting activities (active verbs) or states and processes (non-active verbs). Active verbs indicate voluntary actions such as 'run', 'put', 'kill', which are ascribed to an external agent and are oriented toward an external goal. Non-active verbs, on the other hand, indicate states or involuntary actions and processes such as 'know', 'shine', or 'think' which are not ascribed to external agents. In active verbs the subject is typically the agent, while in non-active verbs the subject is in some other thematic role such as experiencer or beneficiary. It is typical in active/non-active languages to have separate inflections for the two categories. This seems to have been the case in early PIE, where the endings and voice distinctions differ between the active and non-active verbs.

Languages which have a fundamental opposition between active and non-active

5 The following discussion attempts to steer a theoretically neutral course. The issues involved in the specification of complex verbal categories such as those about to be discussed are sometimes wickedly intricate, and reconciling the various theoretical viewpoints in the literature is difficult at best. For descriptive accounts of the PIE verb, see Kerns—Schwartz (1972) and Lehmann (1993). For the development of the Latin verb from PIE see Kurzová (1993). For a treatment of complex verb formation see Miller (1993). General information on the verb in PIE can be found in Beekes (1995), Sihler (1995), and Szemerényi (1996).

verbs have several salient characteristics. One is that active/non-active languages show a good deal of verbal concord, in which parts of sentences are bound together through agreement constructions. Another characteristic of active/non-active languages is that nouns as well as verbs are marked for the distinction between action and state. Nouns are marked in the active as animate ('person', 'animal') and in the non-active as inanimate ('earth', 'stone'), a distinction which is also represented inflectionally. And, since individuals are not viewed as possessing objects, active languages lack a verb for 'have', a feature which shows up in Latin and other early IE languages in the *mihi est* 'there is to me' possessive construction (Bauer 1996). It is well known that there is no reconstructible word for 'have' in PIE. Various IE languages which introduced such a lexical concept typically derive the abstract meaning of 'have' from a more concrete concept of 'seize', 'take', 'grab', or 'achieve power over'. Latin, for example, seems to have taken over the root *$*g^hab^h$- 'seize' in fashioning the verb *habeō* 'I have' (cf. Old Irish *gaibid* 'X catches, takes', Skt. *gábhastiḥ* 'hand'); the older physical meaning is still evident in the Latin derived form *inhibeō* 'I inhibit, retain'. Gk. ἔχω 'I have' is clearly to be associated with a root *$*segʰ$- 'hold' (cf. Skt. *sáhate* 'X overcomes'). For a review of these and other characteristics of active/non-active languages, see Lehmann (1993: 213–215).

According to Kurzová (1993: 118), the active verbs of early PIE expressed both imperfective and perfective notions. The imperfective was the predecessor of the inflectional category of the present (cf. Lat. *currō* 'I run'), while the perfective was a predecessor of the aorist (cf. Lat. *fīnxī* 'I fashioned'). The non-active verbs, on the other hand, expressed the notions of non-progressive states (cf. Gk. οἶδα 'I know') and progressive events or processes (cf. Lat. *vertor* 'I turn'). It is most likely that these original distinctions were lexical and came to be morphologized in later PIE and the various descendant systems.

The classical PIE voice category of middle and the tense/aspect categories of present, perfect, and aorist apparently represent later developments from the fundamental active/non-active opposition. There appears to be a genetic connection between the middle and the perfect stem in PIE (Kuryłowicz 1932, Stang 1932).[6] On the inflectional side, there are parallel sets of endings in the reconstructed perfect and middle, as represented by the Sanskrit first, second, and third person singular perfect endings *-a, -tha, -a* (cf. *bubódha, bubódhita, bubódha* 'I, you, X is awake, knows'), and Greek perfects ending in -α, -θα, -ε (cf. οἶδα, οἶσθα, οἶδε 'I, you, X knows'). These forms find a parallel in the Hittite middle endings *-ḫa, -ta, -a* (cf. *ešḫaḫa-ri, ešta-ri, eša-ri* 'I, you, X sits'). Furthermore, there may be a parallel between the *-r* found in the Hittite (also Italic and Celtic) middle endings (cf. Lat. *loquitur* 'X speaks', OIr. *labrithir*) and the reconstructed ending of the 3rd pl. perfect, viz. **-rí-ēr* (cf. Lat. *vīdēre, vīdērunt* 'they saw', Skt. (unchanged form) *vidúr*).

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6 The connection between the middle and the perfect was first noted by the Greek grammarian Dionysios Thrax, who cited perfect and middle forms together in his *Techne Grammatike*.

Semantically, both the perfect and the middle denote a state, and both can be analyzed as intransitive (cf. Wackernagel 1926, Chantraine 1927). According to Kuryłowicz (1964: 63), the perfect is the "oldest form of the mediopassive [middle] that can be reconstructed on purely internal evidence." In this view the original opposition in the PIE verb is taken to be that between the active and the non-active rather than between the active and the middle, the perfect being a later development from the non-active.[7]

7.8.3. Voice in classical PIE

As noted, classical PIE distinguished two voices, active and middle. A verb in the active voice is one in which the subject is typically the agent but is not directly affected by the action (e.g. *Claudia called Sara*). When a verb is in the active voice, the action being identified is external to the subject. The middle is the verbal category in which the verbal action is being performed for the benefit or interest of the subject, who may also be intensively involved, as in Gk. ὁ παῖς λούεται 'the boy washes', Skt. *yájate* 'X makes a sacrifice on his own behalf'. It can also indicate reflexivity (e.g. 'arm oneself') and reciprocity (e.g. 'embrace') and other notions which involve the intense participation of the subject. Middles have no external agent, i.e. the grammatical subject is both the agent and the recipient of the verbal action (theme), with the theme serving as the syntactic subject. The passive is a later development from the PIE middle. In a passive, the agent and the theme are different, and the agent is not projected to the position of subject, as in Gk. ὁ παῖς λούεται ὑπὸ τῆς μητρός 'the boy is washed by his mother'. In IE languages in which both categories are present, the passive and middle typically pattern together because in neither voice is there is an agent appearing as syntactic subject.[8]

In general, the various IE languages generalized either the middle or the passive function from the late PIE middle. For example, in Indo-Iranian the middle function is the unmarked one, with the syntactic passive secondary. In Greek, the middle and

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7 The position in which the perfect represents a primitive opposition with the active in early PIE has been challenged by Rix (1988). Rix argues that the lack of semantic homogeneity among the perfect, middle, and passive does not allow for the reconstruction of a common primitive category from which all three can be derived. He proposes instead a system in which there were three opposing categories in early PIE, namely active, middle, and stative. The active developed into the active, the middle into the reflexive and passive, and the stative into the deponent. This proposal is flawed, however, first because it fails to recognize the historically documented fact that deponents tend to evolve not from statives but from middles, and second because it fails to observe that middles typically denote states or processes. More critically, as Miller has shown (1993: 254), there is no language that has a unique marker for the middle. In the IE languages, the various middle markers have never been unambiguously separated from reflexive or passive.

8 The parallel patterning of the passive and middle is not universal. For example, English middles like "This coat buttons from the left" have active morphology.

passive are morphologically identical in all but the aorist and future forms. Italic and Celtic show mostly passive use, though there is ample evidence of the middle in deponent verbs like Lat. *sequor* 'I follow', which originally meant 'see' (cf. Skt. *sáce* 'I follow', Goth. *saíhvan* 'to see', Hitt. *šakuwa* 'eyes'), and *loquitur* 'X speaks' (cf. OIr. *-labrathar* 'who speaks'), and in relic middle verbs such as *volvuntur* 'they twist, turn', *lavātur* 'X washes', and many others (see Baldi 1977, 1978). Germanic has no productive middle surviving from PIE but does have a passive, as evidenced by Gothic. In Hittite the middle function is the unmarked one.

7.8.4. Tense/aspect in classical PIE

The dominant distinctions in the classical PIE verb were based on aspectual rather than temporal relations. Three aspectual stems are normally identified for late PIE, viz. the present, the aorist, and the perfect, indicated by different base structures. The present stem (imperfective aspect) identifies durative events and processes in development, and actions or situations in the present time: Lat. *sum* 'I am', Gk. εἰμί, Skt. *ásmi*, or Lat. *fert* 'X carries', Gk. φέρει, Skt. *bhárati*. The aorist stem (punctual aspect) marks a simple process, without reference to duration: Gk. ἔγνων 'I recognized', Skt. *ádāt* 'X gave', Gk. ἔδειξε 'X showed', Skt. *ánāiṣam* 'I led'. Finally, the perfect stem (perfective aspect) marks an accomplished process, and especially a state or experience of the subject: Skt. *véda* 'I know', Gk. οἶδα, Goth. *wáit*; also Gk. τέθνηκε 'X is dead', ἕστηκε 'X is standing'.

It is most likely that in the oldest PIE the primary temporal distinction which developed was between the unmarked (non-present) tense, indicated by the secondary endings **-m*, **-s*, **-t*, and the present tense, indicated by the primary endings **-mi*, **-si*, **-ti*, where the **-i* is a temporal particle indicating *hīc et nunc* 'here and now'. The present tense locates events as contemporaneous with the moment of speaking, while the non-present (past or preterite) tense locates events as anterior to the moment of speaking. Eventually this system developed into one in which the secondary endings came to mark the past, while the primary endings came to mark the present: cf. (pres.) Skt. *bhárati* 'X carries', Gk. (Hom.) φέρει vs. (imperf.) Skt. *ábharat* 'X carried', Gk. ἔφερε. There was probably no future tense in PIE. The future notion was carried by the subjunctive, which indicated indefiniteness and had a prospective or future orientation, as well as by the present and by certain **-s-* formations with desiderative and future force.

7.8.5. The development of voice and tense/aspect from early PIE to classical PIE

The classical PIE active voice develops directly from the early PIE active, in which the agent is identified as subject, external to the action (*Brutus was eating fish*, *Mary*

walks to school each day, Terry will wash the car). The derivation of the classical PIE present stem from the active category of early PIE is a direct reflection of the imperfective subclass of the active verbs, which indicated durative events. The derivation of the classical PIE aorist stem directly reflects its origins in the early PIE perfective subclass of the active verbs, which marked non-durative events.

The derivation of the remaining verbal categories from early PIE involves a series of assumptions. The first is that the non-active verbs of early PIE represented the interrelated notions of (non-progressive) state and (progressive) process. The development of verbs expressing non-progressive states from the non-active category follows from the notion that non-active verbs express such events as knowing, being dead, etc., in which the subject is not a voluntary active participant (*Brutus is dead, Claudia knows the answer*), but rather an experiencer or some other non-agent. The non-active category also gives rise to the expression of progressive processes, in which the subject is not viewed as the agent who is the instigator of the event indicated by the verb, but as the recipient or experiencer of the action (theme), internal to the verb. Such progressive processes are the basis of the expression of the middle voice, in which subjects are viewed as intensely involved in the activity identified by the verb (*Brutus is getting dressed, Claudia laments the loss of her father, Terry is enjoying the spectacle*).

From these assumptions it can be suggested that the classical PIE present and aorist stems are developments of the early PIE active category, and that the classical perfect stem is a development of the non-active. It can further be suggested that the classical PIE active voice continues the imperfective category of the early PIE active verbs, and that the classical PIE middle voice continues the progressive category of the early PIE non-active verbs.

7.8.6. From PIE to Latin

It remains now to account for the evolution of the late PIE system into Latin. The active voice of late PIE is represented by the active in Latin and is preserved throughout the verbal system. The imperfective aspect is preserved in Latin as a fundamental category of the verbal system, represented by the present stem of the verb. As with many of the IE languages, Latin eventually developed its tense categories more fully. In Latin there came to be three tenses, the present, the past, and the future, which expressed the semantic notions of contemporaneity, anteriority, and posteriority. The present tense of the imperfective aspect (the Latin present tense) is directly inherited from the PIE present. The past tense of the imperfective aspect is what is known as the imperfect tense in Latin, which marks ongoing actions in the past. The future tense of the imperfective aspect is the Latin future tense, a category which developed out of the late PIE subjunctive. The future of the third and fourth conjugations reflect ablaut variants of the PIE subjunctive, attached

directly to the personal endings, e.g. 2nd sg. **-eh$_1$-s(i)*, 3rd sg. **-eh$_1$-t(i)*, etc. Neither the Latin imperfect nor the Latin future of the first and second conjugations can be reconstructed as PIE formations. Both are specific Italic morphological constructs, most likely involving the compounding of the verbal root with a form of the verb **b^{h}uH-* 'be'.

The Latin perfect, which is represented by the perfect stem of the verb (perfective aspect), results from the historical merger of the classical PIE perfect and aorist. Like the imperfective, the perfective had three tenses: present, past, and future. The present tense of the perfective in Latin is what is known as the perfect tense; the past tense of the perfective is what is known as the pluperfect tense; and the future tense of the perfective is what is known as the future perfect tense. Of the three, only the Latin perfect has Indo-European morphological ancestry, either in the PIE perfect or some form of the PIE aorist. The pluperfect and future perfect tenses are Latin hybrids based on a combination of the perfect stem and forms of the verb 'be'. There were most likely no such tenses marking relative time in PIE.

The late PIE middle voice developed in Latin into three complementary categories: the middle, which is semantically and lexically restricted; the deponents, which are largely morphological relics of earlier middles, though there are many denominal and analogical deponents (see Flobert 1975, Miller 1993: 229); and the passive, which is the voice in productive opposition to the active. For theoretical discussion, see Kurzová (1993). The foregoing discussion is summarized in figure 7.1.

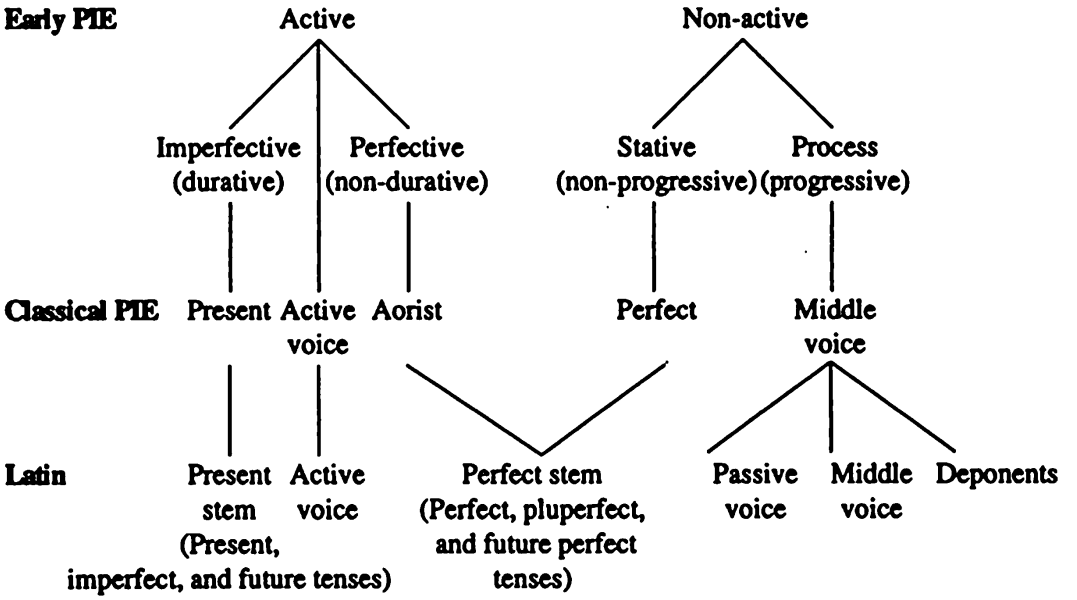

Figure 7.1. The development of tense/aspect and voice from early PIE to Latin

7.8.7. Mood in PIE

Classical PIE expressed four moods morphologically:[9] the indicative, which indicates that the speaker views the content of the proposition as a fact and is an assertion of direct personal knowledge; the subjunctive, which asserts no direct knowledge on the part of the speaker, whence its use to indicate future possibility, doubt, conditionality, etc.; the optative, which indicates that the content of the proposition is wished for or desired by the speaker (subjunctive and optative share the common feature of marking irrealis conditions); and the imperative, which is used to indicate that the content of the proposition is a command being issued by the speaker.[10] The classical PIE indicative, subjunctive, and imperative are preserved to one degree or another in Latin. The optative, of which morphological residue survives in Latin, merges with the subjunctive, with a good deal of morphological contamination taking place in the process.

7.8.8. Person in PIE

The various persons of the verb are indicated by a set of endings which are found with individual tense forms. Generally speaking, there are two sets of endings in classical PIE, called "primary" and "secondary". The primary endings, which differ from the secondary only in their use of the suffixed particle ***-i***, are found mainly in the present indicative, while the secondary endings are found mainly in the imperfect and aorist indicative, and in the optative. There is variation between primary and secondary endings in the subjunctive.

7.8.9. Other characteristics of the PIE verbal system

7.8.9.1. Thematic/athematic stems

In PIE there was a distinction between thematic and athematic verbal stems. The-

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9 Of course, PIE expressed other universal markers of illocutionary force such as interrogatives, prohibitives, and the like, but not in separate morphological constructions. For theoretical discussion of what constitutes different modalities see Miller (1993: 32ff.) and Kurzová (1993: 111–112).

10 There is another category, that of "injunctive", which is sometimes used to describe augmentless past indicative forms with subjunctive force, especially in the marking of negative prohibitions with the negative particle ***meh$_1$*** 'do not' (Skt. *mā*, Gk. μή, Arm. *mi*), as in Ved. *mā́ nas tóyuḥ prá moṣīḥ* 'do not steal away our life' (Whitney 1889 [1964]: 217–218). Originally the injunctive was an unmarked verbal form (i.e. it was marked for person and voice only, and not for tense or mood) used in mood reduction sequences and the expression of timeless events.

Table 7.17. Categories of the Latin verb

Aspect		
Perfective, imperfective		
Tense	Mood	Voice
Present Past Future	Indicative Subjunctive Imperative	Active Passive Middle
Person		
First, second, third		
Number		
Singular, plural		

matic stems are those in which the stem ends in a vowel (typically **e/o*), to which other suffixes or personal endings are added. Athematic stems are those in which there is no theme vowel. In these stem types the personal endings are added directly to the root or to some other suffix which does not contain either **e* or **o*. Latin has for the most part generalized the thematic type (with the vowels usually appearing as *i* or *u* because of weakening). Athematic types are restricted to a few irregular verbs such as *sum*, *es*, *est* 'I am, you are, X is'.

7.8.9.2. Augment

There is an adverbial particle **h₁e* known as the "augment" which was prefixed to past tenses of the indicative with secondary endings as an accessory morpheme to indicate past time. The augment is present in Greek, Indo-Iranian, Armenian, and Phrygian. The discovery of Hittite, which has no augment, indicates that this formative cannot be reconstructed for PIE (Lehmann 1993: 244). In fact, PIE generally avoids prefixation. The augment seems to be a feature of the dialect continuum from which Greek, Indo-Iranian, Armenian, and Phrygian developed. Examples of the augment are: Gk. ἔ-φερε 'X carried', Skt. *á-bharat*, Arm. *e-ber*, Phry. ε-δαες 'X placed' (= Hitt. *daiš*).

7.8.9.3. Reduplication

Reduplication is a morphological process by which some or all of a root word is duplicated and prefixed to the root. Reduplication seems to be iconic to durativity, as can be seen in its indication of repetition, intensity, or emphasis. Intensive reduplication can be seen in Lat. *mur-murō* 'I murmur' and Sanskrit formations like *vā-*

vad- 'speak intensively'. Reduplication eventually morphologized into a device for indicating two stem types. The first marks present stems such as Gk. τί-θημι 'I place', Skt. *dá-dhāmi*, Lat. *si-stō* 'I stand', while the second is used primarily as an accessory morphological device to mark the perfect, as in Lat. *cu-currī* 'I ran' (*currō*), Gk. λέ-λυκε 'X let go' (λύω), and Skt. *bu-bódha* 'I am awake, know' (*budh-*).

The system of the Latin verb can be now represented as a formal complex of aspect (perfective and imperfective), tense (present, past, future), mood (indicative, subjunctive, imperative), voice (active, passive, middle), person (first, second, third), and number (singular, plural), schematized in table 7.17.

7.8.10. PIE verbal morphology and its development into Latin

7.8.10.1. The formation of the present stem in PIE

The following represents a synoptic view of the formation of verbal stems of the present in late PIE. For more detailed discussion of the reconstruction of the PIE verb, see Beekes (1995: 225–257), Sihler (1995: 453ff.), and Szemerényi (1996: 230–338).

7.8.10.1.1. Root presents (single root without suffix)

Athematic

*h_1es- 'be' (table 7.18; Lat. *est* 'X is', Skt. *ásti*, Hitt. *ešzi*, Goth. *ist*);
*uek- 'wish' (Hitt. *wekmi* 'I wish', Skt. *váśmi*);
*h_1ei- 'go' (Lat. *it* 'X goes', Skt. *éti*, Gk. εἶσι).

Thematic

*ueg^h-e- 'drive' (Lat. *vehō* 'I drive', Skt. *váhāmi*, Gk. ὄχος 'wagon', Goth. *ga-wigan* 'to move');
*b^her-e- 'carry' (table 7.19; Lat. *ferō* 'I carry', Gk. φέρω, Skt. *bhárāmi*, Goth. *baíran* 'to carry');
*leg-e- 'gather' (Lat. *legō* 'I gather', Gk. λέγω, Goth. *lēkeis* 'physician' i.e. 'gatherer of medicinal herbs').

7.8.10.1.2. Reduplicated presents

Small in number, these are uniformly athematic in PIE.

*de-deh_3- 'give' (Gk. δίδωμι 'I give', OLith. *dúomi*, Skt. *dádāmi*);
*d^he-d^heh_1-/d^hi-d^hh_1- 'place' (Skt. *dádhāmi* 'I place', Gk. τίθημι);
*sti-st(e)h_2- 'stand' (Lat. *sistō* 'I stand', Gk. ἵστημι, Skt. *tíṣṭhāmi*).

Table 7.18. Sample paradigm: The present indicative active of *$*h_1es$-* 'be'

$h_1$esmi	'I am'	$h_1$smes/$h_1$smos	'we are'
$h_1$essi ($h_1$esi)	'you are'	$h_1$ste	'you are'
$h_1$esti	'X is'	$h_1$senti/$h_1$sonti	'they are'

Table 7.19. Sample paradigm: The present indicative active of *$*b^her$-* 'carry'

b^heroh_2	'I carry'	b^heromos	'we carry'
b^heresi	'you carry'	b^herete	'you carry'
b^hereti/b^herei	'X carries'	b^heronti	'they carry'

7.8.10.1.3. Suffix *-*eie-/-ie-/-io-*

This is a multifunctional suffix, or perhaps several different suffixes, marking such categories as transitive, causative, and durative/iterative.

a. Transitive: **spek-io-* 'see' (Lat. *speciō* 'I see', Skt. *páśyāmi*, Gk. σκέπτομαι 'I look at' (metathesized from *σπεκ-);
   **h$_1$neh$_3$mn-ie-* 'name' (Hitt. *lamniia-* 'to name', Goth. *namnjan*, Gk. ὀνομαίνω 'I name');
b. Causative: **mon-eie-* (*o*-grade of **men-*) 'remind' (Lat. *moneō* 'I warn, cause to think'; cf. Gk. φοβέω 'I frighten' vs. φέβομαι 'I am afraid');
c. Iterative/durative: **b^{h}or-eie-* (*o*-grade of **b^{h}er-*) 'carry around' (Gk. φορέω 'I wear' vs. φέρω 'I carry').

7.8.10.1.4. Suffix *-*eh$_1$-*

This suffix marks stative intransitives.

**sed-eh$_1$-* (Lat. *sedeō* 'I am seated', OCS *sěděti*, Lith *sėdėti*); *iaceō* 'I am thrown, lie', *pendeō* 'I am suspended, hang' : *pendō* 'I suspend'). This suffix is also seen in Lat. *lateō* 'I am hidden', *taceō* 'I am silent', *maneō* 'I am in waiting', and *pateō* 'I am open'.

7.8.10.1.5. Suffix *-*skelo-*

This suffix is multifunctional, occurring with zero-grade ablaut in the root. Its primary use is to mark iteratives or duratives (Hittite, Greek), though it also serves to indicate inchoatives and ingressives (Latin),[11] and causatives (Tocharian).

**g^{u}m-sk-* 'go' (Skt. *gácchāmi* 'I go', Gk. βάσκω (only used in imper., as in βάσκ' ἴθι 'speed away');

11 This suffix and the preceding one in *-*eh$_1$-* combine to form a common 2nd con. inchoative type in Latin in *-ēscō* (*albeō/albēscō* 'I am/become white', *rubeō/rubēscō* 'I am/become red'), etc. It also combines with verbs of the Latin first conjugation to form inchoatives like *labāscō* 'I begin to totter' (*labō*) and the fourth in forms like *obdormīscō* 'I fall asleep' (*dormiō*). In general the *-*sk-* suffix is highly productive in Latin.

**prk-sk-* 'ask' (Skt. *pṛcchắmi* 'I ask', Lat. *poscō* 'I request' (< **prk-sk-oh₂*; cf. *precārī* 'to pray'), OHG *forscōn* 'to ask'.

7.8.10.1.6. Suffix **-h₁s-*

Originally, this suffix was probably a marker of desideratives, seen most clearly in Sanskrit formations such as *píbāmi* 'I drink' : *pípāṣāmi* 'I wish to drink'; *jī́vāmi* 'I live' : *jijīviṣāmi* 'I wish to live'. This suffix provides the basis for the common future markers in **-s-* found throughout the IE languages, as seen in Gk. παιδεύσω 'I will teach' (παιδεύω), Skt. *dāsyắmi* 'I will give' (*dā-*), and the archaic Lat. *faxō* 'I will do' (*faciō*), *capsō* (*capiō*) 'I will take', etc. The suffix is followed by a thematic affix *-e-* or *-o-*, and often occurs without the **h₁*.

**men-* (cf. Gk. μενῶ 'I remain') : **men-h₁s-* (Gk. (Hom.) μενέω < **menehō* < **menesō* 'I will remain');

**kleu-* (cf. Skt. *śru-* 'hear', Lat. *clueō* 'I am called or named') : **kleu-s-* (cf. Skt. *śrṓ-ṣ-ati* 'X is obedient');

**uid-* 'see' (cf. Lat. *videō* 'I see') : **ueid-s-* (Lat. *vīsō* 'I visit', i.e. 'wish to see').

7.8.10.1.7. Nasal infixes

In verbs employing a nasal infix, the morpheme **-n-* is inserted before the last consonant of the root, as in Lat. *iungō* 'I join' (< **Hiu-n-g-*), nominal form *iugum* 'yoke' (< **Hiug-om*), typically to mark durative aspect (bases without the infix are punctual in the aorist stem), or to form transitive verbs from intransitive stems. Other interpretations of this infix are possible, however; for a review of some of them see Lehmann (1993: 170–172). It is common to find the same root represented in different languages, some with a nasal infix, others without, as in Gk. δείκ-νῡ-μι 'show, point out' vs. Lat. *dīcō* 'I say'. Indeed Homeric Greek has many examples of roots with and without the infix, e.g. τῑ́ω/τῑ́νω 'I value, estimate'. Since it is the only affix of its type found in systematic use in the IE languages, it is possible that the nasal "infix" was originally a suffix which underwent metathesis and eventually was restructured into a new morphological role.

**lei-n-kᵘ-* 'leave' (Skt. *riṇájmi* 'I leave', OIr. *léicid*, Lat. *linquō*, Gk. λείπω, Lith. *liekù*);

**Hiu-n-g-* 'join' (Skt. *yunájmi* 'I bind', Lat. *iungō*, Gk. ζεύγνῡμι, Lith. *jùngiu*);

**dʰei-n-gʰ-* 'fashion or shape, as with mud' (Lat. *fingō* 'I shape', Goth. (dat.) *digandin* 'made of earth'; cf. Skt. *déhmi* 'I spread, smear', Gk. τεῖχος 'wall').

The nasal also occurs as a suffix, often with enlargements such as **-u-* (cf. Lat. *minuō* 'I make smaller', *sternuō* 'I sneeze') and **-e-/-o-* (cf. Lat. *cernō* 'I separate' and *sternō* 'I stretch out').

Table 7.20. Latin conjugation types

Conjugation	Distinguishing vowel	Examples (infinitives)	
I	ā	amāre	'to love'
		laudāre	'to praise'
II	ē	monēre	'to warn'
		carēre	'to be without'
IIIa	e (< *i)	cupere	'to wish'
		rapere	'to snatch'
IIIb	e	carpere	'to pluck'
		regere	'to rule'
IV	ī	aperīre	'to open'
		sentīre	'to feel'

7.8.10.2. The formation of the present stem in Latin

The Latin present stem continues the late PIE present. The present stem represents the imperfective aspect and has three tenses: present, past, and future, which correspond to the traditional present, imperfect, and future tenses of Latin grammar. Of these three, only the present tense has a direct Indo-European morphological ancestor. The distinction between thematic and athematic stems, which was quite important in PIE, is evident only residually, since Latin has restructured all but a few exceptional verbs into the thematic group.

7.8.10.2.1. Morphological representatives of the present stem in Latin

Latin and the other Italic languages organize the verb into four major stem or conjugation types. These conjugations are distinguished by the theme vowel of the present stem, to which the infinitival ending *-re* is added, as in table 7.20.

The first conjugation *-ā-* class

The Latin first conjugation verbs, which are by far the most productive in the language, are based on several formations. The first is inherited root-class verbs ending in **-eh$_2$-* such as *stāre* 'to stand' (< **steh$_2$-*) and *fārī* 'to speak' (< **b^{h}eh$_2$-*). The second, much larger in number, are denominatives based on a PIE formation **-eh$_2$-i-o-* >**āiō* > **aiō*, eventually appearing in Greek as -άω, the marker of "contract verbs" such as τῑμῶ (τῑμάω) 'I honor' and νῑκῶ (νῑκάω) 'I conquer', and in Latin as *-ō*, reflecting the regular loss of intervocalic **-i-*. This is the background of verbs formed from common *a*-stem nouns to form transitives such as *dōnāre* 'to give as a present' (*dōnum*), *fugāre* 'to flee' (*fuga*), and *coronāre* 'to crown' (*corona*). Thus, *fugō* 'I flee' < **fugāō* < **fugā-i-ō*. A third, very common type of formation in the first conjugation are frequentatives based on the suffixation of *-tō*, *-sō*, *-ĭtō*, and *-titō*, all based on variant outcomes of the of participial **-to-* attached to the verb root. Thus, *iactāre* 'to toss about' (*iaciō*), *dictāre* 'to say often' (*dīcō*), *versāre* 'to

Table 7.21. Third conjugation inflectional types

	legō		*capiō*	
	Sg.	Pl.	Sg.	Pl.
Present indicative				
1st	legō	legimus	capiō	capimus
2nd	legis	legitis	capis	capitis
3rd	legit	legunt	capit	capiunt
Present subjunctive				
1st	legam	legāmus	capiam	capiāmus
2nd	legās	legātis	capiās	capiātis
3rd	legat	legant	capiat	capiant

turn about' (*vertō*). The frequentative *agitāre* 'to drive about' (*agō*) is based on a suffixation of *-itāre* directly to the present stem, and *cantitāre* 'to sing often' is actually a double frequentative built on the frequentative *cantāre* (*canō*).

The second conjugation *-ē-* class

The Latin second conjugation in *-ē-* includes a number of different verbal types. The first are root verbs characterized by **-eh$_1$-* such as *-plēre* 'to fill' (*compleō* 'I fill up', *impleō* 'I fill up') < **pleh$_1$-*; *nēre* 'to spin' < **sneh$_1$-*, cf. Latv. *snāju*, *snāt* 'to spin'; and possibly *dēlēre* 'to destroy'. Next are intransitive/statives, also marked by **-eh$_1$-*, such as *pendēre* 'to be suspended', *tacēre* 'to be silent', and *sedēre* 'to sit' (verbs such as *habēre* 'to have' and *vidēre* 'to see' are exceptionally transitive). There are also denominatives like those of the first conjugation such as *flōrēre* 'to bloom, flower' (*flōs*) and *prandēre* 'to take lunch' (*prandium*) which are built on the suffix **-eh$_1$-*, followed by the suffix **-ie-/ -io-*. These denominatives are paralleled by verbs such as Skt. *devayáti* 'X is pious' and *amitrayáti* 'X is hostile', from *devá-* and *mitrá-*, respectively, and also by Greek contract verbs such as φιλῶ 'I love' (φιλέω) < **φιλέ-i̯-ω*. The final verbal type represented in the Latin second conjugation are causative verbs such as *monēre* 'to warn' (cf. Skt. *mānáyati* 'X honors'), *torrēre* 'to make dry' (cf. Skt. causative *tarṣáyati* 'X causes thirst'), and *nocēre* 'to injure' (cf. *necō* 'I kill').

The third conjugation

The third conjugation comprises two morphological types, as well as a number of suffixal formations which have been inherited from PIE. The third conjugation verbs are divided into two categories according to the presence (*capiō*-type) or absence (*legō*-type) of the vowel *-i-* in the indicative (table 7.21). The distinction is neutralized in the infinitive, where **i* > *e* before *r* < **s*; cf. *cinis*, *cineris* 'ash'. Thus *cupiō* 'I wish' (*cupere*), *rapiō* 'I snatch' (*rapere*), but *carpō* 'I pluck' (*carpere*) and *regō* 'I rule' (*regere*). Despite the presence of the *-i-* linking them to the fourth conjugation, the ancient grammarians considered the *capiō*-type verbs to be part of the

third because of the infinitive form in *-ere* (cf. *legere*, *capere*), which was the basis of the ancient verbal classification.

The third conjugation *-e/o-* class

The simple thematic verbs of the *legō* type are directly inherited from the PIE **-e-* class of verbs, with typical inflectional formation in *-i-* (*legis*, *legit*, *legimus*). Although quite common in PIE and relatively numerous in Latin, the simple thematics were not as productive as the **-io-* stems of the *capiō* type. In fact, they constitute a closed class of verbal formations. Several verbs were apparently drawn into the thematic *legō* type as a result of phonological weakening, such as **uemh$_1$-* 'vomit' and **melh$_2$-* 'mill'. The phonological outcome of these laryngeal-final roots would be **voma-* and *mela-*, which, when in an inflected environment (e.g. 3rd sg. **vomat*), would develop to *vomit* by regular vowel weakening, leading to a reinterpretation of the stem class and producing the attested *vomō*, *vomere* (*vomimus* 'we vomit') and *molō*, *molere* (*molimus* 'we mill'). Apparently compounds based on zero grade of **d^{h}eh$_1$-* 'place, put' (e.g. *condimus* 'we put together') and **deh$_3$-* 'give' (e.g. *reddimus* 'we give back') also were drawn into this class.

Many verbal formations inherited from PIE appear in Latin in the third conjugation *legō* type. Reduplicating verbs such as *sistō* 'I place, stand' (cf. *stāre*) and *gignō* 'I beget' (cf. *gen-*) are representative. Also found in the third conjugation are a large number of nasal formations such as the infixed *-n-* found in *iungō* 'I join', *rumpō* 'I break', and *tangō* 'I touch'; suffixed *-n-* with "enlargements" such as *-u-* seen in *minuō* 'I make smaller' and *sternuō* 'I sneeze'; and suffixal *-ie/o-* seen in *solvō* 'I loosen' (< **se-lūo* < **se-leuH-io-*) and *volvō* 'I rotate' (< **uelu-io-*). There are a few other verbs in this class which end in laryngeals, e.g. *cernō* 'I sort' (< **kri-n-oh$_2$-*) and *spernō* 'I reject' (< **sper-n-H-*). The few Latin verbs which continue the PIE desiderative marker **-s-* are also in the third conjugation, e.g. *vīsō* 'I visit' (desiderative of **uid-* 'see'), as are inchoatives such as *crēscō* 'I increase' (**kreh$_1$-sk-*) and *poscō* 'I ask' (< **prk-sk-*).

The third and fourth conjugation *-i̯o-* class

The third conjugation *capiō*-type verbs are historically primary verbs with **-io-*, such as *rapiō* 'I seize' and *fugiō* 'I flee'. Verbs of the fourth conjugation fall into several easily recognizable groups. The most common are the inherited verbs ending in **-io-*, seen in *veniō* 'I come', *audiō* 'I hear', and *saliō* 'I leap'. Another group is made up of denominatives, parallel to those found in other conjugations, based on *i*-stem nouns, such as *fīniō* 'I finish' (*fīnis*), *tussiō* 'I cough' (*tussis*); on consonantal stems such as *custōdiō* 'I guard' (*custōd-*); and on some other **e/o-*stem nouns, such as *serviō* 'I serve' (*servus*) and *saeviō* 'I rage, am furious' (*saevus*).

The *capiō*-type verbs exhibit a combination of the *-ī-* seen in fourth conjugation verbs such as *audiō* 'I hear' (with prevocalic shortening of **ī*), inf. *audīre*, 1st pl. *audīmus*, with characteristic *ī*, and the *-e* type seen in third conjugation verbs like *legō* 'I gather', inf. *legere*, 1st pl. *legimus*, with *ĭ*. The historical grounds for the

alternation between *ĭ* of the *capiō* type and the *ī* of the *audiō* type is disputed. By some accounts the two have different origins, with the *capiō* type a relic class formed from **-io-*, and the fourth conjugation *audiō* type coming from **-i-io-*. The similarities between the two are then the result of predictable phonetic processes such as prevocalic shortening. But it is also possible that the two share a common beginning and that their distribution is to be found ultimately in Sievers' Law. Following Leumann (1977: 317–321) and Mester (1994: 24–27), it can be argued that the long/short vowel variation results from a general prosodic principle in Latin to select a short theme vowel (*capiō*-type) when the root syllable is light (σ̆ σ̆), and to select a long theme vowel (*audiō*-type) when the root syllable is heavy (σ̄ σ̆). Cf. *capimus* 'we take', *facimus* 'we do' vs. *audīmus* 'we hear', *sentīmus* 'we feel'. The pattern holds as well for sequences of two short syllables which group into a bimoraic foot, such as *aperīmus* 'we open', *reperīmus* 'we find' vs. *parimus* 'we bring forth'.

Verbs such as *venīre* 'to come', *salīre* 'to jump', and other fourth conjugation forms with light root syllable are exceptional, as is *sitīre* 'to thirst' and other denominals from **-i-io-*. For some reason these forms have escaped the prosodic target which would put them with the *capiō* verbs of the third conjugation. Troublesome doublets like *cupere/cupīre* 'to desire' are quite likely contaminations, hardly surprising given the close interactions of these paradigms.

As with iambic and cretic shortening, Latin evidences a tendency to attain the best syllable collocation available in the language. Matching the syllable weights of the contiguous syllables targets the preferred bimoraic syllable template of Latin but does not guarantee it in every instance. Nonetheless, the overwhelming number of fourth conjugation verbs seem to conform to the bimoraic pattern. Indeed, suffix selection in the perfective of these verbs also shows a strong preference for a bimoraic pattern. Cf. the following verbs which favor the *-s-* perfect instead of the one in *-v-/-u-*: *saepiō*, *saepsī* 'hedge in' (not **saepuī*), *sanciō*, *sānxī* 'ratify' (not **sāncuī*), *hauriō*, *hausī* 'draw' (not **hauruī*), and *sentiō*, *sēnsī* 'feel' (not **sēntuī*).

7.8.10.3. The formation of the aorist stem in PIE

In PIE there are three types of aorist (punctual) stems. The first of these, the root aorist, is most heavily represented in Sanskrit, though it is found in Greek and Armenian as well. Endings are added directly to the stem, without a specific suffix to mark the stem-class, as in Skt. *á-dhā-t* 'X placed', Gk. ἔ-θε-μεν 'we placed' (augment plus aorist stem **h_1e-d^heh_1-*), Skt. *á-śro-t* 'X heard' (augment plus aorist stem **h_1e-kleu-*). The second type, the thematic aorist, is formed from the zero grade of the root, suffixed with thematic endings, as seen in Skt. *á-vid-at* 'X saw' (augment plus aorist stem **h_1e-uid-*), Gk. ἦ-λυθ-ε 'X went' (augment plus aorist stem **h_1e-$h_1$lud^h-*). This type, which is best represented in Sanskrit and Greek, is sometimes reduplicated, e.g. Gk. ἔ(F)ειπον 'I spoke' < **ἔϜειkᵘον < **ἔϜευkᵘομ,

dissimilated from **ue-uk$^{\mu}$-*, zero grade of root**uek$^{\mu}$-* 'call'; cf. Skt. *ávocam*; also possibly Lat. *tetigī* 'I touched'. The final type is the sigmatic or *-s-* aorist, formed through the addition of the suffix **-s-* to the root in either lengthened or full grade. While best represented in Sanskrit, Greek, and Slavic, the sigmatic aorist appears occasionally in Latin perfects. Examples of this formation can be found in Gk. ἔ-δειξ-α 'I showed' (augment plus lengthened root plus *-s-* **(h$_1$e-)dēik-s-*), Lat. *dīx-ī* 'I said'; also Skt. *á-vāk-ṣ-am* 'I carried', Lat. *vēx-ī* (**(h$_1$e-)uēg^{h}-s-*).

Because Latin absorbed the functions of the aorist into the perfect, the remains of the PIE aorist system are restricted to a few relic forms and the fairly common perfect formation in *-s-*, seen above in *dīxī* and *vēxī*. These will be taken up again in the discussion of the perfect.

7.8.10.4. The formation of the perfect stem in PIE

In contrast to the present, the perfect stem in late PIE was not characterized by a suffix or series of suffixes. In Greek and Indo-Iranian, the perfect stem is often reduplicated through the copying and prefixation of the root-initial consonant followed by the vowel **e*: cf. Gk. λέ-λοιπ-α 'I left', Skt. *ca-kắr-a* 'I did'. Such reduplication, while evident in Latin, is less common in the perfect than are suffixed formations. The perfect stem is characterized by an original root vowel **o* in the singular and zero in the dual and plural. The **o* was in a regular ablaut relationship with present stem **e*. Person suffixes in the perfect are typically added directly to the stem.

7.8.10.5. The formation of the perfect stem in Latin

The Latin perfect stem continues the form and the functions of the late PIE perfect and aorist. Because of its hybrid origins, the perfect stems in Latin come in a variety of shapes and types. The most common is the perfect in *-v-/-u-*, which is an independent Latin formation, though remote PIE origins are possible. The remaining perfect structures have direct origins in either the PIE perfect or aorist.

Root formations

Perfects with lengthened root-vowel. One group of Latin perfects continues the PIE perfect or aorist with inherited length in the root vowel, a type also found in Germanic (though the similarity may be circumstantial). Included in this group are such perfects as *clēpimus* (*clepō*) 'we stole' (for the more familiar *clepsimus*)—cf. Goth. 1st pl. *hlēfum* 'we stole'; *vēnimus* (*veniō*) 'we came' (Goth. *qēmum*); and *sēdimus* (*sedeō*) 'we sat' (Goth *sētum*). Also in this category are such verbs as *cēpī* 'I took' (*capiō*), *fēcī* 'I did' (*faciō*), and *frēgī* 'I broke' (*frangō*), which rest on PIE aorists. A few of the Latin forms with lengthened perfects come from reduplicated forms with

initial laryngeal that have undergone secondary changes which obscure the reduplicating origins of the form. Here are included such verbs as *ēmī* 'I bought' (< **eomai* < **h₁e-h₁om-*), pres. *emō*; *ēdī* 'I ate' (< **eodai* < **h₁e-h₁od-*), pres. *edō*; and *ōdī* 'I hate' (< **h₃e-h₃od-*), cf. *odium*. In a few forms the long vowel of the perfect is the reflex of **oi*: cf. *vīdī* 'I saw' (Gk. οἶδα), *līquī* 'I left' (cf. Gk. λέ-λοιπα).

In a few verbs there has been a contraction of a syllable-initial glide with loss and subsequent lengthening: cf *cāvī* 'I was on guard' (*caveō*) from **kaua-uai* > **kaauai* > *cāvī*. Likewise *lāvī* 'I washed' (*lavō*), *vōvī* 'I vowed'. It has been claimed that this group may have served as the foundation of the *-v-/-u-* perfect, an unlikely analogy.

Finally, there are some verbs in Latin which have a short vowel in the present contrasting with a long vowel in the perfect which cannot be taken back to PIE by any phonetic process. Thus such verbs as *legō*, *lēgī* 'I gather, gathered' and *fodiō*, *fōdī* 'I dig, dug' can only be explained as formations based on an analogy with verbs like *sedeō*, *sēdī* 'I sit, sat' or *emō*, *ēmī* 'I buy, bought'.

Reduplicated perfects. Latin reduplicating verbs have their origins in the PIE reduplicating perfect. Reduplicated perfects in PIE were formed through the copying and prefixation of the root-initial consonant followed by the vowel **e*: cf. Gk. λέ-λοιπ-α 'I left', Skt. *ca-kắr-a* 'I did'. Latin verbs of the type represented by *meminī* 'I remember' (cf. Gk. μέμονα) and *tetinī* 'I held' (*teneō*), for the more familiar *tenuī*, continue this formation; cf. also *dedī* 'I gave' (*dō*), *stetī* 'I stood' (*stō*), *cecinī* 'I sang' (*canō*), *cecidī* 'I fell' (*cadō*), and *pepulī* 'I struck' (*pellō*). The vowel **e* is sometimes harmonized with the root vowel in analogically formed reduplicating verbs such as *cucurrī* 'I ran' (*currō*) and *spopondī* 'I promised' (*spondeō*), *bibī* 'I drank' (*bibō*), and *tutudī* 'I beat' (*tundō*). Vowel weakening and the accompanying syncope have caused many Latin verbs with inherited PIE reduplication to lose the vowel of the reduplicated syllable: cf. *rettulī* 'I carried back' for the expected **retetulī* and *occīdī* 'I killed' for the expected **obcecidī*. A further development along these lines is evident in such verbs as *convertī* (*convertō*) 'I turned around' (< **convevertī*) and *incīdī* (*caedō*) 'I cut open' (< **incecaidī*), in which the entire reduplicated syllable has been lost either by syncope or haplology.

Suffixed formations

There are two basic suffixal formations in Latin to indicate the perfective. The first, characterized by the morpheme *s*, continues the PIE **s* (sigmatic) aorist. (The other two aorists of IE date, namely the root aorists and the thematic aorists, are not systematically represented in Latin.) The second, the perfect in *-v-/-u-*, is a specific Latin formation. The characteristic *-v-/-u-* of this formation may be inherited from PIE, but if it is, it is of considerably changed function and distribution.

The perfect in -s-. The PIE sigmatic aorist is productively represented in Greek, Indo-Iranian, and Slavic. Most of the Latin verbs characterized by this formation appear to be inherited. Those examples of non-inherited *-s-* formations (e.g. *sūmpsī* 'I took up') can be explained as prosodic repairs (see below) or analogies. A few

examples of sigmatic perfects are Skt. *ávākṣam* 'I drove', OCS *vĕsŭ*, Lat. *vēxī* (< **(h₁e-)uēg^h-s-* 'drove'); Av. *dōiš-* 'show', Gk. ἔδειξα 'I pointed out', Lat. *dīxī* 'I said' (< **(h₁e-)dēik-s-* 'pointed out'). In Latin the inherited sigmatic aorist occurs only with roots which end in a stop, a nasal, or *s*, often with lengthening of the root vowel (cf. *regō* 'I rule', *rēxī* 'I ruled'). Because of the general phonetic effect of *s* on surrounding sounds, there are often considerable but regular deformations which take place in roots suffixed with this morpheme, such as the epenthesis of *-p-* in perf. *sūmpsī* 'I took up' (*sūmō*) or the loss of the final dental in perfects like *clausī* 'I closed' (*claudō*).

The remoter origins of the **-s-* are uncertain, though it has been suggested (see Brugmann 1916: 407, Pedersen 1921, Benveniste 1922, Pisani 1931) that it shares its beginnings with future formations in **-s-*. The exact point of contact is difficult to ascertain. It may be that Lithuanian 3rd fut. forms such as *duõs* 'will give' are the injunctive of an aorist which is identical with Old Church Slavic 3rd sg. aorist *da* 'gave.' Alternatively, it may be in their use in general (gnomic) expressions (e.g. the future in Lithuanian and Latin, the aorist in Greek) such as 'whoever steals won't become rich'. Pedersen claims that the relationship between the future and the *-s-* aorist was the same as the relationship between the present and the preterite of an imperfective verb.

Examples of the *-s-* formation follow.

a. Roots ending in a stop (including nasals): *dīxī* 'I said' (*dīcō*); *clēpsī* 'I stole' (*clepō*); *nūpsī* 'I married' (*nūbō*); *scrīpsī* 'I wrote' (*scrībō*); *mānsī* 'I remained' (*maneō*). In these verbs the short root vowels are lengthened with the suffixation of *-s-*. When the final stop of the root is preceded by another consonant, the sequence of three consonants typically dissimilates, with loss of the original root-final consonant: cf. *torsī* 'I twisted' (*torqueō*); *flexī* 'I bent' (*flectō*); *pexī* 'I combed' (*pectō*); *ursī* 'I urged' (*urgeō*); and *plexī* 'I folded' (*plectō*). In these verbs the root vowel remains short in the perfect. It is common for nasal-infix verbs in which the nasal has been extended to the perfective to follow the *-s-* formation: cf. *iungō* 'I join', perf. *iūnxī*; *lingō* 'I lick', perf. *līnxī*; and *pangō* 'I fasten', perf. *pānxī* (beside *pepigī*). Similarly, compounds, even when their simple counterparts take some sort of root formation, are often found with the *-s-* suffix: cf. *expellō* 'I drive out', perf. *expulsī* vs. *pellō* 'I strike', perf. *pepulī*; and *sūmō* 'I take up', perf. *sūmpsī* vs. *emō* 'I buy', perf. *ēmī*. Finally, roots which end in a dental stop such as *claudō* 'I close', *sentiō* 'I feel', and *suādeō* 'I persuade' often form their perfects in *-s-*, with regular phonetic changes converting the *-ds-* or *-ts-* to *-ss-*, which is further reduced to *-s-* after consonants or heavy syllables: cf. *clausī*, *sēnsī*, *suāsī* vs. *iussī* 'I ordered' (< **ieud^h-s-* though the PIE status of this root is uncertain).

b. Roots ending in *-r-* derived from **-s-*, such as *ger-ō* 'I do' (< **ges-ō*, cf. perf. part. *ges-tus*), *ūr-ō* 'I burn' (< **ūs-ō*, cf. perf. part. *ustus*), and *haur-iō* 'I draw

up' (< **haus-iō*, cf. perf. part. *haus-tus*) often show perfects formed with *-s-*, which are then subject to the same phonetic simplifications as those ending in a dental, viz. *gessī* and *ussī* (after a light syllable) and *hausī* < **Heus-s-* (after a heavy syllable).

The perfect in -v-/-u-. The peculiarly Latin perfect morpheme *-v-/-u-* appears in a great number of verbs. It is the most productive marker of the perfect in the language, applying generally to verbs with roots ending in a long vowel, i.e. almost all verbs of the first (*amāvī* 'I loved') and fourth (*audīvī* 'I heard') conjugations, and to a good number of those from the second (*monuī* 'I warned').

Much has been written about the origins of the Latin *-v-/-u-* perfect (see Rix 1992b). Basically, the arguments fall into two broad categories. The first states that the morpheme is to be explained by a series of analogies from within Latin, while the second states that the origins of the *-v-/-u-* are to be found in PIE. Arguments for Latin origins of the *-v-/-u-* rely on analogical extensions of existing patterns from salient verbs. It is claimed by some, for example, that verbs with roots ending in *-v-/-u-* such as *moveō* 'I move', *faveō* 'I favor', and *lavō* 'I wash' served as strong analogical forces in establishing the *-v-/-u-* element as the marker of the perfect. The analogy is purportedly based on the regular perfect root formations *mōvī*, *fāvī*, and *lāvī*, from which the *-v-/-u-* was reanalyzed as the marker of the perfect. A second Latin-internal explanation calls for the analogical extension of the pattern of the perfect of the verb *esse* 'to be', namely *fuī* 'I was' (< **fū-ai*). Adherents of this position point to the apparent pronunciation of *fuī* as [fuu̯ī], in which the final **[-u̯ī]* became reinterpreted as the accessory marker of the perfect.

Arguments for a PIE origin for the morpheme *-v-/-u-* are of two types. One line of analysis points to residual parallels to the *-v-/-u-* in certain related constructions in other IE languages (a–c below), while the other treats the *-v-/-u-* morpheme as a normal phonetic reflex of a PIE sound (d below). It must be noted, however, that the morphological parallels are never as systematic as the *-v-/-u-* in Latin. Usually they are found in only a few persons, or with restricted morphological distribution. Among the possible traces found are the following.

a. There is a handful of forms in other Italic and some Celtic languages in which *v/u* seems to be some sort of past tense marker: cf. Umbr. *subocau*, *subocauu* 'I invoked'? (= Lat. *subvocāvī*), Gaul. *ieuru* 'X consecrated'? (= Lat. *cōnsecrāvit*).
b. There are some languages (Armenian, Tocharian, and possibly Hittite) with a morpheme *w/u* in certain persons of the perfect.
c. In Sanskrit there are some reduplicated perfects such as *dadāú* 'I, X gave' and *jajñāú* 'I, X knew' in which the 1st and 3rd sg. are marked by a morpheme *-u*. While this may appear at first to be a poor fit with something as systematic as the Latin *-v-/-u-*, it gains currency in light of short forms of the Latin perfect which have traditionally been explained as contractions of the full forms with *-v-/-u-*. Attested illustrative paradigms are the singular with

audiō 'I hear' and the plural with *(g)nōscō* 'I know'.

audīvī	nōmus (nōvimus)
audīstī (audīvistī)	nōstis (nōvistis)
audīvit	nōrunt (nōvērunt)

If the shorter forms are considered not as contractions of the fuller forms but as retentions of an earlier distribution, in which the *v/u* characterized only the first and third persons of the singular, it becomes possible to think of the Sanskrit parallels (and perhaps those of Armenian, Tocharian, and possibly Hittite) as reflecting a commonly inherited morpheme from PIE. The remainder of the argument has the *v/u* spreading analogically through all persons of the Latin verb and eventually becoming morphologized as the marker of the perfect.

d. The second broad possibility of a PIE beginning for the *-v-/-u-* perfect rests on a proposal by Martinet (1956) involving roots ending in $*h_3$. Martinet claims that $*h_3$ had a labiovelar articulation (= $*h_2^{\underline{u}}$), and that the labial part of the labiovelar complex was left behind before vowels when the laryngeal itself disappeared. Thus such perfect forms as *strāvī* (pres. *sternō* 'I stretch out') would derive from something like $*streh_3$-; *flāvī* (pres. *flō* 'I blow') would derive from $*b^hleh_1$-, and so on. The *[u̯] element then spreads analogically to verbs ending in $*eh_1$- such as *plēvī* (pres. *pleō* 'I fill'), and from there to other verbs ending in a long vowel.

Whatever its remoter origins, the *-v-/-u-* perfect is one of the most characteristic of all Latin morphological constructions. Its spread throughout the system is remarkable, serving as the primary marker of the opposition between the imperfective and the perfective in the synchronic Latin verb.

The distribution of the three dominant perfect formations (*-v-/-u-* perfect, *-s-* perfect, and reduplicating perfect) has been examined by Mester (1994). Second conjugation verbs with stem vowel *-ē-* such as *monēre* 'to warn', perf. *monuī*; *docēre* 'to teach', perf. *docuī*; *placēre* 'to please', perf. *placuī*; *nocēre* 'to harm', perf. *nocuī*; *habēre* 'to have', perf. *habuī*; *olēre* 'to smell', perf. *oluī*; and many others typically select the perfect in *-v-/-u-*.

root:	*mon-*
present stem:	*mon-ē*
perfect stem:	*mon-ŭ-*
1st sg. perf.	*mon-ŭ-ī*

Mester contrasts the formation of these perfects in *-v/-u-* with *-s-* perfects like *augēre* 'to increase', perf. *auxī*; *algēre* 'to be cold', perf. *alsī*; *lūgēre* 'to mourn', perf. *lūxī*; *suādēre* 'to advise', perf. *suāsī*; and *rīdēre* 'to laugh', perf. *rīsī*; as well as

with reduplicating perfects like *spondēre* 'to vow', perf. *spopondī*; *mordēre* 'to bite', perf. *momordī*; *tondēre* 'to shear', perf. *totondī*.

root	*aug-*	root	*spond-*
present stem	*aug-ē*	present stem	*spond-ē-*
perfect stem	*auk-s-*	perfect stem	*spopond-*
1st sg. perf.	*auk-s-ī*	1st sg. perf.	*spopond-ī*

Mester notes that the non-canonical *-s-* and reduplicated perfects occur only when the canonical default formation in *-v-/-u-* would result in a phonological configuration in which a light syllable would be surrounded by two heavy syllables. This configuration creates a non-preferred syllable pattern which is "corrected" through syncopation of the offending syllable (i.e. σ̄ σ̆ σ̄ → σ̄ σ̄). Canonical perfects like *monuī* 'I warned', *tacuī* 'I was silent', and *aboluī* 'I abolished' contain a preferred syllable pattern of σ̆ σ̆ σ̄, while the non-occurring forms **aug-u-ī*, **alg-u-ī*, **mord-u-ī*, and **spond-u-ī* would be made up of a light syllable surrounded by two heavy syllables, i.e. σ̄ σ̆ σ̄, a non-preferred cretic structure. Cf. also *lūcēre* 'to be light', perf. *lūxī* (not **lūcuī*); *suādēre* 'to advise', perf. *suāsī* (not **suāduī*); *tondēre* 'to shear', perf. *totondī* (not **tonduī*); and *pendēre* 'to hang', perf. *pependī* (not **penduī*). To these can be added examples of perfects in *ī* with lengthening of the stem vowel, for example *cavēre* 'to take care', perf. *cāvī* (not **cāvuī*, though this could be due to the avoidance of the *-vu-* sequence) and *vidēre* 'to see', perf. *vīdī* (not **vīduī*). In all these cases prosodically unacceptable outcomes of a word-formation process result in lexical selection of the *-s-* perfect (the more common one), the reduplicated perfect, or the vowel-lengthened perfect as a means of repairing the structures. The selection of the *-s-* perfect is all the more significant because this formation is characteristic not of second conjugation verbs, but rather of those of the third conjugation.

As with other prosodically based repairs, there are exceptions, some of which may be governed by other phonological or semantic factors. For example, the canonical perfect occurs in the following verbs, despite the disfavored syllable pattern: *arcēre* 'to keep off', perf. *arcuī* (not **arxī*); *flōrēre* 'to bloom', perf. *flōruī* (not **flōrsī*); *horrēre* 'to bristle', perf. *horruī* (not **horsī*); *pallēre* 'to be pale', perf. *palluī* (not **pallsī*); *splendēre* 'to gleam', perf. *splenduī* (not **splēnsī*); *torpēre* 'to be dull', perf. *torpuī* (not **torpsī*); *cēnsēre* 'to estimate', perf. *cēnsuī* (not **cēnsī*); or *torrēre* 'to bake', perf. *torruī* (not **torsī*). But the picture may be more complicated. Verbs like *torpēre* and *torrēre* are older causatives and would not be expected to carry aorist inflection. Also, sequences such as *-rs-* in **horsī* and **torsī* are also disfavored. Even the secure forms present something of an oversimplification. Throughout the paradigm of the perfective, there are only two instances where the vowel of the ending which occurs next to the perfect stem is long, namely the first person singular *-ī* (*amāvī* 'I have loved') and the third person plural *-ērunt* of the perfect tense

(*rēxērunt* 'they have ruled'). In all other instances, the vowel is short (e.g. *amāvistis* 'you (pl.) have loved', *rēximus* 'we have ruled', etc.). Furthermore, the first person singular provides the only cretic over the final three syllables. Since it is established that prosodic rules can be overridden by analogical and morphological factors, as well as by frequency of occurrence, the morphological selection of an alternative perfect formation in some verbs may very well be due to other factors.

7.8.11. Personal endings

The PIE verb is characterized by a set of personal endings which carry information about person (first, second, third), number (singular, plural, dual), voice (active and middle), tense/aspect (the perfect endings differ from those of the present and aorist), and occasionally mood (there are a few endings which are peculiar to the imperative). Except in the perfect, the personal endings are made up of two closely related sets of endings called "primary" and "secondary" which appear to be linked with the notion of "actualized" (primary) and "non-actualized" (secondary) verbal concepts. In general, the present indicative is characterized by the primary endings, while the aorist indicative and the subjunctive are characterized by the secondary endings. The athematic endings are attached directly to the verbal root, while the thematic endings are joined to the root with the vowel **e/o* (table 7.22). This is a formal, not a functional distinction.

No IE language preserves the PIE categories intact. Each has reshaped and reanalyzed the verbal system in such a way that many of the recoverable distinctions, once of paramount significance in the protolanguage, are merged, eliminated, or changed in such a way as to appear trivial. A good case in point is the distinction between PIE primary and secondary endings as they appear in Latin. With only a few recoverable exceptions, Latin has eliminated the PIE primary endings and has merged the two series together. The same pattern of merger and simplification can be seen in the Latin treatment of the thematic/athematic distinction, with Latin favoring thematic verbal structures.

The endings just outlined are found in Latin in the present, imperfect, and future active indicative, in the pluperfect and future perfect, and in all tenses of the subjunctive. Not covered by these endings are the perfect active indicative, the middle/passive endings of both the indicative and the subjunctive, and the endings of the imperative.

Table 7.22. The personal endings of the present and aorist active

		PIE		Latin[a]	Greek	Skt.	Hittite
Athematic							
Primary							
1 sg.	-mi	$h_1$esmi	'I am'	sum	εἰμί	ásmi	ešmi
2 sg.	-si	$h_1$essi ($h_1$esi)	'you are'	es(s)	εἶ(ς)	ási	ešši
3 sg.	-ti	$h_1$esti	'X is'	est	ἐστί	ásti	ešzi
1 pl.	-mes/-mos	$h_1$smes/$h_1$smos	'we are'	sumus	ἐσμέν	smás	
2 pl.	-te	$h_1$ste	'you are'	estis	ἐστέ	sthá	
3 pl.	-enti/-onti	$h_1$senti/$h_1$sonti	'they are'	sunt	εἰσί	sánti	ašanzi
Secondary[b]							
1 sg.	-m	$h_1$esm	'I was'		ἦ(α), ἦν	ásam	
2 sg.	-s	$h_1$es	'you were'		ἦσθα	ás, ásīs	
3 sg.	-t	$h_1$est	'X was'		ἦν	ás, ásīt	
1 pl.	-me	$h_1$esme	'we were'		ἦμεν	ásma	
2 pl.	-te	$h_1$este	'you were'		ἦστε, ἦτε	ásta	
3 pl.	-nt/-ent	$h_1$esent	'they were'		ἦσαν	ásan	
Thematic							
Primary							
1 sg.	-oh$_2$	b^{h}eroh$_2$	'I carry'	regō[c]	φέρω	bhárāmi	
2 sg.	-esi	b^{h}eresi	'you carry'	regis	φέρεις	bhárasi	
3 sg.	-eti/-ei	b^{h}ereti/b^{h}erei	'X carries'	regit	φέρει	bhárati	
1 pl.	-omos	b^{h}eromos	'we carry'	regimus	φέρομεν	bhárāmas	
2 pl.	-ete	b^{h}erete	'you carry'	regitis	φέρετε	bháratha	
3 pl.	-onti	b^{h}eronti	'they carry'	regunt	φέρουσι	bháranti	
Secondary[d]							
1 sg.	-om	(h_1e)b^{h}erom	'I used to carry'	ferēbam	ἔφερον	ábharam	
2 sg.	-es	(h_1e)b^{h}eres	'you used to c.'	ferēbās	ἔφερες	ábharas	
3 sg.	-et/-e	(h_1e)b^{h}eret/ (h_1e)b^{h}ere	'X used to carry'	ferēbat	ἔφερε	ábharat	
1 pl.	-ome	(h_1e)b^{h}erome	'we used to c.'	ferēbāmus	ἐφέρομεν	ábharāma	
2 pl.	-ete	(h_1e)b^{h}erete	'you used to c.'	ferēbātis	ἐφέρετε	ábharata	
3 pl.	-ont	(h_1e)b^{h}eront	'they used to c.'	ferēbant	ἔφερον	ábharan	

a It is generally held that Latin continues the PIE primary endings in *sum, es, est* 'I am, you are, X is', etc., and the secondary endings elsewhere, as in *eram, erās, erat* 'I was, you were, X was', etc. But in fact, it is virtually impossible to distinguish primary from secondary in Latin. They may all be secondary in origin, and the Lat. *sum* has been analyzed as the most archaic member of this set. The evidence of Garigliano ESOM (chap. 5) supports the primary endings as original.

b There is no historical relationship between the Greek and Sanskrit imperfect tense forms cited here and the Latin imperfect forms *eram, erās, erat, erāmus, erātis, erant.*

c Latin *ferō* 'I carry' is exceptionally athematic in several persons; the verb *regō* 'I rule' is substituted.

d As noted, Greek and Sanskrit (also Armenian and Phrygian) show the augment **h$_1$e-*, while Latin and the other IE languages do not. The augment is represented as an optional element here.

7.8.12. The development of the PIE endings of the present and aorist into Latin

7.8.12.1. First singular

The standard 1st sg. indicative ending *-ō* (*amō* 'I love', *ferō* 'I carry', *amābō* 'I will love', etc.) continues the PIE primary thematic ending **-oh₂* (cf. Gk. φέρω 'I carry'), added to the theme vowel *-i-* (e.g. **amā-i-ō*). The primary athematic ending **-mi* (cf. Gk. τίθημι 'I place', Skt. *dádhāmi*) may be found only in the Latin form *sum* 'I am' (< **so-mi* < **hₗes-mi*; cf. Skt. *ásmi*, Gk. εἰμί), and perhaps in *inquam* 'I say'. However, as is noted in note a to table 7.22, it is possible that all Latin endings are secondary in origin and that the ancestor of *sum* is properly **hₗes-o-m*. All other first singular forms in Latin ending in *-m*, such as the imperfect *amābam* 'I was loving', *eram* 'I was', and the various subjunctives such as *amem* 'I might love', *amārem* 'I should love', *amāverim* 'I may have loved', and *amāvissem* 'I should have loved' are likely from the secondary athematic ending **-m*.

7.8.12.2. Second singular

The primary PIE athematic ending **-si* (cf. **hₗessi* 'you are'; Lat. *es(s)*, Gk. ἐσ(σ), Skt. *ási*, with obligatory simplification of the geminate **-ss-*) is the most likely source of the typical Latin 2nd sg. ending *-s* (*amās* 'you love', *monēs* 'you warn'), with loss of **hₗ* and final **-i* (as in 1st sg. *-m* from **-mi*). The source of Lat. *-s* in the subjunctive (e.g. *amēs* 'you might love') is the secondary athematic **-s*.

7.8.12.3. Third singular

Old Latin has a few examples of final *-d*, such as FECED (=*fēcit*) 'X did' and SIED (=*siet*) 'let X be' on the Duenos inscription, and a few other epigraphical examples. Oscan shows *-d* (cf. **fakiiad** 'let X perform' = Umbr. **façia** = Lat. *faciat*), as does Faliscan (cf. **doviad** 'let X give' = Lat. *det* and **fifiked** 'X fashioned' = Lat. *fīnxit*). The regular Latin ending is *-t* (cf. *amat* 'X loves', etc.). It appears that the final *-d*'s in Latin represent the secondary ending **-t*, while the normal Latin ending *-t* stems from the PIE primary athematic ending **-ti*, with regular loss of the final **-i*. This distinction is eventually neutralized across the language, and the secondary **-t* (> Lat. *-d*) is remade as *-t* even in the subjunctive (cf. *amet* 'X might love'). The phonetic development of **-t* to *-d* is also consistent for nominal and pronominal endings in **-t*, such as the ablative singular, which develop into Lat. *-d*.

7.8.12.4. First plural

The Latin ending *-mus* (*amāmus* 'we love', etc.) continues the PIE primary athe-

matic ending **-mos* (cf. Skt. (unchanged form) *dadhmás* 'we place'). This form displaces the secondary ending **-me* in the subjunctive (cf. *amēmus* 'we might love').

7.8.12.5. Second plural

The Latin ending *-tis* (*amātis* 'you love', etc.) is from earlier **-te*. The final *-s* of *-tis* is not of PIE origin; it has no parallels in other IE languages (cf. Skt. *dhatthá* 'you place', Gk. τίθετε). Either it is an old dual (cf. Skt. (unchanged form) *bhárathas* 'you two are carrying') or, more likely, it is founded on some analogy of the 2nd sg. *-s* or the 1st pl. *-mus*. The bare 2nd pl. ending *-te* (< PIE secondary thematic **-te*) on which *-tis* is based is clearly represented in Latin imperative forms such as *ferte* 'carry' (cf. Gk. φέρετε, Skt. *bhárata*). The subjunctive continues the same ending as the indicative (cf. *amētis* 'you might love').

7.8.12.6. Third plural

The typical Latin 3rd pl. endings *-nt* (cf. *amant* 'they love') and *-unt* (e.g. *ferunt* 'they carry') < OLat. *-ont* (cf. CONSENTIONT 'they agree', VEIVONT 'they live') are probably derived from the PIE primary ending **-enti/-onti*. There is a disputed form TREMONTI 'they shake' in the *Carmen Saliare* which may support this reconstruction. Alternatively, *-nt* and *-unt* could be from the secondary ending **-nt/-ent*. While the Latin data are ambiguous, Oscan–Umbrian reflects the primary/secondary split in its reflexes of these two categories: the primary ending is reflected as *-(n)t* (cf. Osc. **sent** 'they are', Umbr. *sent*), while the secondary endings are reflected in the ending *-ns* (cf. Umbr. *sins* 'they shall be' = Lat. *sint*, Osc. *deicans* 'let them pronounce' = Lat. *dīcant*). Oscan–Umbrian final *-ns* may reflect **-nt* > *-ns*, or perhaps an analogical restructuring in which the final *t* of **-nt* is lost and the *s* is added from the plurals of *n*-stem nouns such as Osc. **humuns** (= Lat. *hominēs*) 'men', in much the same way that the Latin nominative/vocative plural **-ōs* was replaced by the demonstrative pronominal ending **-oi*. The Latin subjunctive forms (e.g. *ament* 'they might love') continue the same ending **-nt*.

7.8.13. The endings of the perfect in PIE

The PIE perfect was probably originally stative and intransitive. As such it had neither tense nor voice and was limited to roots which describe states, not actions, such as 'be dead' or 'know'. Perfect forms in classical PIE, which are reconstructed in large part on the basis of the Sanskrit (and to a lesser extent Greek and even Tocharian) evidence, show no distinction between primary and secondary endings or between thematic and athematic forms. As a rule, the perfect became a tense mark-

Table 7.23. The personal endings of the PIE perfect active

				Latin	Greek	Sanskrit
1st sg.	-h_2e	uoidh$_2$e	'I know'	vīdī	οἶδα	véda
2nd sg.	-th$_2$e	uoidth$_2$e	'you know'	vīdistī	οἶσθα	véttha
3rd sg.	-e	uoide	'X knows'	vīdit	οἶδε	véda
1st pl.	-me	uidme	'we know'	vīdimus	ἴδμεν (Hom.)	vidmá
2nd pl.	-(h$_1$)e	uid(h$_1$)e	'you know'	vīdistis	ἴστε	vidá
3rd pl.	-r/-ēr	uidr/uoidēr	'they know'	vīdēre, vīdērunt	ἴσᾶσι	vidúḥ (unchanged form vidúr)

ing past time in the later IE languages. Generally speaking, the distinctively perfect endings are added directly to the root, which is characterized by frequent reduplication (less so in Latin than in other IE languages) and by **e/o* ablaut changes (table 7.23). There has been a good deal of restructuring in the perfect of various IE languages to refashion the verbal endings in a way similar to those of the present and aorist, especially in the plural. Latin has modified and reshaped the inherited perfect in fairly drastic ways.

7.8.14. The development of the personal endings of the perfect into Latin

7.8.14.1. First singular

The Latin 1st sg. ending *-ī* (*vīdī* 'I saw') is apparently derived from an earlier *-ei*, which is attested in some epigraphical material such as FECEI 'I did' (= *fēcī*) and REDIDEI 'I restored' (= *reddidī*). This ending *-ei* may be derived from an earlier **-h$_2$e-* followed by the same *-i* (originally a deictic particle) which is found in the primary athematic endings **-mi*, **-si*, **-ti*, etc. By this account *-ī* < *-ei* < **-a-i* < **h$_2$e-i*.

7.8.14.2. Second singular

The PIE 2nd sg. ending is uncertain, with both **-te* and **-th$_2$e* defensible as reconstructions. In any case the Latin 2nd sg. ending *-istī* (*vīdistī* 'you saw') is a composite of the old preterite suffix *-is-* (also found in the 2nd pl. *vīd-is-tis*) and the personal ending *-tī*. The ending *-tī* is based on the PIE 2nd sg. **-th$_2$e* or **-te* followed by the same **-i* found in the 1st person, viz. **-mi*, **-si*, etc. By this account, *-istī* derives from **-is-ta-i* < **-is-th$_2$e-i*. Winter (1984: 229) has shown that the Tocharian 2nd and 3rd sg. preterite forms in *-s-* (e.g. Toch. B *prekasta* 'you asked', *preksa* 'X asked') parallel Hittite past tenses of the *-ḫḫi* conjugation (e.g. *memišta*, *memaš* 'X said'). If, as is often claimed, the Hittite *-ḫḫi* conjugation and the general

IE perfect paradigm are of a common origin, then it may be possible to connect the Lat. 2nd sg. *-istī* ending with the Tocharian and Hittite evidence and take it all back to a PIE perfect, thereby unifying the origins of the endings of the Latin perfect. The **-is-* is sometimes connected with the *s*-aorist, though there are difficulties, and it is safer to label it simply as a marker of the preterite.

7.8.14.3. Third singular

The Latin 3rd sg. *-it* (*vīdit* 'X saw') has several possible sources. Early inscriptional evidence (e.g. FECED 'X made') and the evidence of Oscan–Umbrian (cf. Osc. **deded** 'X gave') suggests that the original ending **-e* (cf. Gk. οἶδε 'X knows', Skt. *véda*) was supplemented in Proto-Italic by the secondary ending **-t* from the present. The ending attested as Latin *-d* was eventually generalized as *-t* in Latin, resulting in Old Latin forms like DEDET 'X gave'. The possibility also exists that the final *-it* results from a diphthong *-ei* followed by the primary ending **-ti*, recoverable from inscriptional FVVEIT 'X was' (= *fuit*) and REDIEIT 'X restored' (= *rediit*). Under this analysis, **-eiti* > *-īt* (attested in Plautus) > *-it*.

7.8.14.4. First plural

The ending *-imus*, *-imos* (*vīdimus* 'we saw') is the same first plural ending found throughout the imperfective, having replaced PIE **-me* and spread analogically throughout the verbal paradigm. The vowel *-i-* has several possible sources. It may be anaptytic, but a more likely explanation is that it is the weakened form of a former thematic **e/o*. The location of this vowel *-i-* in the first plural balances this form with all other persons of the perfect except the 3rd plural.

7.8.14.5. Second plural

The ending *-tis* of the 2nd pl. (*vīdistis* 'you (pl.) saw') is the same ending found in the Latin imperfective, supplemented by the old preterite suffix **-is-* found in the 2nd sg. (*vīdistī*).

7.8.14.6. Third plural

The 3rd pl. ending in Latin has three shapes: the most frequent is the form *-ērunt*, with an alternate form *-erunt* (*vīdērunt*, *vīderunt* 'they saw'). But the oldest inherited form is *-ēre* (*vīdēre*), which has a correspondence in Sanskrit (*vidúr* (unchanged form) 'they knew'), Hittite (*ešer* 'X was'), and Tocharian (Toch. B *kautāre* 'X cut'). This ending appears to derive from **-ēr* followed by the primary particle **i*, though

Table 7.24. The personal endings of the PIE middle

		Latin	Greek	Sanskrit
Primary		(sequor 'I follow')	(ἕπομαι 'I follow')	(sac- 'accompany')
1st sg.	-$h_2$or	sequor	ἕπομαι	sáce
2nd sg.	-th_2or	sequeris	ἕπει/ἕπῃ	sácase
3rd sg.	-or/-tor	sequitur	ἕπεται	sácate
1st pl.	-mosd^hh_2	sequimur	ἑπόμεθα	sácāmahe
2nd pl.	-d^huo	sequimini	ἕπεσθε	sácadhve
3rd pl.	-ntor	sequuntur	ἕπονται	sácante
Secondary			(ἧμαι 'to sit')	(ās- 'to sit')
1st sg.	-h_2o		ἧμην	ási
2nd sg.	-th_2o		ἧσο	ásthās
3rd sg.	-o/-to		ἧστο	ásta
1st pl.	-med$^h h_2$		ἥμεθα	ásmahi
2nd pl.	-d^huo		ἧσθε	ádhvam
3rd pl.	-(ĕ)ro/ -nto		εἵατο (Hom.)	ásata

there have been proposals to derive it from the secondary middle marker *-*ēro*, an unlikely development. The alternate forms *-ērunt*/*-erunt* admit of several possible explanations. The strongest explanation is that *-ĕrunt* results from the combination of *-*is*- with the ending *-ont*; another possibility is that there is a contamination of *-*ēr-i* and *-*er-ont* (< **is-ont*) > *-erunt*. The early attestation of DEDRO 'they gave' (= DEDERONT, CLat. *dedērunt*), with the short vowel guaranteed by the syncope, indicates that the *-erunt* variant might be the older and that *-ērunt* might be a later, analogical development. But the entire picture remains cloudy.

7.8.15. The development of the personal endings of the PIE middle into Latin

In the majority of the IE languages, the endings which reflect the PIE middle are innovative restructured forms of active endings or are specific internal developments. Latin and the other IE languages which are characterized by the middle marker *-*r* appear to be more faithful to the original PIE system than those in which the endings *-*mai*, *-*sai*, and *-*tai* are typical (table 7.24). Specifically, Italic and Celtic (cf. the impersonal passive of OIr. *berir* 'one carries', Lat. *fertur*); Hittite and Tocharian, though with different distribution from the Italic and Celtic; and Phrygian and Armenian, though only in traces, all show continuation of this element. Before the *-*r* was found to be present in Hittite and Tocharian, it was originally thought to be a common innovation in Italic and Celtic, with an uncertain connection to the Phrygian and Armenian forms. This led to considerable debate over its origins and spread. But the presence of the *-r* in Hittite and Tocharian seems to guar-

antee its antiquity, providing clear evidence of a PIE foundation. Its geographical distribution among Eastern and Western IE languages strengthens its claim to an archaic status. While its original function and distribution in PIE remain unclear, as are the various mechanisms by which it was extended throughout the imperfective system of the passive/middle/deponent paradigms of Latin (there is no trace of it in the Latin passive perfective, which is a vivid innovation), the PIE perfect seems a good place to search for answers.[12] It will be recalled that the reconstructed 3rd sg. perfect ending is **-ri-ēr*, and that there is an intimate historical connection between the perfect and the middle in the evolution of the PIE tense/aspect and voice systems (Winter 1984). It is reasonable to assume that this marker was taken over into the middle voice, spreading from the third person in a variety of unknown ways. It is possible, even likely, that some of the *-r*'s found in various persons of the Latin *-r*-form verbs have different origins, even though they form a coherent set synchronically in which, generally speaking, the *-r* is added to the active to produce the passive.

The **-r* marker is not found at all in the middles of Greek or Sanskrit, which appear to have innovated considerably in the development of these verb forms, building primarily on the active endings (table 7.24). See Sihler (1995: 472–480).

7.8.15.1. First singular

The forms *amor* 'I am loved', *sequor* 'I follow', etc. show the morpheme *-r* added directly to the active form (e.g. *amō*). The 1st sg. *-r* is a direct descendant of the primary ending **-$h_2$or*, with the thematic vowel *o*. If the middle **-r* is a late PIE development from an earlier perfect (and still earlier non-active), it must have been established as the characteristic marker of the middle by this time. If, on the other (less likely) hand, the PIE primary endings as reconstructed, namely with **-r* in most persons, did not serve as the basis of the Latin first person, then it must be formed on analogy with the 3rd sg. *amātur*.

7.8.15.2. Second singular

The ending *-re* forms the basis of the familiar Latin 2nd person form *-ris* seen in *amāris* 'you are loved', *sequeris* 'you follow' through the analogical extension of the ending of the 2nd sg. active form (*amā-s*) into the *-r* form, with accompanying weakening of *e* to *i*: **sequ-ese* > **sequ-ere-s* > *sequeris*. It does not continue either of the PIE endings **-th_2o* or **-th_2or*.

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12 Greenberg (1991: 135–138) argues that the PIE **-r* passive and middle is descended from a third person plural subject suffix.

7.8.15.3. First plural

Since it is impossible to derive the Latin ending *-mur* from either the PIE primary ending **-mosd^{h}h$_2$* or the secondary ending **-med^{h}h$_2$*, some analogical mechanism must be found to account for its shape. In the case of the 1st pl. forms like *amāmur* 'we are loved' (active *amāmus*), *sequimur* 'we follow', these clearly result from an analogical extension of the *-r* of the 3rd pl. *amantur* 'they are loved', *sequuntur* 'they follow'.

7.8.15.4. Second plural

The Latin 2nd pl. ending *-minī* (*amāminī* 'you are loved', *sequiminī* 'you follow') is of completely different origin from the *-r* endings. In addition to its use with passive, middle, and deponent verbs, both indicative and subjunctive, *-minī* also serves as the marker of the 2nd pl. imperative of deponents (*sequiminī* 'follow'). There are at least two reasonable explanations for the origins of the *-minī* form. The first is that *-minī* is related to Greek infinitives in -μεναι (e.g. λεγέμεναι 'to read'), from PIE **-men-*, used first as an imperative. While the phonetic parallels are strong in this equation, the semantics of the derivation are difficult to establish. A more likely history is that *-minī* is related to the middle participle found in Gk. -μενος (cf. φιλούμενος 'loving'), with the **e* weakened to *i*, used adjectivally, and therefore inflected, in periphrastic constructions such as φιλουμενοὶ ἐστε, Lat. **amāminī estis* 'you are loved'. The (presumably) redundant verb *estis* drops out of usage before the literary period. This analysis is supported by the existence of several participially based forms such as *alumnus* 'foster child' and *Vertumnus* 'the god of the changing year', both based on *-mnus*, perhaps from **-meno-/-mh$_1$no-* with syncope, showing further traces of this construction in the history of Latin. Sihler (1995: 479) offers an analysis of *-minī* as a phonetic development of the reconstructed 2nd pl. ending **-d^{h}uo* (> **-þuo-ne-* > **-fone-* > **-fne-* > **-bne-* > **-mne-* > **-minī*). The complicated nature of this chain of events, as well as the aberrancy of the 2nd person middle generally, favors one or the other of the morphological analogies, especially the second.

7.8.15.5. Third singular/plural

The 3rd person endings *-tur* and *-ntur* (*amātur* 'X is loved', *sequuntur* 'they follow') seem to be based directly on the endings **-tor* and **-ntor*, with a straightforward development into Latin. The *-r* here has an obvious connection with the impersonal passive construction found in Oscan (**sakarafír** 'let one sacrifice'), Old Irish (*berir* 'one carries'), Latin (*fertur* 'one carries'), and elsewhere. It has been suggested that the spread of the *-r* throughout the Latin paradigm finds its origins in the impersonal

construction.[13] For general discussion, see Winter (1984).

7.8.16. Deponent and middle in Latin

Latin deponent and middle verbs are morphological curiosities which have managed to survive the leveling effects of a system based primarily on a two-way opposition between the active and passive voices. These verbs, restricted as they are in Latin, have characteristics which increase their interest for the historian of the language. Because of these features, a brief digression will be taken which extends the inquiry into the domain of syntax.

7.8.16.1. The middle

The Latin middle, like the passive, descends from the late PIE middle. The middle is the verbal category in which the verbal action is being performed for the benefit or interest of the subject, who may also be intensively involved in the action. Unlike passives, middles have no external agent, i.e. the grammatical subject is both the agent and the recipient of the verbal action (theme), with the theme serving as the syntactic subject. In a passive, the agent and the theme are different, and the agent is not projected to the position of subject. The middle is often identified as a reflexive category. Although there are some reflexive-like middle functions, the true reflexive is a syntactic category in which the agent and the theme are both present in syntactic structure. The reflexive notion is expressed by a pronoun (Lat. *sē*), as in *Claudia sē lāvit* 'Claudia washed herself,' *Paulus invēnit suam filiam* 'Paul found his daughter,' and *Magister sibi emet librum* 'The teacher will buy himself a book.' However, the two categories of reflexive and middle overlap significantly, and their functions are not always easily distinguished. As the middle became less common in Latin, the active voice plus reflexive pronoun eventually became the dominant expression of the notion of 'subject acting on oneself or on one's own behalf'.

The middle is left out of conventional accounts of Latin verbal syntax, since most specialists consider the category to be moribund in the language with only a few vestigial uses surviving into the literary period which are described as "passive with reflexive meaning" (see Flobert 1975). There are several problems which recur in the specification of middles, which is why they are difficult to identify. One is that middles are morphologically identical to passives and deponents (which are passive in form but active in meaning) and have no distinguishing structural traits which make them easy to discriminate in certain contexts. A second is that the middle is not always easily distinguished from the agentless passive. For example, a sentence

13 The alternative explanations of Benveniste (1935) and Kuryłowicz (1964) involve analogical equations which seem to stretch the limits of analogy.

Table 7.25. A sample of direct middles

abdor	'I betake myself'	mūnior	'I defend, cover myself'
applicor	'I attach myself to'	occulor	'I conceal myself'
armor	'I arm myself'	ornor	'I embellish myself'
auctōror	'I bind myself to'	pandor	'I bend myself'
circulor	'I form a circle around myself'	pōnor	'I apply myself to'
		porrigor	'I spread myself out'
circumagor	'I turn myself about'	praecipitor	'I throw myself down'
compleor	'I fill myself'	sēparor	'I separate, set myself off'
continuor	'I unite myself to, join'	simulor	'I disguise myself'
cōpulor	'I join myself to'	solvor	'I detach myself from'
exercitor	'I exercise myself'	taceor	'I silence myself'
flector	'I turn myself around'	tondeor	'I shave myself'
induor	'I dress myself'	torqueor	'I twist myself'
iungor	'I join myself to'	vergor	'I bend myself'
levor	'I lift myself from'	versor, vertor, volvor	'I twist, turn myself'
moveor	'I move myself'		

Table 7.26. A sample of indirect middles

excalceor	'I take off my shoes'
īnstruor	'I furnish myself with'
optor	'I wish for myself, select'

Table 7.27. A sample of reciprocal middles

cōpulāmur	'(we) join together, connect'
lītigāmur	'(we) dispute, quarrel'
miscēmur	'(we) assemble, mingle'
partimur	'(we) share, distribute'

like *mōrēs mutantur* could mean either 'customs are changing (themselves)', or 'customs are being changed (by someone)'. Finally, many deponent verbs still retain vestiges of their original middle meaning, such as *orior* 'I arise, get up', making them difficult to identify semantically.

Middles are distinguished from deponents in that middles have active counterparts with different thematic structures, as in *lavō* 'I wash (something)', *lavor* 'I wash (myself)', while deponents have no such corresponding active counterparts. If a deponent has an active by-form, it has the same thematic structure and meaning as the deponent, as in *opīnō* 'I think', *opīnor* 'I think'. Passives always have an agent which is external, i.e. not coreferential with the passive subject, as in *canis lavātur ā puerō* 'the dog is washed by the boy'.

Many different types of texts from various periods provide evidence that the middle was a live morphosyntactic category in Latin, serving three different but related functions.

a. *Direct middle.* These are verbs in which the subject of the verb is in both an

agent and a patient or experiencer relation to the verb. In these verbs, the subject is acting on himself or herself, e.g. *lavor* 'I wash' (table 7.25).

b. *Indirect middle.* These are verbs in which the subject acts in his or her own behalf or interest, often intensively; the subject is in both an agent and a beneficiary relationship to the verb, e.g. *optor* 'I wish for myself, select' (table 7.26).

c. *Reciprocal middle.* These are verbs in which there are conjoined subjects which are acting on each other, not on themselves, in a typically patient role. Cf. *cōpulāmur* 'We join (ourselves) together' (table 7.27). Because Latin had so many other devices available for the expression of reciprocity (reflexive pronouns, the reciprocal pronouns *uterque*, *alius* 'the other', the prepositional expression *inter nōs*, *inter vōs*, *inter sē* 'between us, you, themselves', and the adverb *invicem* 'in turns'), the reciprocal middle is not well represented in the texts (Baldi 1979b).

Textual examples

... copulantur dexteras Plaut. *Aul.* 116

'They join together the hands.'

... reliquas armari et confestim sese subsequi iussit. Caes. *BGall.* 4.32.3

'He ordered the rest to arm and to follow him immediately.'

Ubi vero moveri et appropinquare moenibus viderunt ... Caes. *BGall.* 2.31.1

'when they saw that [the tower] was moving and approaching the walls'

... apium examina ... congregantur ... Cic. *Off.* 1.157

'... swarms of bees assemble ...'

Qua re secedant improbi, secernant se a bonis, unum in locum congregentur, muro denique, quod saepe iam dixi, secernantur a nobis ... Cic. *Cat.* 1.32

'Therefore let the wicked depart; let them separate themselves from the good, let them assemble in one place, and finally, as I have often said, let them separate from us by means of a wall ...'

... numquam concessamus lavari aut fricari aut tergeri aut ornari, poliri expoliri, pingi fingi ... Plaut. *Poen.* 219–221

'... we never stopped washing , rubbing, polishing , adorning, smoothing, refining, embellishing , and trimming ...'

Nam bona facile mutantur in peius. Quint. *Inst.* 1.1.5

'For good things change easily for the worse.'

Etiam dispertimini? Plaut. *Curc.* 189

'Will you break away, please?'

7.8.16.2. Deponents

In traditional terms, deponent verbs are those which are "active in meaning but passive in form." From a synchronic point of view, this is essentially accurate. Deponents behave like active verbs in every sense except that they do not form a corresponding passive (i.e. there is no way to say 'I am followed' in Latin using the verb *sequor*). There is nothing in their synchronic structure, distribution, or meaning that sets the deponents off besides their morphology. As Meillet says (1977: 148–149): "There is nothing which can predict *a priori* that such and such a verb is deponent or not. ... In the final analysis, the deponent is, from the beginning of the tradition, a category without its own meaning." Deponent verbs fall into a wide range of semantic patterns which defy a simple characterization. Deponent verbs constitute a category made up of morphological and semantic relics which can only be understood in a purely historical context. Though it has visible connections with the active and the middle, the deponent does not represent a synchronic syntactic category in Latin with a unique function.

Apart from the fairly large number of deponents which were formed analogically to other deponents of the same or roughly similar meaning, all verbs in this category find their origins in the IE middle voice.[14] Why they retained their inflection in the *-r* form, and were not generalized as actives, is difficult to say. Many deponents have active by-forms (e.g. *memoror, memorō* 'I remember'; *doleor, doleō* 'I am sad'), indicating the instability of the class as a whole. At the same time there are many which have no such active form; these remain morphological anomalies.

Deponents probably follow several lines of development from the PIE middle. A large number are ones in which a direct or indirect middle interpretation was present in the original meaning structure of the form which has been retained in the verb as it is attested. Middle meanings are recoverable in such verbs as *inaurior* 'I hear', *fēriōr* 'I rest from work', *doleor* 'I am sad', *memoror* 'I remember', *fruor* 'I

14 For example, there are at least five separate deponent verbs meaning 'help', some with active by-forms (*adminiculor, adiūtor, auxilior, opitulor, suppetior*); four meaning 'worship' (*adōror, caerimōnior, supplicor, veneror*); and no fewer than seven meaning 'soothsay' (*auguror, for, hariolor, manticinor, ōminor, praedicor, vāticinor*). Many of these verbs are not ancient, and some are even based on borrowed words. The only explanation for their existence is that because they represent culturally important concepts, these verbs share a fine grammatical distinction.

Table 7.28. A sample of deponent verbs with recoverable middle meaning

aporior	'I am in doubt'	polliceor	'I offer myself for something, promise'
formīdor	'I am afraid'		
fruor	'I enjoy'	potior	'I possess, have mastery over'
fungor	'I occupy myself with something'	precor	'I beseech'
		proficīscor	'I set out, make a journey'
grātor	'I rejoice'	ūtor	'I make use of'
mīror	'I am amazed, wonder'	vereor	'I fear, am afraid'
orior	'I arise, get up'	vescor	'I feed on'

Table 7.29. A sample of deponents with no recoverable middle meaning

alapor	'I slap'	gradior	'I step, walk'
baubor	'I bark gently'	hortor	'I incite, urge strongly'
calumnior	'I deceive, practice trickery'	hībernor	'I pass the winter'
		loquor	'I speak'
cōnor	'I undertake, try'	mentior	'I lie, deceive'

enjoy, take pleasure in', *nītor* 'I exert', and *patior* 'I suffer, endure' (table 7.28). There is also a significant number of verbs in the language for which an original middle interpretation can be recovered which was lost as the verbs changed to an active orientation. Such a development is particularly clear with a verb like *sequor* 'I follow', which originally meant 'see', preserved in Goth. *saihvan* 'to see', Hitt. *šakuwa* 'eyes' (Baldi 1974); or *proficīscor* 'I set out', which seems to preserve the original meaning of the root *faciō* 'I make' as 'put, place', here in the sense of 'I put myself forward' (< $*d^heh_1$-); or possibly in a verb like *manuor* 'I steal', which may have originally meant something like 'apply one's hand to something'. These three verbs would have had an original indirect middle interpretation. For the remainder of the deponent category, which contains a large number of verbs with a strictly active interpretation, it can be conjectured that they were at one time middle (probably indirect), but that this meaning is no longer recoverable by etymological analysis, or that they are analogically created (table 7.29). Middle verbs most likely provided some analogical support for the maintenance of the deponent category.[15]

7.8.17. The Latin tenses

The Latin verb system is organized in the indicative into two aspects, viz. non-completed (imperfective) and completed (perfective), and three tenses, viz. present, past, and future. Taken together, as is customary in the grammar books, this adds up

15 There is a relatively small number of verbs called "semi-deponents" in which the present system is active in form, while the perfect is passive. Examples are *audeō, audēre, ausus sum* 'dare'; *fīdō, fīdere, fīsus sum* 'trust'; and *fīō, fierī, factus sum* 'become'.

to six tenses in the indicative, both active and passive (the subjunctive lacks a future in both the imperfective and the perfective). Of these six, only two, the present and the perfect, are direct structural descendants of PIE. The remaining four tenses are partly traceable to PIE formations, with some specific Latin innovations. In the synoptic account which follows, only the indicative will be considered; the formation of tenses in the subjunctive will be taken up in the discussion of the subjunctive mood.

7.8.17.1. Active voice

7.8.17.1.1. Present

The present tense of the first and second conjugation verbs in Latin (*amāre* 'to love', *flēre* 'to weep') is formed by adding the personal endings of the present/aorist to the imperfective stem with the theme vowel *-i-* (which is lost by regular phonetic rule), viz. **-āiō*). There is no specific present tense morpheme. Thus *stō* 'I stand' (< **steh₂-i-oh₂*), *fleō* 'I weep' (< **bʰleh₁-i-oh₂*), etc. The long vowel of the ending *-ō* results from the loss of the intervocalic **-i-* and the contraction of the resulting **-āō-* or **-ēō*. The long vowel of the base (*-ā-*, *-ē-*, shortened before *-t* and *-nt*) spread to all persons of the verb (*amā-s*, *amā-mus*, *flē-s*, *flē-mus*), and so on. Verbs of the third conjugation (*agō* type) add the personal endings directly to the base (*ag-ō* < **h₂eg-oh₂*), or to the theme vowel **-e-* (*agis* < **h₂eg-e-s(i)*), etc., while those of the third conjugation (*capiō* type) and the fourth conjugation (*veniō* type) form their presents through the addition of the endings to the vowel **-i-*, with variation of long and short vowel according to prosodic conditions, as in *capiō* and *veniō*.

7.8.17.1.2. Imperfect

The Latin imperfect (*amā-ba-m* 'I was loving') has been a source of some controversy. It does not continue a PIE imperfect, if one existed (see Szemerényi 1996: 298). The formative element of the Latin imperfect, *-bā-*, which is found in all conjugations, is shared only with Oscan if the Oscan form **fufans** is indeed equivalent to a putative Lat. **fubant* (= *erant*) 'they were'. There are several issues connected with the imperfect formation. The first is its association with the future in *-bō* (*amābō* 'I will love'); a second is the origin of the stem form *amā-*, which has been derived alternately from an infinitive (**amā-si*), a root form (**amā-*), and a participle (**amāntis*); a third issue concerns the origins of the *-bā-* itself, which has been treated as the following.

1. A remnant of an old PIE optative (possibly aorist) of the verb **bʰuH-* 'be' appearing in Proto-Italic as **bʰu-ā-m*. The vocalic element **ā* is the same one found in the Lat. *ā*-subjunctive (e.g. *emāmus* 'let us buy'); this **-ā-* is most likely an optative marker from PIE which shows up in Italic and Celtic. It is the same vowel found in the imperfect of *esse* in Latin, viz. *eram* (< **es-ām*), *erās*, *erat*, etc.

2. A combination of the optative marker *-ā- and a phonetically motivated epenthetic consonant inserted between *-ā- and the final vowel of the verbal root (see Pohl 1992). The only consonantal stem in the Latin verbal system appearing in the imperfect is *esse* 'be' (imperf. *eram*, etc.); all others end in a vowel. By this account, *-bā-* is a phonetically defined variant of *-ā-*, with the *-bā-* variant occurring after vowels (*monē-ba-m* 'I was warning', etc.), and the *-ā-* variant occurring after consonants (*er-a-m*). There is no strong phonetic account for the *-b-*, however.

The most reasonable analysis of the imperfect construction remains the one in which the first member of the imperfect formation is treated as a participle and the second as an inherited optative of the verb 'to be', viz. **amāntis #buām* → *amābam*, a constructional type found also in the future. Under this analysis, the *-ā-* of *eram*, etc., is the same as that in *-bā-*, but the *-b-* was never part of the *eram* set. See Baldi (1976).

7.8.17.1.3. Future

There seems little doubt that the Latin future in *-bō* (*amābō* 'I will love', *amābis* 'you will love', etc.), which is restricted to verbs of the first and second conjugations, is in some way related to the imperfect in *-bā-*. It is surely not inherited from PIE. It seems clear that just as the imperfect *amābam* is from a Proto-Italic **am-ā-bu-ā-m*, so too is the future from **am-ā-bu-ō*, with **bu-ō* reflecting some form of the PIE subjunctive (details are obscure). On this view, both formations are parallel to future perfect and pluperfects like *am-ā-v-erō*, *am-ā-v-eram*, etc. Inherited forms which served a future function are preserved in Latin as archaic "sigmatic" futures such as *faxō* 'I will do', *capsō* 'I will take', and many others. These may be related to alternative Latin futures such as *amāssō* 'I will love' and *ēnicāssō* 'I will kill off' and probably reflect the PIE desiderative formation. The remaining futures in *-a/ē-* of the third and fourth conjugations, such as *regam*, *regēs* 'I, you will rule' and *audiam*, *audiēs* 'I, you will hear' are based on the PIE subjunctive. The inherited form of the subjunctive is *-ē-, leveled analogically from an original PIE *-ē/ō* alternation which is evident in Greek. The first person form *-am* is of obscure origin; the predicted form is *-em* (< *-ēm). The future of *esse* 'to be' is also formed from the PIE subjunctive, with the vowel **e* added after the stem, with rhotacism and weakening; thus **h₁es-e-ti* > **es-i-ti* > *erit* 'X will be'.

7.8.17.1.4. Perfect

The perfect tense combines the structures of the PIE perfect and aorist. It is formed by adding the personal endings of the perfect to the various perfect stems, whether root formations such as the reduplicating verbs (*stet-ī* 'I stood', *stet-istī* 'you stood'), or those formed with the suffix *-s-* (*rēx-ī* 'I ruled', *rēx-istī* 'you ruled', i.e. *rēk-s-ī*, *rēk-s-istī*); the suffix *-v-/-u-* (*amā-v-ī* 'I loved', *amā-v-istī* 'you loved', *mon-u-ī* 'I warned', *mon-u-istī* 'you warned'); or with long vowel (*ēdī* 'I ate', pres. *edō*, *ēgī* 'I drove', pres. *agō*).

7.8.17.1.5. Pluperfect

The Latin pluperfect (*plus quam perfectum* 'more than perfect') is a synthetic Latin creation formed through the addition of the PIE preterite suffix **-is-* combined with the optative suffix **-ā-* (**-is-ā- > -erā-*) to the perfect stem, followed by the personal endings. The first part of this suffix **-is-* is also found in perfect forms such as *amāv-is-tī* 'you loved', etc.; the second part **-ā-* is the same optative marker found in imperfect *eram*, *erās* 'I, you were'. Thus, for *amāre* 'love': *amā-v-er-a-m* 'I had loved', *amā-v-er-ā-s* 'you had loved', etc.

7.8.17.1.6. Future perfect

The future perfect tense (*futurum exactum* 'past future') is another synthetically created tense formed from the PIE preterite suffix **-is-*, added to the perfect stem. Thus, for *amāre* 'love': *amā-v-erō* 'I will have loved' < **-is-oh₂*, *amā-v-er-is* 'you will have loved' < **-is-is*, etc. The 3rd pl. *-int* (*amāverint* 'they will have loved'), which occurs instead of *-unt*, is apparently based on the perfect subjunctive.

7.8.17.2. Passive voice

7.8.17.2.1. Present

The present passive is formed from the active verb forms, with the addition of the characteristic *-r* of the middle/passive. As with the active, there is no specific present tense marker. Thus: *amor* 'I am loved' (with regular vowel shortening), *amāris* 'you are loved', etc.

7.8.17.2.2. Imperfect

The imperfect passive derives exactly from the active imperfect, with the addition of the middle/passive marker *-r*. Thus *amābar* (with vowel shortening), *amābāris* (*amābare*) 'I, you used to be loved', etc.

7.8.17.2.3. Future

The future passive is, like the present and imperfect, based on the active plus *-r*. Thus *amābor* 'I will be loved' (with vowel shortening), *amāberis* (*amābere*) 'you will be loved', the latter with change of *i* to *e* before *r*: cf. *cinis*, *cineris* 'ashes'.

7.8.17.2.4. Perfect, pluperfect, and future perfect

The entire perfective passive of Latin (and of Italic languages generally) is based on the periphrasis of the past passive participle in *-tus* (< **-to-*) and a form of the verb *esse* 'be'. The general form of the construction is for the perfect tense (= the present of the perfective) to be formed from the participle plus the present tense of *esse*; the

Table 7.30. The Latin passive perfect tenses

Perfect	
amātus,a,um sum 'I have been loved'	amātī,ae,a sumus 'we have been loved'
amātus,a,um es 'you have been loved'	amātī,ae,a estis 'you have been loved'
amātus,a,um est 'X has been loved'	amātī,ae,a sunt 'they have been loved'
Pluperfect	
amātus,a,um eram 'I had been loved'	amātī,ae,a erāmus 'we had been loved'
amātus,a,um erās 'you had been loved'	amātī,ae,a erātis 'you had been loved'
amātus,a,um erat 'X had been loved'	amātī,ae,a erant 'they had been loved'
Future Perfect	
amātus,a,um erō 'I will have been loved'	amātī,ae,a erimus 'we will have been loved'
amātus,a,um eris 'you will have been loved'	amātī,ae,a eritis 'you will have been loved'
amātus,a,um erit 'X will have been loved'	amātī,ae,a erunt 'they will have been loved'

pluperfect to be formed from the participle plus the imperfect of *esse*; and the future perfect to be formed from the participle plus the future of *esse* (table 7.30).

This construction was probably formed in Proto-Italic: cf. Osc. **teremnatust** (= Lat. *terminăta est*) '(the road) has been marked off'; Osc. *scriftas set* 'they have been written', Umbr. *screihtor sent* (= Lat. *scrīptae* (*-ī*) *sunt*), Umbr. **kuratu si** '(whether the dinner) has been provided' (= Lat. *cūrātum sit*).

7.8.18. The moods

Besides the indicative, late PIE had three other moods, namely, the subjunctive, the optative, and the imperative.[16] Functionally, the subjunctive was used to express volition and reservation (doubt) about some future event. The PIE optative, somewhat less concrete, was used to express a desired or hoped-for possible outcome. Both the optative and especially the subjunctive had a future orientation. This feature is reflected directly in the Latin future tense of the verb *esse* 'to be' (*er-ō* 'I will be'), which is derived directly from the PIE subjunctive $*h_1es\text{-}oh_2$. The imperative mood, hardly a mood at all but traditionally classified as such, expresses a desire on the part of the speaker to have someone else carry out some future action (i.e. a command).

16 As is often the case, Hittite disturbs the standard view. In Hittite only the indicative and imperative are found.

Table 7.31. The PIE subjunctive and Latin future of 'to be'

	Subjunctive PIE *h_1es- 'be'		Future Lat. *erō* 'I will be'	
	Sg.	Pl.	Sg.	Pl.
1st	h_1esoh_2	h_1esome	erō	erimus
2nd	$h_1eses(i)$	h_1esete	eris	eritis
3rd	$h_1eset(i)$	h_1esont	erit	erunt

Table 7.32. The PIE subjunctive of *b^her- 'carry'

	PIE *b^her- carry	
	Sg.	Pl.
1st	b^hereoh_2 (-ooh_2?)	b^herome
2nd	$b^herēsi$	$b^herēte$
3rd	$b^herēti$	$b^herōnt$

Table 7.33. The PIE optative and Latin subjunctive present of 'to be'

	Optative PIE *h_1es- 'be'		Subjunctive Lat. *esse* 'to be'	
	Sg.	Pl.	Sg.	Pl.
1st	h_1sieh_1m	h_1sih_1me	sim (OLat. siem)	sīmus
2nd	h_1sieh_1s	h_1sih_1te	sīs (OLat. siēs)	sītis
3rd	h_1sieh_1t	h_1sih_1ent	sit (OLat. siet)	sint

7.8.18.1. The PIE subjunctive

For the PIE athematic verbs, the subjunctive was constructed from the full (*e*) grade of the root and completed by personal endings, usually but not always primary endings. The paradigm of the root *h_1es- shows the development of the PIE subjunctive into the future of Lat. *esse* (table 7.31). Table 7.32 illustrates the development of the verb *b^her-, which is formed through the addition of the personal endings to the subjunctive marker *e/o, resulting in a long vowel *$\bar{e}$ or $\bar{o}$: The PIE subjunctive is only slightly evident in Latin, its place being taken in the history of Latin by the PIE optative.

7.8.18.2. The PIE optative

The PIE optative occurred in thematic and athematic inflection but is clearest in the athematics. In the athematic verbs, the optative is formed through the addition of the suffix *$-ieh_1$-/$-ih_1$- to the zero grade of the root, followed by the secondary endings. The optative suffix alternates between its *e*-grade in the singular active

(*-*ieh*$_1$-) and its zero grade (-*ih*$_1$-) elsewhere. This pattern is clearly visible in Latin, showing up in the subjunctive of *esse* 'to be' (OLat. *siem*, *siēs*, etc.) and partially in a few other verbs (table 7.33).

The optative of **h*$_1$*es*- illustrates the athematic type.

7.8.18.3. The Latin subjunctive

In general, the Latin subjunctive is an etymological reflection of the PIE optative. As noted, the root **h*$_1$*es*- 'be' is the only one in Latin which preserves the full PIE optative inflection *-*ieh*$_1$-/-*ih*$_1$-. The *-*ih*$_1$- alone is found in a few irregular verbs (cf. *velim* 'I might wish', *edim* 'I might eat', *ausim* 'I might dare', *faxim* 'I might do'), and in the perfect subjunctive (cf. *amāverim* 'I might have loved', *monuerīs* 'you might have warned'). Otherwise, Latin (and Celtic) evidences the PIE marker **ā* in the second (cf. *moneam* 'I might warn'), third (cf. *legam* 'I might gather', *capiam* 'I might take'), and fourth conjugations (cf. *veniam* 'I might come'), and a form *ē* in the first (*amem* 'I might love')

The four Latin conjugations mark their active subjunctive forms according to the following distribution. The passive forms are derived from the active in exactly the same manner as the indicatives.

7.8.18.3.1. Imperfective

Verbs of the first conjugation in *ā* such as *stāre* 'to stand' (< **steh*$_2$-) are characterized in the present subjunctive by the suffix *-*ē*-, as in (ind.) *amās* 'you love' vs. (subj.) *amēs* 'you might love'; (indic.) *stant* 'they stand' vs. (subj.) *stent* 'they might stand' (with regular vowel shortening). The *-*ē*-, which is peculiar to the subjunctive of the first conjugation, is of unclear origin. It could be derived from the PIE optative *-*ieh*$_1$-, generalized from the singular, with a contraction of the final *-*eh*$_2$- of the root as follows: *-*eh*$_2$-*ieh*$_1$- > **āiē* > **āē* > **aē* > *ē* (**steh*$_2$-*ieh*$_1$-*m* > **stāiēm* > **stāēm* > **staēm* > **stēm* > *stem* 'I might stand'). One of the intermediate stages is apparently represented in the Oscan form *deiuaid* (< **deiuāēt*). But Latin sound laws fail to accommodate the necessary phonetic derivation; the predicted outcome for this sequence in Latin is *ā*, not *ē*.

Verbs of the second, third, and fourth conjugations such as *monēre* 'to warn', *legere* 'to gather', *capere* 'to seize', and *audīre* 'to hear' are characterized by the suffix *-ā*- in the present subjunctive. It is found in forms from neighboring Italic languages such as Osc. **kahad** 'let X begin', Osc. **fakiiad** 'let X perform', Umbr. **façia** (= Lat. *faciat*). Finally, it is a morpheme shared with the Celtic languages, as can be seen in OIr. *bera* (= Lat. *ferat*) 'let X carry'. Its specific origins remain obscure, though it is probably the same form found in the imperfect of *esse* 'to be' (*eram*, *erās*), as well as in the general imperfect marker *-*bā*-.

It may be possible to explain the first conjugation subjunctive marker in *-*ē*- not as

a phonetic development from PIE, but rather in terms of a morphological opposition in Latin between verbs with stems ending in front vowels and non-front vowels. Those ending in a front vowel take a non-front vowel suffix as a marker of the subjunctive, while those ending in a non-front vowel take a front vowel. Cf. 2nd pers. subj. *amēs*, indic. *amās*; *moneās*, *monēs*; *legās*, *legis*; *capiās*, *capis*; *veniās*, *venīs*. This functional opposition eliminates the homophony created in the first conjugation subjunctives if the PIE optative morpheme **-ā* were used, as in the other conjugations.

The imperfect subjunctive is formed in the same way for all four conjugations. Synchronically, the imperfect is constructed by adding the personal endings to the infinitive (viz. *esse-m* 'I might be', *amāre-m* 'I might love', *monēre-m* 'I might warn', *legere-m* 'I might gather', *capere-m* 'I might take', *audīre-m* 'I might hear'). The historical formation of the imperfect subjunctive is from the verbal stem followed by **-seh$_1$-*, possibly an optative of the **-ē* type found in the Latin first conjugation, together with an *-s* aorist, viz. **-seh$_1$-*. The attachment is made directly to the stem for athematics (cf. **h$_1$es-seh$_1$-m > essem*), and to the theme vowel in thematics, with accompanying rhotacism (cf. **lege-seh$_1$-m > legerem* 'I might gather'. **-seh$_1$-* might also be analyzed historically as an optative (**-ieh$_1$-*) of a desiderative (*-s-*), i.e. **-sieh$_1$-*, but the phonetics of this derivation cannot be supported from known phonological processes in the history of Latin, specifically as regards the loss of the **-i-*.

7.8.18.3.2. Perfective

The perfect subjunctive is formed by the addition to the perfect stem of the zero-grade variant of the optative form **-ieh$_1$-/-ih$_1$-* and the preterite morpheme **-is-*, also present in the perfect indicative (cf. *amāv-is-tī* 'you have loved', etc.). The variant **-ih$_1$-* is also found in the plural of the present subjunctive of *esse* (*sīmus* 'we might be', etc.) and in the present subjunctive of certain irregular verbs such as *velim* 'I might wish', *edim* 'I might eat', etc. The morpheme **-ih$_1$-* spread from the plural to the singular throughout the perfect, yielding such forms as *amā-v-er-i-m* 'I might have loved', *amā-v-er-ī-tis* 'you might have loved'; *mon-u-er-i-m* 'I might have warned', *monu-er-ī-mus* 'we might have warned', and so on, all supported by regular sound laws. In the later language there was much contamination between the perfect subjunctive and the future perfect indicative, which, apart from the first person singular (cf. *amāverō*, *amāverim*) differed only in the length of the *-i-* in the second singular (cf. *amāveris* vs. *amāverīs*) and the first (*amāverimus* vs. *amāverīmus*) and second person plural (*amāveritis* vs. *amāverītis*). The near-complete merger of the two paradigms in favor of the one with the short vowel probably began from the 3rd sg., where regular shortening created identity between the two tense forms.

The pluperfect subjunctive (*amāvissem* 'I should have loved', *monuissent* 'they should have warned') is formed by the combination of the perfect stem, the preterite

Table 7.34. PIE active imperative endings

	Thematic Present	Future	Athematic Present	Future
2nd sg.	-ø	-etōt	-ø, -d^hi	-tōt
2nd pl.	-ete	-etōt	-te	-tōt
3rd sg.	-etu	-etōt	-tu	-tōt
3rd pl.	-ontu		-entu	

Table 7.35. PIE middle imperative endings

	Present	Future
2nd sg.	-so	
2nd pl.	-d^huo	-tōt
3rd sg.	-to	-tōt
3rd pl.	-nto	

Table 7.36. Latin active imperatives

	Thematic Present	Future	Athematic Present	Future
2nd sg.	amā	amātō	ī	ītō
2nd pl.	amāte	amātōte	īte	ītōte
3rd sg.		amātō		ītō
3rd pl.		amantō		euntō

Table 7.37. Latin deponent/middle imperatives

	Thematic Present	Future
2nd sg.	sequere	sequitor
2nd pl.	sequiminī	
3rd sg.		sequitor
3rd pl.		sequuntor

morpheme **-is-*, the **-sē* (< **-seh$_1$-*) found in the imperfect subjunctive, and the personal endings. Thus *stet-is-se-m* 'I should have stood', etc.

7.8.18.4. The PIE imperative

The imperative in PIE is a verb form by means of which the speaker expresses a desire to have someone else carry out some future action, i.e. issues a command. There is one imperative (the "present imperative") which refers to any future event (Lat. *mihi ignōsce* 'Excuse me'), and another imperative (the "future imperative")

which refers to an event which is to take place after some other future event has taken place (Lat. *rem vōbīs prōpōnam*; *vōs eam penditōte* 'I will lay the matter before you; do you (then) consider it'). The PIE imperative can be reconstructed in both the active (table 7.34) and middle voices (table 7.35), though the middle endings are less securely recoverable than those of the active. In its simplest form the 2nd sing. active imperative is identical to the root, with -ø ending, and the plural is indicated by the ending *-*te*.

7.8.18.5. The Latin imperative

The following characteristics are worthy of note.

a. There is no form for the first person, singular or plural (the typical IE situation).
b. There are both thematic and athematic stems.
c. There are two imperative categories, sometimes called "present" and "future", with different morphological realizations.
d. There are endings for both the active and the deponent/middle.
e. There are no perfect forms, though Latin does have the form *mementō* 'remember', which is based on the perfective present form *meminī* 'I remember'.
f. There is no 2nd pl. future form in the Latin deponent/middle imperatives.
g. While there is a 3rd person form in the Latin future imperative, there is no such form in the present.

The Latin imperative system appears as in table 7.36 in the active voice (*amō* 'I love', *eō* 'I go'). The Latin active imperative endings reflect the PIE system fairly faithfully except for the 2nd sg. thematic form *-d^hi, which is unknown in Latin.

The Latin deponent/middle imperative endings, illustrated in table 7.37 with the the thematic[17] verb *sequor* 'I follow', are less easily related to a coherent set of PIE endings.

7.8.18.6. Remarks on the Latin imperative endings

1. The 2nd sg. active imperative is generally made up of the bare stem, with ø marker (*amā* 'love', *monē* 'warn', *ī* 'go'). In a few rare instances, the final vowel is omitted: *fac* 'make', *dūc* 'lead', *dīc* 'say', a phenomenon without an obvious phonological basis.
2. The 2nd pl. active ending is *-te*, which reflects the PIE 2nd pl. active indicative secondary ending *-*te*: Lat. *ferte* 'carry' (Gk. φέρετε, Skt. *bhárata*).
3. The 2nd and 3rd sg. future imperative ending is *-tō* (OLat. *-tōd*). It is some-

17 Since Latin incorporated the vast majority of its verbs into the thematic class, it is difficult to find representatives of the athematic group in a full future paradigm.

times argued that this ending, found also in Osc. *-tud*, Skt. *-tād*, is in origin the ablative of a demonstrative pronoun **tot* being used adverbially with a meaning like 'Do at some future time/then'. Under this analysis, the pronoun is incorporated into the verbal construction and becomes a person marker (see Miller 1993: 48–49). Another possibility is that this ending is a reflex of the 3rd sg. middle ending **-to*, serving as a marker of the impersonal, as in 'let someone do such and such'. This analysis is based on the impersonal as a construction which represents no person in particular. The fact that the Latin ending *-tō* stands for both the 2nd and the 3rd singular recommends the impersonal analysis (with uncertain remoter origins), but the quantity difference between the imperative *-ō* and the impersonal *-o* remains.

4. The 2nd and 3rd pl. future imperative endings *-tōte* and *-ntō* are clearly based on the singular *-tō* through the addition of the markers *-te* (2nd) and *-n-* (3rd).

5. The 2nd sg. deponent/middle ending *-re* is the rhotacized outcome of PIE **-so*, as in **sek$^{\mu}$-e-so* 'you follow' (cf. Gk. 2nd sg. imperative middle ending -σο as in ἕπεο 'follow'). The 2nd pl. *-minī* is identical to the ending found in the indicative and subjunctive.

6. The 2nd and 3rd sg. ending *-tor* and the 3rd pl. *-ntor* are modeled on the active, with the addition of the deponent/passive marker *-r*.

7.8.19. Nominal forms of the verb in Latin

Forms of the verb which participate in nominal morphological or syntactic patterns are the following: gerunds, gerundives, participles, infinitives, and supines. Participles have already been covered under nominal morphology.

7.8.19.1. Gerunds and gerundives

Both gerunds (*amandī* 'of loving', *monendī* 'of warning', etc.) and gerundives (*amandus* 'to be loved', *monendus* 'to be warned', etc.) are characterized by **-ndo-*, though the historical relationship between the two formations is unclear.

The gerund is a neuter noun. Its syntax and morphology are regular except that the accusative occurs only with a preposition (*ad amandum* 'for the purpose of loving'); further, the gerund lacks a nominative form. The nominative and non-prepositional uses of the accusative are supplied by the infinitive, as in *amāre est bonum* 'to love (loving) is good'; *cupit amāre* 'X desires to love (loving)'.

The gerundive is a verbal adjective formation which is unique to the Italic languages: cf. Osc. **úpsannam** 'to be carried out', Umbr. *pihaner* 'to be appeased'. It is passive in its participial/adjectival use with non-deponent transitive verbs (*tuenda est* 'she is to be killed') but active in its adjectival uses with deponent verbs (*oriundus* 'rising' from *orior* 'I rise'). As the verbal adjective to non-deponent transitive verbs, the gerundive is passive, modifying the nominal that is its underlying object,

as in *cupiditās puellae videndae* lit. 'desire of the girl being seen', i.e. 'desire of seeing the girl'.

The precise historical connection between the gerund and the gerundive is obscure, and indeed the derivation from **-ndo-* is only one of several alternatives. Of the possibilities which account for the connection between the gerund and the gerundive, the explanation which has the fewest difficulties is the one which holds for the historical primacy of the gerund. By this account, the gerundive construction is a secondary formation. It results from a syntactic reanalysis according to which a structure like *puerī tuendī cupiditās* 'desire of the killing of the boy', in which the gerund *tuendī* is an objective genitive dependent on *cupiditās* and *puerī* is an objective genitive dependent on *tuendī*, is reinterpreted as a unitary constituent in which *tuendī* is viewed as modifying the reanalyzed head of the constituent, *puerī*. With this the voice switches from active in the gerund to passive in the gerundive.

Morphologically, the origins of these formations are cloudy (see above under nominal derivations). The issue of origins rests partly on the direction of the derivation (gerund from gerundive or vice versa), but the analysis which derives the gerund from a combination of the PIE nominal marker **-do-* added to the nominalizing suffix **-en-* (seen in *iuvenis* 'youth') is as reasonable as some of the others, for example that of Risch (1984), who derives it from **-tno-*; and Meiser (1993), who derives it from **-dno-*. See further Sihler (1995: 625–628).

7.8.19.2. Infinitives

Infinitives are nominals which are formed from a verbal root through the addition of various case suffixes. They result from the reinterpretation as a verbal form of a derived abstract verbal noun formation (Jeffers 1975). Prominent among the case suffixes found in infinitive formations are the accusative, the dative, and the locative. These case endings are added to root nouns and to suffixed nouns, especially those in **-tu-*, **-s-*, and **-n-*. The wide range of infinitive constructions in the IE languages, and the relative lack of regularity in their suffixation pattern, suggests that the infinitive was not a distinct grammatical category of PIE.

In Latin there are six paradigmatically organized infinitives, three active and three passive in the present, perfect, and future, formed the same way in all four conjugations.

1a. The present active is constructed from the stem of the imperfective and the marker *-se* < **-si*, in which the final **-i* appears to be from an old consonantal stem locative in **-i* which has undergone normal phonetic development, as in *rūre* 'in the countryside', *Carthāgine* 'at Carthage'. The *-s-* of *-se* may have its origins with the **s*-stem nominals, but this is far from certain. It has no cognate forms as infinitival markers in the Italic languages (Oscan and Umbrian favor an old accusative form **-om*, seen in Osc. *ezum* 'to be', Umbr. *erom*), though **-s-* can be reconstructed for Greek

infinitives in -ειν, where the intervocalic -σ- would disappear as regularly (i.e. παιδεύ-ειν < *παιδεύ-ε-σεν); by Mycenaean infinitives in *-e-e* such as *e-ke-e* 'to have' (**eke-sen*), though these may be from a different stem class; and by Sanskrit infinitives like *jīváse* 'to live'. The form **-se* is directly recoverable in Latin infinitive forms such as *esse* 'to be', *posse* 'to be able' (< **pot-se*), and *ēsse* 'to eat' (< **ed-se*). After the liquids *l* and *r*, inherited **-se* assimilates to the preceding sound, as in *ferre* 'to carry' (< **fer-se*), *velle* 'to wish' (< **vel-se*). Given that Latin almost completely abandoned the athematic verbal inflection of PIE, all other present infinitives underwent rhotacism, since the **-se* was always located after the thematic vowel of the verbal stem, yielding the familiar *-re* of *amāre* 'to love', *monēre* 'to warn', *legere* 'to gather', *capere* 'to seize', and *audīre* 'to hear'.

1b. The present passive infinitive appears in several forms. The primary variant appears to be **-ī* (< **-ei*), the one characteristic of the third conjugation (cf. *sequī* 'to follow', *agī* 'to be driven', *capī* 'to be taken'), a formation recoverable in Vedic. This morpheme is probably an inherited dative singular, as preserved in Oscan **patereí** 'to the father' (= Lat. *patrī*), though other interpretations are possible. There are two other variants of the present passive infinitive. The first is the one in *-rī* (*amārī* 'to be loved', *monērī* 'to be warned', *audīrī* to be heard'), which either is based on the dative singular of an **s*-stem (cf. *generī* 'to the race') or is analogical to the active, building on the *-r-* < **-s-*. The second is evidenced in the Old Latin form *-(r)ier*, seen in OLat. *laudārier* 'to be praised' (= *laudārī*), VTIER (= *ūtī* 'to use'), GNOSCIER (= *gnōscī*) 'to be known', FIGIER (= *fīgī*) 'to be fastened'. The first *-r* of this morpheme either is based on the deponent/passive *-r-*, or is analogical to the present passive infinitives of the *amārī* type. It is followed by the same dative marker **-ī-*, which is shortened before the *-e* of *-er*. The final *-er* is difficult to explain; some analogical association is apparently at work, perhaps with a noun form like *iter* 'a going', or an apocopated infinitive form *fīer* 'to be made, become' for *fierī*, or some overextension of the deponent/passive marker *-r*.

2a. The perfect active infinitive in *-isse* is transparently derived from the preterite morpheme *-is-* followed by the infinitive marker *-se*, added to the stem of the perfective. Thus, *amāvisse* 'to have loved', *monuisse* 'to have warned', *stetisse* 'to have stood', and so on.

2b. The perfect passive infinitive is the supine in **-tu-* augmented by the infinitive *esse* 'to be' (*amātum esse* 'to have been loved'). This periphrastic infinitival construction frequently occurs in Old Latin without *esse*.

3a. The future active infinitive (*amātūrum esse* 'to be about to love', etc.) is a periphrastic construction formed from the future participle (*amātūrum* 'about to love', *monitūrum* 'about to warn') and the verb 'to be' *esse*. The

participial form *amātūrum*, etc. is formed from the stem of the imperfective followed by the suffix *-tu* (also found in the supine). Since it frequently occurs in Old Latin without *esse*, and because it serves for all genders, it may be that *-tūrum* itself was the infinitive. The suffix *-tu-* most likely reflects an action noun formative of the type seen in *adventus* 'arrival', followed by an infinitive of 'to be' (**esom*) seen in Osc. *ezum*, Umbr. *erom*, though this derivation is not certain.

3b. The future passive infinitive (*amātum īrī* 'to be about to be loved', etc.) is based on the active construction formed with the supine plus the verb *eō* 'go', viz. *eō amātum* 'I am going to love'. To form the passive, the supine is preserved, and the verb *eō* is converted into the unusual and otherwise non-occurring passive infinitive form *īrī*. This construction is relatively rare, however, and is generally replaced by the *fore ut* construction seen in a sentence like *dīxērunt fore ut amer* (= *dīxērunt mē amātum īrī*) 'They said that I was about to be loved'.

7.8.19.3. The supine

The supine is an action noun based on the formative **-tu-*, inflected in either the accusative or the ablative. As noted above, the suffix **-tu-* appears to be the one found in action nouns such as *gemitus* 'a sighing' and *monitus* 'a warning'. The accusative form *-tum* of the Latin supine corresponds to the Sanskrit infinitives in *-tum* (e.g. *ḗtum* 'to eat', *kártum* 'to do'). Accusative supines are found in the Latin construction with the supine and a verb of motion to express purpose, as seen in *pessum īre* 'to fall to the ground'. Some of the Latin ablative supines in *-tū* are apparently old datives from PIE **-euei* (cf. *adspectū* 'to the sight', Umbr. dat. sg. **trifu**, *trifo* 'to the tribe'), while some others seem to be genuine ablatives, such as *cubitū* in *Primus cubitu surgat* ... 'He will be the first to rise from bed ...' (Cato *Agr.* 5.5). A rare Latin dative supine in *-tuī* (e.g. *memorātuī* in Plautus) is most likely not inherited.

7.9. Summary

In this chapter, the evolution and development of the Proto-Indo-European system of word formation into Latin has been explored. The version of PIE word formation which has been postulated as the ancestor of Latin and the other IE languages is one typical of the late or classical phase of the protolanguage, with rich morphological structure. This system is characterized by elaborate marking of case, gender, and number in the noun; by complex pronominal systems; by agreement and concord relations; and by extensive patterns of affixation in the formation of verbal structures. Paradigms for many of the major nominal, pronominal, and verbal structures

are provided, along with sample lexical items and reconstructions, illustrating both derivational and inflectional patterns. Each morphological structure illustrated in this chapter is accompanied by comparative data from the IE languages, and detailed information is provided on the development of the individual morphological categories into Latin.

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Cato *Agr.*	M. Porcius Cato, *De Agricultura*
Catul. *Carm.*	C. Valerius Catullus, *Carmina*
Charisius *Gramm.*	Flavius Sosipater Charisius, *Artis Grammaticae Excerpta*
Cic. *Cat.*	M. Tullius Cicero, *In Catilinam*
Cic. *Fam.*	M. Tullius Cicero, *Epistulae ad Familiares*
Cic. *Off.*	M. Tullius Cicero, *De Officiis*
Cic. *De Or.*	M. Tullius Cicero, *De Oratore*
Dem. *De Cor.*	Demosthenes, *De Corona*
Dion. Hal. *Ant. Rom.*	Dionysius of Halicarnassus, *Early history of Rome*
Ennius *Ann.*	Q. Ennius, *Annales*
Gel. *N A*	Aulus Gellius, *Noctes Atticae*
Hdt.	Herodotus, *History*
Ov. *Met.*	P. Ovidius Naso, *Metamorphoses*
Petr. *S.*	Petronius, *Satyrica*
Plaut. *Asin.*	T. Maccius Plautus, *Asinaria*
Plaut. *Aul.*	T. Maccius Plautus, *Aulularia*
Plaut. *Capt.*	T. Maccius Plautus, *Captivi*
Plaut. *Cas.*	T. Maccius Plautus, *Casina*
Plaut. *Curc.*	T. Maccius Plautus, *Curculio*
Plaut. *Merc.*	T. Maccius Plautus, *Mercator*
Plaut. *Miles*	T. Maccius Plautus, *Miles Gloriosus*
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Xen. *An.*	Xenophon, *Anabasis*

Indexes of forms

1. Latin–Faliscan

(CLat. unless marked)

ā (interj.) 361
ā (prep.) 258, 261
ab 86, 258, 261, 359
ab illō locō vēnit 89
abdor 393
ABDOVCIT 206
abdūcit 206
abī tuam viam 84
abinde 239
abluō 254
aboluī 382
abripiō 253
absentīvos 233
abstināx 233
accingō 294
accingor 230
accipiō 182
accūsō 267
ācer 326, 350
Achaeī 190
Achīvī 190
aciēs 333, 334
ācriter 350
actitavi 259
actito 259
āctito 259
āctus 262
acu 239
acus 330
ACVAM 237
ad 86, 279, 359
ad amandum 406
adagium 271
adcognōscō 233
adcrēdō 229
adeō (adv.) 268
adeō (v.) 268
ADESENT 212
adessent 212
adformīdō 229
adfuērunt 213
adfuisse 213
adhūc 268
ADIESE 212
adigō 253
adiūtō 234
adiūtor 395
adminiculor 395
adnuit 265
adnūit 265
adōror 395
adspectū 331, 409
adulēscēns 305
adulēscēntulus 305
adūlor 101
adulterium 305
adulterō 305
advena 317
adventus 409
adversum 213, 358
adversus 351, 358
ADVOCAPIT 215
AEDE 292
aedēs 249, 266, 282, 305
aedicula 305
AEDIFICIEIS 317
aedificiīs 317
aedīlēs 172
aedīlis 206
aēnus 292
aequor 322, 323
aequora 325
aequum 212
AEQVOM 212
aerumna 166
aes 249, 287, 288, 303
aestimāre 267
aetās 269, 280
aeva 328
aevitās 269
aevom (OLat.) 312, 313
aevum 313
af 183

afficiō 280
agāsō 183
agellus 305
ager 51, 269, 304, 305, 313, 327
agere 325
aggerō 294
agī 408
agilis 257
agitāre 374
agmen 274
agnōscō 233
ago 259
agō 244, 252, 260, 279, 374, 398
agōnium 128
agricola 311, 317
agricolum 320
āh 361
a(h)ēnus 292, 303
AHUIDIES 201
ai 361
AIDE 277
aidem 292
AIDILIS 206
aidīlis 249, 266
AIMILIVS 217
āiō 271
alacer 182, 257
alapor 396
alauda 115
alausa 115
Albāī lōngāī 318, 335
albeō 371
albēscō 371
albulus 305
albus 134, 173, 281, 292, 305
Alexandrie 240
algēre 381
aliā 351
aliās 351
aliquis 345
aliud 348
alius 71, 245, 348, 394
almus 303
alō 184, 254, 303, 308
alsī 381
alter 348, 353
ALTERNEI 215
altior 349
altiōris 349
altitūdō 307
altius 349
altus 275, 308, 349
alumnus 304, 391
AMA 237
ama 264
amā 263, 264, 404, 405
amā- 397
amābam 177, 179, 272, 385, 397
amābar 399
amābare 399
amābāris 399
amābātur 362
amābere 399
amāberis 399
amābilis 296, 305
amābis 398
amābit 175
amābō 179, 188, 385, 397, 398
amābor 399
amāminī 391
amāmur 391
amāmus 385, 391, 397
amandī 406
amandus 307, 406
amāns 258, 265, 323
amant 386
amantia 325
amantis 308
amantur 391
amāre 179, 373, 397, 399, 408
amāre est bonum 406
amārem 285, 385, 403
amārī 408
amāris 390, 399
amās 265, 268, 385, 390, 397, 402, 403
amāssō 398
amat 237, 265, 385
amātis 386
amātum esse 408
amātum īrī 409
amātur 175, 269, 390, 391
amātūrum 408

amātūrum esse 408
amātus 303, 308, 309
amāveram 398, 399
amāverās 399
amāverim 385, 402, 403
amāverimus 403
amāverīmus 403
amāverint 399
amāveris 399, 403
amāverīs 403
amāveritis 403
amāverītis 403
amāverō 398, 399, 403
amāvī 179, 306, 380, 382, 398
amāvisse 408
amāvissem 385, 403
amāvistī 398, 399, 403
amāvistis 383
ambi 359
ambō 247, 264, 281, 311, 353
amem 266, 385, 402
amēmus 386
amēs 258, 266, 385, 402, 403
amet 385
amētis 386
amīcitia 269
amīcitiam 265
amīcus 265
amō 79, 258, 263, 305, 306, 362, 385, 390, 405
amoenus 101
amor 390, 399
amphora 193, 255
amplexō 233
amplexor 233
ampulla 255, 256
amurca 190, 270
an 358
anas 257
anatīna 233
anceps 269
angelus 277
anima 305, 318
animal 266, 311, 327
animālia 328
animālis 305
animulus 229
animus 276, 303
annum iam tertium et vīcēsimum rēgnat 84
annus 184, 294
ante 52, 87, 88, 244, 256, 307, 359
antīcus 307
antīquitus 351
anuis 331
ānulus 305
ānus 305
aperīmus 376
aperiō 272
aperīre 373
aplustra 192
Apollōnī 324
APOLONE 324
APOLONEI 324
APOLONES 324
aporior 396
appendīx 306
appendō 306
applicor 393
aqua 180, 318
aquam 237
ārae 179, 319
arbiter 183
arbor 288, 323
arbore māior 86
arborem 324
arboris 287
arbōs (OLat.) 287, 323
arce 328
arceō 254
arcēre 382
architectus 192
arcibus 333
arcubus 332
arcuī 382
ARF(VERVNT) 213
ARFVISE 213
argentō 176
argūtō 233
argūtor 233
armantur 73
armor 393

arō 275
ars 269, 326
artibus 333
artifex 270
artubus 332
arvīna 158
ARVORSVM 213
arvum 306
ascendō 254
asinus 183, 289
assentio 226
assentior 226
asser 294
assēs 142
ast (OLat.) 199
ASTED 199
At 101
Atella 101
āter 306
Atessa 101
āthlēticus 193
Atina 101
ātrium 166
ātrōx 306
atta 298
attineō 261, 293
attingō 255
attulī 294
auceps 257, 269, 280, 301
auctōror 393
auctūrā 139
audācia 305, 334
audāculus 233
audāx 69, 268, 305, 306
AUD(E)IUS 202
Audeius 201
audeō 306, 396
AUDEOM 316
audēre 256, 396
audiam 266, 398
audiās 266
audiēns sum 231
audientis 308
audiēs 398
audīmus 376
audiō 375, 381
audīre 285, 402, 408
audīrem 285, 403
audīrī 408
audīstī 272
audīt 268
audītus 309
Audius 201
audīvī 380
audīvistī 272
audīvit 268
augeō 101, 249
augēre 381
auguror 395
aulae medio 223
aulai medio 223
aureus 305
aurifex 254, 257
auris 101, 250, 251, 267
aurōra 286, 288
aurufex 254
aurum 134, 305
auscultō 267, 296
ausi 226
ausim 287, 402
aussim 287
ausus sum 396
aut 176, 182, 267
aute 239
autumnum 166
auxilior 395
avārus 272
avis 269
axis 252, 284

bāca 298
BACANAL 212
BACANALIA 212
BACANALIBVS 212
bācca 298
baculum 279
bālaena 192
balanus 192
balineum 270
ballista 192
balneārius 306
balneum 233, 270, 306

balneus 233
balteus 166
balux 101
barba 270
bardus 193
bārō 166, 233
basis 287, 289
bāsium 182, 183
batioca 193
baubor 396
bella 316
bellī 315
belliātula 229
Bellōna 212
Bellōnae 213
bellum 200, 272, 312
bellus 305
bene 232, 243, 264, 265, 305, 351
benna 114
berber 215
bibam 174
bibī 378
bibō 148, 149, 305, 378
bibulus 305
biduum 353
biennis 270
bīnī 357
bipennis 353
bis 351, 357
bisulcus 286
bitūmen 183
blennus 193
boa 183
bonātus 233
bonitās 308
bonum 200, 232
bonus 69, 200, 212, 243, 272, 348, 349
bōs 9, 182, 183
botulus 183
bove 325
bovem 142
BOVID 325
brāca 115
breviculus 305
brevis 282, 305
brūtus 183
būblum 232
būbulum 232
būfō 182, 183

cachinnō 58, 61, 278
cacula 166, 317
cadō 21, 287, 289, 378
cadus 193
Caecilius 222
Caecīna 166
caecus 249
caedēs 327
caedō 267, 378
caelum 233, 296
caelus 233
caerimōnior 395
caeruleus 296
Caesar 286
caesariēs 286, 334
Caesaris 213
Caesaris adventus 85
CAESARVS 213
caesī 172, 314
calamitās 182
calātōrem 204
calcāria 328
calcō 255
caldicerebrius 233
caldus 232, 255, 269
calefaciō 269
calētur 230
calfaciō 269
calidus 232, 255, 269
calō 204
calumnior 396
camara 182
camera 12, 182, 190, 270
camisia 115
campsō 192
campus 158
candēlābrum 233, 296
candēlābrus 233
canis 9, 276
canō 374, 378
CANONT 251
cantābundus 233

cantāre 374
cantharus 193
canthērius 192
cantitāre 374
cantō 229
canturiō 233
canum 329
canunt 251
capere 285, 375, 402, 408
caperem 285, 403
capī 408
capiam 402
capiās 403
capiat 204
capientis 308
capimus 376
capiō 174, 182, 185, 244, 245, 260, 261, 263, 372, 374, 377, 397
capis 403
capitālem 212
capite 131
capitis 253
Capitōlium 291
capsō 372, 398
captīvus 184, 306
captus 184, 294, 309
Capuae exīre 234
caput 269
CAPVTALEM 212
carbō 306
carbōnārius 306
cardō 302
cārē 350, 351
carēbō 125, 172, 174
carefo (Falisc.) 125, 172
carēns fuī 231
carēre 373
cārissimē 350
cārius 350
carmen 296
CARMENA 251
Carmenta 166
carmina 251
carō 187, 302, 324
carpentum 114
carpere 373, 374
carpō 254, 374
carrus 114, 115
Carthāgine 325, 407
Carthāginī 325
cārus 304, 350
casa 287
cascus 61
CASTREIS 317
castrīs 317
CASTVD 331
cāsus 262, 287, 288, 289, 298, 354
catēna 166
Catilīna 254
catīnus 158
catulus 254
caulis 249
caupō 237
causa 101, 267, 287, 288, 289
caussa (OLat.) 287, 289
caveō 292, 378
cavēre 382
cāvī 378, 382
cecidī 378
Cecilius 222
cecinī 378
cedrī 232
CEIVIS 212
celer 306
celerissimus 223
celerrimus 223
celōx 192, 306
cēna 134
cēnsēre 382
cēnsor 129, 258
cēnsuī 382
CENSVERE 212
CENSVIT 212
centum 38, 59, 273, 278, 356
CEPET 217
cēpī 377
cerebrum 284
Cererus 324
Cerēs 288, 323
Ceres (Falisc.) 123
cernō 306, 308, 372, 375
certāmen 274

certē 87
certus 308
cērussa 166
cervesia 115
cēsor 258
cētera 351
Cherea 317
chorāgium 193
cibus 101
Cicerō litterās ad mātrem suam scrīpsit 86
Cicerō litterās mātrī suae scrīpsit 86
cincinnus 193
cinis 254, 324, 374, 399
circā 358
circulor 393
circulus 311
circum 358
circumagor 393
cis 358
cisium 114, 287
cista 193
cisterna 166
cito 257, 264, 351
citō (OLat.) 264
citrā 70, 358
citrō 358
cīve 328
cīvēs 258, 332
cīvī 328
cīvicus 307
cīvīlis 178, 305
cīvis 212, 305, 307, 321, 326
cīvīs 258, 277
cīvitās 180
cīvium 329
clam 351
clāmō 184
classe 328
classī 328
Claudiī 182
Claudius 250
claudō 256, 267, 379
clausī 379
clausus 232
clāvis 327
clepō 278, 377, 379
clēpsī 379
Clōdiī 182
Clōdius 250
clōdus 182
clueō 275, 296, 372
clūsus 232
coctus 278
cōdex 182
coepī 235
coerceō 254
cognōscō 276
cōgō 258
cohibeō 253
COIRAVERVNT 217, 266, 286
collēs 134
colligō 253
collis 295
collum 184, 295
collus 184
colō 278
columen 244
columna 166
COM 251
comĕdit 227
comedō 229
comes 308
cōmis 200
cōmissor 193
comminuō 253
committō 298
commōnstrō 229
commōvisse 212
commūnem 212
commūnis 184, 248, 266
COMOINEM 212, 266
compleō 374
compleor 393
COMVOVISE 212
con 239
con- 258
concha 192, 277
concīdō 267
conclūdō 267
condecet 229
condemnō 276
condīcō 266

condimus 375
condūcō 267
cōnfectus 270
cōnficiō 182, 190
cōnfīdō 266
cōnfiteor 253
congregō 20, 277, 292
congreguntur 73
CONIOVRASE 212
coniugium 305
coniungō 305
coniūrāsse 212
coniux 301
cōnor 396
conquīrō 266
cōnsecrāvit 380
cōnsentiō 255
CONSENTIONT 386
cōnservus 255
cōnsilēscō 229
CONSOL 206
cōnsol 212
cōnsolerētur 212
CONSOLVERVNT 212
CONSPONDISE 212
cōnstantia 294
cōnsuētūdō 307
cōnsul 123, 206, 258, 284, 316, 321, 322
cōnsulāris 305
cōnsulī 267
continuor 393
contrā 132, 186, 359
conventiōne 213, 325
CONVENTIONID 325
convertī 378
convertō 378
convertor 230
convīva 317
cōpia 258
COPO 237
cōpulāmur 393, 394
cōpulor 393
coquīna 182
coquō 187, 278, 354
cor 9, 274, 279, 323
cōram 351, 358
coraueron (Praen.) 172
corcodīlus 296
corculum 297
cordis 297
CORINTO 291
CORNELIO 284
Cornelios 284
corniger 253
cornū 44, 275, 330, 331
cornua 332
cornum 233
corōlla 255, 298
corona 373
coronāre 373
corpus 6, 290, 323
corpusculum 229
corripiō 253, 294
COS 212
COSMIS 200
cōsol 284
COSOLERETVR 212
cōsul 123, 258, 316
cotīdiānus 272
COVENTIONID 213
cra (Falisc.) 172
crās 172
crāstinus 302, 303
creāre 265
creātor 306
creātrīx 306
crēdibilis 305
crēdō 305
credrae 232
crēdulus 305
crēscere 265
crēscō 375
crēvī 306
crocodīllus 298
crocodīlus 296, 298
crumēna 166
crumīna 166
cruor 59
cubat 172
cubitū 409
cucurrī 370, 378
cui 251, 347, 348

cuius 188, 206, 216, 271, 343, 347, 348
culcita 232
culcitra 232
culleus 193
culmen 244
culmus 303
cum 184, 189, 202, 212, 213, 217, 239, 251, 359, 361
cum puellā 81
cunīculus 150
cūpa 183
cupa (Falisc.) 172
cupere 308, 373, 374, 376
cupīdō 307
cupidus 308
cupiō 101, 374
cupīre 376
cupit amāre 406
cupressus 101
cūr 278, 351
cūra 286
cūrātum sit 400
cūrāvērunt 172, 217, 286
cūria 142
curis 183
cūrō 139, 266, 286
currō 363, 370, 378
cursus 115
curvus 255
custōdiō 375
custōs 307
cutis 327
CVRATO 218
cyathus 193
cymbalissāre 191

dā 264
dacruma (OLat.) 279, 292
danīsta 192
Dapālis 220
daps 220
dare 254, 264, 302
datae 213
DATAI 213
date 264
datō 219
datus 244, 252
dē 86, 184, 189
deābus 320
deamō 229
deasciō 229
dēbeō 235
decem 8, 38, 149, 254, 257, 273, 274, 309, 355
december 355
decemplex 355
decet 243, 276, 302
deciē(n)s 357
-decim 355
decimus 303, 309, 352, 355, 356
Declōnae 142
decor 226
dēcrēvit 138, 175
decuma 254
dede (Tibur.) 172
DEDERONT 173, 257, 389
dedērunt 173, 257, 389
DEDET 388
dedī 378
dēdiscō 255
DEDISE 212
dedisse 212
dedit 129, 172
dedita 224
DEDRO 173, 389
dēfendō 179, 281, 283
dēfraudet 233
dēfraudit 233
dēgō 258
deicō (OLat.) 248, 251
dein 256, 268
deinceps 140
deinde 256, 268
deīs 320
DEIVOS 200
dēlectō 233
dēlector 233
dēlēras 272
dēlēre 285, 374
dēlērem 285
dēlētus 303
dēlēveras 272

dēligō 270
dēluctō 229
-dem 343
Demea 317
dēmō 297
dēmpsī 297
dēnī 357
dēns 69, 308
dentem 273
dentēs 283
dentis 68
dēnuō 254, 270
deōrum 316
deōs 200, 265
dēripiō 253
dērogitō 229
dēsiliō 270
dēsinō 286, 289
dēsubitō 286, 289
dēsum 286, 289
dēsuper 286
det 385
dētrectō 254
deum 316
deus 49, 146
dexter 304, 342, 348, 349, 350
dextrā 350
Dianā 319
DIANAI 319
dīc 405
dīc- 131
dīcant 386
dīcere 178
dīco 259
dīcō 248, 251, 278, 372, 373, 379
dictāre 373
dictito 259
DIE 335
diē 335
(diē) septumei 315
diēbus 336
diei 335
diēī 335
diem 335
diērum 336
diēs 219, 333, 334, 335, 336
Diespiter 49
dīgerō 261, 291
dignitōsus 233
dignus 243, 276, 294, 302
dingua (OLat.) 9, 243, 279, 292
dīnumerō 261, 291
DIOVE 324
DIOVIS 271
DIOVOS 213, 271, 324
dir(h)ibeō 286
dīrigō 253
dirimō 246, 285
dīrus 183
discēdō 286
discerpō 254
discō 255
discurreret 232
discus 193
dispensō 291
dispōnō 286
dissentio 226
dissentior 226
distineō 291
dītiae 272
diūtinus 302
diūturnus 303
dīvae 142, 319, 335
dīvīnus 272
dīvitiae 272
dīxī 177, 297, 377, 379
dō 149, 151, 279, 378
docēre 381
doctissimus 350
docuī 381
doleō 395
doleor 395
dolō 177
DOLVD (OLat.) 338
domesticus 307
domī 86, 315, 325, 331, 351
domī meae 319
domine 256
dominī 267
dominōs 284
dominum 284, 313
dominus 301, 303

domō 276, 331
domus 243, 244, 279, 330
dōnāre 373
donec 224
Donicum 224
DONOM 257
dōnum 129, 157, 247, 257, 263, 302, 373
dormiō 371
dōs 158
doucō (OLat.) 246, 249, 267
doviad (Falisc.) 385
drachmum 320
duābus tribusve hōrīs 90
duae 319
duai 319
dūc 269, 405
ducēnī 356
ducentēsimus 356
ducentī 356
ducentiēs 357
ducēs 332
ducibus 336
ducis 328
dūcitō 219
dūcō 20, 184, 246, 249, 267, 321
ductō 229
duellum 200
dulcēdō 307
dulcis 257
dum 351
duo 8, 264, 311, 352, 353
duōbus 353
duodecim 355
duodecimus 356
duodēvīcēsimus 356
duodēvīgintī 355
DUO[M] 202
duōrum 353
duplex 353, 357
dupondiārius 233
dūritia 334
dūritiēs 334
dux 20, 284, 321, 324
(dux ipse) viās 318
DVELLOM 272
DVELONAI 212, 213
DVENOI 200, 314
DVENOS 200, 212, 272
DVOMVIR 202, 316, 326

E 215
ē 258, 261, 359
ea 185, 319, 337, 342, 343, 344
eā 213, 218, 343, 351
EAD 213, 218, 319, 331
eadem 343
eae 343
eam 343
eapse 344
eāpse 344
eārum 343
eās 176, 343
ebinde 239
ēbulliō 234
ECO 126
ecquis 345
edepol 196, 215
ēdī 378, 398
edim 402, 403
edo 227, 259
edō 252, 260, 378, 398
ēducāre 246
ēdūcō 297
EEIS 213
efferō 294
effluō 234
effringō 255
effundō 255
efiles (Falisc.) 172
egēnus 303
egestās 303
egi 259
ēgī 398
ego 126, 160, 243, 252, 264, 265, 268, 337, 338
ego (Falisc.) 124
ego maneō 89
egō (OLat.) 264, 338
egomet 229
eh 361
ēheu 361
eī 205, 213, 234, 343

eĭ stetērunt 205
EIIVS 292
einom 200
eĭs 343
eius 188, 271, 292, 343, 344
ēloquium 204
emāmus 397
ēmī 378, 379
emō 297, 378, 379
emptīcius 233
ēmptus 262, 297
endo 219
ēnicāssō 398
enim 351
ēnsis 257
eō 343, 405, 409
eō amātum 409
EOD 177, 314, 331
eōd (OLat.) 314
eōrum 343
eōs 343
eporediae 114
eqo (Falisc.) 124
eque 256
eques 308
equos (OLat.) 68, 257, 312, 313
equus 9, 243, 272
eram 290, 385, 397, 398, 399, 402
erās 397, 399, 402
erat 397
ergastulum 295
ergo 264
erit 286
erō 13, 73, 281, 287, 400, 401
errābundus 307
es 178, 250, 256, 369
ēs 250
escas 225
ESED 204, 286
ESENT 212
ESET 212
ēsito 259
ESOM 178, 201
esom 178, 180
es(s) 385
esse 132, 175, 177, 178, 179, 201, 215, 232, 234, 243, 246, 285, 295, 380, 397, 398, 399, 400, 401, 402, 403, 408
ēsse 408
essem 285, 403
essent 212
esset 204, 212, 232
est 178, 185, 252, 256, 287, 369, 370
estis 178, 391
esto 264
estō 219, 220
ēsus 262
et 361
Etrūria 111
Etruscī 111
euge 251
eum 343
eumpse 344
euotenosio (Falisc.) 172, 314
ex 86, 88, 258, 261, 359
ex- 233
ex illō oppidō vēnit 86
exagōga 192
excalceor 393
excatarissō 233
exciperem 232
EXDEICENDVM 212
exdīcendum 212
exemplar 292, 327
exemplum 297
exercitor 393
exīlis 292
eximius 254
eximō 297
exin 268
exinde 268
exīstimō 267
exopīnissō 233
exopīnor 233
expellō 379
expudōrātus 233
expulsī 379
EXSTRAD 213, 216
exsulātum 229
extrā 213, 358

extrēmus 350
exulō 254

faber 134
fābula 304
fac 256, 269, 405
facere 132
faciat 142, 176, 178, 385, 402
facile 69, 311
facilis 69, 269, 305, 311
facillimē 212, 213, 314
facilumēd (OLat.) 314
FACILVMED 212, 213, 314
facimus 376
faciō 125, 182, 190, 260, 261, 282, 372, 377, 396
facit 219
facitō 131
faciunda 217
FACIVNDVM 217
factus 270
factus sum 396
faenisex 286
fāginus 303
fāgus 303
Faleriī 254
Faliscus 254
fallō 283
familia 254, 317
familiāris 305
famulus 101, 254
far 184
far me[l]atom (Falisc.) 124
fārī 263, 304, 373
fariolus 182
farmentom (Falisc.) 123
fās 309
fās est 142
fasēna 182
fastīdiō 233
fastīdior 233
fātur 247, 317
faucēs 101
faveō 380
fāvī 380
favīsae 166

faxim 402
faxō 188, 372, 398
februārius 306
februum 306
FECED 257, 278, 385, 388
feced (OLat.) 200, 295
FECEI 387
fēcī 246, 263, 377, 387
FECISE 212
fēcisse 212
fēcit 126, 200, 251, 257, 278, 385
fēcundus 307
fēdus 182
feidō (OLat.) 245
fēlīcissimus 350
fēlīx 306
fēlō 306
fēmella 256
fēmina 269, 304
fēminae 319, 335
fēminam 277
femur 302, 324
fenestra 166
fenestram malleō frēgit 89
fer 73
feram 188
ferantur 128
ferat 402
ferculum 232, 304
fere 222
ferent 75
ferentur 128
ferēs 73
feret 175, 179
fericulus 232
ferimus 254
fērior 395
ferme 222
ferō 150, 243, 247, 263, 275, 281, 304, 370, 384, 385
ferōx 20, 306
ferre 142, 275, 285, 294, 295, 297, 408
fert 74, 365
ferte 73, 386, 405
fertum 157
fertur 389, 391

ferunt 386
ferus 306
fīcētum 308
FICIT 251
fīcus 101, 223
fidē 335
fideī 335
fidēlis 269, 305
fīdere 334, 396
fidēs 77, 245, 305, 334
fīdō 77, 245, 248, 266, 281, 396
fier 408
fierī 265, 396, 408
fierī 265
fiet 140
fifiked (Falisc.) 124, 385
fifiqod (Falisc.) 124
fīgī 213, 408
FIGIER 213, 408
fīgō 279
figulus 304
figūra 282
filea (Falisc.) 172
filea (Praen.) 172
fileai (Praen.) 172
fīlia 172, 180
fīliābus 320
fīliae 172
fīliī 179
fīliīs 320
fīlius 125, 172, 180, 284, 314
findō 261
fingō 56, 261, 282, 292, 304, 372
fīniō 375
fīnis 303, 375
fīnitimus 303
fīnxī 363
fīnxit 385
fīō 265, 396
fircus 182
Firmīliānus 296
Firmīniānus 296
Firmīnus 296
firmus 255, 303
fissus 354
fīsus sum 396
fīunt 265
fīvō (OLat.) 279
flaccus 61
flāgrum 304
flāvī 381
flectō 379
flector 393
flēmus 265, 397
fleō 265, 397
flēre 397
flēs 397
flexī 379
flō 381
flōrālī 286
Flōrālis 178
flōrēre 374, 382
flōruī 382
flōrus 183
flōs 13, 251, 287, 288, 323, 374
flūmen 257, 274, 304, 323
FLVS 251
FLVSARE 286
focus 101
fōdī 378
fodiō 260, 261, 378
foederātī 267
foedus 77, 245, 248, 266
foeteō 101
FOIDERATEI 248, 267
foied (Falisc.) 125, 172, 335, 343
for 395
forās 234, 351
forda 172
forem 246
foret 177
forīs 234
forma 305
formālis 305
formīdor 396
formōsa 287, 289
FORMOSSA 287, 289
formus 150, 283, 303
fortissimus 350
fortitūdō 269
fortūna 303
forum 272

fossus 261
foveō 282
FOVRIO 284
fragmentum 304
frangō 255, 304, 377
frāter 263, 281, 304
frātribus 326
frātrum 178, 326
fraus 101
frēgī 377
frīgus 284
fructū 332
fructuis 331
fructus 250, 257, 321, 330
fructūs 250, 331, 332
frūmentum 124
frūnīscor 234
fruor 395, 396
frutex 101
fūcus 193
fuga 373
fugāre 373
fugiō 253, 375
fugitō 229
fugō 373
fuī 185, 380
fūī (OLat.) 248
fuisse 285
fuissem 285
fuit 185, 266, 388
fūit 265
fulcrum 304
fulgor 298
fullō 166
fulmen 297
fulvus 306
fūmāt 268
fūmāvit 268
fūmus 248, 263, 276, 281, 282, 303
fundō 131, 255, 260, 261, 282
fūnebris 284
fungor 396
fungus 101
fūnus 284
Fūrī 285
Fūrius 284
fūsus 354
FV 215
FVLGVRIATOR 153
FVVEIT 388

gaesum 115, 287
Gallī 31
garriō 247
gaudeō 279
gaudēre 256
gaudimōnium 233
gaulus 193
gavisi 227
gemitus 409
gemō 101
genera 256
generī 408
generis 6, 68, 323
genetīvus 306
genu 243
genū 330, 331
genua 332
genus 179, 243, 276, 279, 283, 322, 323
germen 296
gerō 287, 379
gessī 380
gestus 287, 379
gibbus 298
gignō 375
glaber 282
gladius 115
glāns 280
glaucōma 192
glubeō 260
glubō 260
Gnaevō 206
GNAIVOD 206
gnātus 143, 276
gnōscī 213, 408
GNOSCIER 200, 213, 408
(g)nōscō 381
(g)nōtus 247
gnōtus 276
gracilis 101
gradior 282, 396
grāmen 184

grammatica 192
grātia 334
grātor 396
grātus 140
gravis 280
grex 260
grūs 330
gubĕrnābunt 264
gūfō 182
gustus 233
guttur 101

hă 361
ha ha (interj.) 361
ha (pron.) 213
habĕbit 219
habeō 253, 363
habēre 374, 381
habuī 381
habuisse 212
HABVISE 212
hāc 344, 351
haec 343, 344, 358
haec est fēmina quae tardē vēnit 89
haec(e) 213
haedus 44, 134, 182, 184
HAICE 213
haice 213
(h)ānser 183, 244, 282
harēna 134, 182, 287
hariolor 395
hariolus 182
harpagō 193
hārum 320
haruspex 257
HARVSPEX 153
hasta 134, 308
hastātus 308
hauriō 287, 376, 379
hausī 380
haustus 287, 380
HERCOLEI 207
hercule 207
hērēdēs 157
herī 287, 288, 351
hesternus 287, 288
hībernor 396
hic 343, 358
hīc 172, 315
hīc ... ibīdem 229
hiems 68, 150, 277, 281, 321, 322
hilarus 193
hileo (Falisc.) 125, 172
hilum 225
hinc 351
hinc ... indidem 229
hircus 134, 182, 183
hirūdō 101
hirundō 101, 302, 307
hīsce 315, 358
Hister 166
histriō 166
hoc 343, 347, 358
hōc 344
hodiē 125, 172, 335, 343
hodiernus 303
hominēs 325, 386
hominibus 326
hominis 253
homō 68, 184, 277, 302, 305
homŏ 265
homunciō 232, 233
homunculus 305
honc 244
honestus 133, 308
honor 5, 264, 265, 266, 288, 290, 323, 349
honōre 173
honōrī 173
Honorus 324
honōs (OLat.) 264, 265, 266, 287, 308, 323, 349
horā 218
HORAD 218
horda ("Rustic") 172
horrēre 382
horruī 382
hortō 314
hortor 396
hortōs 284
hortus 146, 312
hōsce 344
hostēs 329

hostibus 329, 333
hostis 243, 282
hostīs 329
hūc 315
hui 251
huic 344
huius 343
humerus 291
humī 174, 315, 325, 351
humilis 305
hunc 244

I 197, 404
iaciō 373
iactāre 373
iam 292, 351
iānitor 290, 304
iānitōs 290
iānua 304
IBEI 212
ibī 212
ibĭ 351
ibĭdem 351
id 185, 240, 258, 319, 337, 338, 342, 344, 347
idem 343
Īdem 258, 343
Īdūs 279
iecur 270, 274, 302, 323, 324
IEI 205
IEISTETERAI 205
igne 328
ignēs 329
ignī 328
ignibus 329, 333
ignis 175, 327
ignīs 329
ignōrantia 308
ignōscet 232
ignōtus 358
iī 315
il- 358
Īlicō 253
illa 344
ille 71, 234, 240, 256, 344
illepidus 292
illi 221
illī equī manent 89
illī lupī 315
illīberālis 358
illīc 268, 315, 351
illūc 315
illud 344, 347
illustris 293
im 343
im- 358
imāgō 302, 322
imbellis 294
imber 275, 326
imberbis 270
Īmīs 135
imitārier 275
imitor 302
immaneō 253
immodestus 277
immortālis 358
imperātor 307
imperātrīx 306
impetus 269
impleō 374
impotēns 292
Īmus 184, 189
imveni 239
in 87, 88, 258, 359
in- 11, 358, 359
in eā viā mediā 319
in illō locō stat 89
in urbe 86
inaurior 395
incīdī 378
incipiō 254
inclutus 308
Incubō 233
inculcō 255
indāgō 219
inde 256, 268
index 257
indigena 317
induō 219
induor 393
Īnferus 269, 349, 359
Īnfirmus 255

Infrā 258, 269, 304, 359
ingenium 314
ingrātus 277
inguen 273, 280
inhibeō 363
inhospitus 358
inimīcitia 268
inimīcum 316
inimīcus 268
initium narrātiōnis 85
iniūstus 267
inpendia 239
INPERATOR 217
inquam 385
inquid 239
inquit 239
Insānia 334
Insiliō 254
Inspeciōsus 233
Instar 309
Instituī 266
Institūī 266
Instruor 393
Insulsus 255
intemperiae 334
intemperiēs 334
inter 268, 350, 359
inter nōs 394
inter sē 394
inter vōs 394
intereā 316
interluitō 220
Interstitae 182
intestīna 233
intimus 254, 350
intolerāns 292
intrā 359
intumus 254
intus 351
INVCIEIS 315
veniō 359
invicem 394
invideō 305
invidia 305
IOVBEATIS 212
IOVE 248
IOVESAT 200
IOVESTOD 204, 246
Iovī 248
Iovis 213, 225, 271
Iovis pater 128
IOVXMENTA 204
ipsa 344
ipse 233, 344
ipsimus 233
ipsum 344
ipsus (Popular) 146
ir- 358
ircus 183
Ire 245, 248
Irī 409
irrāsus 292, 358
irrīdeō 294
irritus 253
IRVS 279
is 185, 234, 258, 319, 337, 342, 344
ista 344
iste 256, 344
istōc 232
istūc 232
istud 344
IT 240
it 74, 370
it urbem 88
ita 256
Ite vōs 132
iter 245, 302, 324, 408
Ithacae vīvere 86
Itur 178, 188
iubeātis 212
iubeō 212
iūdex 257, 301
iugom (OLat.) 312
iugum 245, 252, 270, 292, 372
iūmenta 204
iūnctus 258
iungō 258, 372, 375, 379
iungor 393
iūnior 269
iūniōrēs 256
iūnxī 258, 379
Iūpiter 271, 298

Iuppiter 270, 298
iūrat 200
iūrātus 309
iūs 270
iussī 379
iūstō 204
iūstus 246, 267
iuvenis 269, 307, 407
iuventūs 308
iuvĕntūte (Plaut.) 264
iuvō 101
iuxtā 358
IVOIS 200

kalsiosio (Falisc.) 172, 314
KALATOREM 204
KAPIA 204
KOM 202

labāscō 371
labō 371
labor 54, 288
labōs 287, 288, 290
lacerna 166
lacrima 279, 292
laena 166
laevus 249, 266
lagoena 193
lāna 272
lancea 115
lanterna 166
Lanuviei 315
lanx 101
lapide 325
lapideus 306
lapidibus 326
lapidis 324
lapis 306, 307, 321, 322
Lār 258, 286
Larēs 215, 258, 286
largē 233
largiter 233
larix 101
lartos (Falisc.) 172
Lases 215
lassus 354
lateō 371
latēre 194
Latōnās 318
lātrīna 272
latus 250
lātus 250, 294
laudāre 373
laudārī 408
laudārier (OLat.) 408
laurex 101
laurus 101
laus 101
lautus 250, 308
lavātrīna 272
lavātur 365
Laverna 166
lāvī 378, 380
lavō 254, 308, 378, 380, 393
lavor 393, 394
lectīca 134
lēctus 262
legam 402
legās 403
legere 325, 375, 402, 408
legerem 403
lēgī 378
legimus 254
legiō 306
legiōnārius 306
legis 268, 403
lēgistis 133
legit 294
lego 259
legō 270, 275, 370, 374, 375, 378
lembus 192
lēne 256
lēnis 256
leōne 325
leōnēs 325
leōnibus 326
leōnis 324, 325
lepor 288, 323
lepōs (OLat.) 288, 321, 323
lepus 158
levis 250, 350
lēvis 250

leviter 350
levor 393
lēx 128, 301
lībāre 266
līber 249, 266, 303
līberta 172
lībertātis 172
lībertīnus 303
libet 254
librum amīcae dat 89
licēre 101
liēn 323
lignum 243
līlium 101
lingere 279
lingō 379
lingua 9, 243, 279, 292
linquō 275, 372
līnxī 379
lippus 298
līquī 378
liquidus 204
lītera 298
lītigāmur 393
līttera 298
loca 318
locō 88
locus 101
loferta (Falisc.) 172, 249
logista 192
loifirtato (Falisc.) 172
LOIVQVIOD 204
longē 264
longitūdō 307
longulus 305
longus 244, 305
loquēla 298
loquēlla 298
loquimur 188
loquitor 229
loquitur 73, 188, 363, 365
loquō 233
loquor 101, 233, 396
losna (Praen.) 172
lōtus 250
LOVCANOM 206
LOVCARID 328
lubet 131, 254, 281
lūbricus 279
Lūcānum 206
lūcārī 328
lūcēre 308, 382
lūcidus 308
lūcus 204, 275
lūdificō 230
lūdificor 230
lūgēre 381
lūgubris 296
lūna 172
lupī 187, 194
lupī metus 85
lupos (OLat.) 68
lupus 9, 68, 182, 183
lurchō 166, 278
lūsōriīs 329
lūx 301
lūxī 381, 382
luxuria 334
luxuriēs 334

ma 239
macellum 193
macer 273
machaera 192
māchina 190, 291
mācina 190
macte 220
mactus 220
madidus 279, 292
maereō 101, 286, 289
magis 271, 349
magister 312
magisteres 315
magistrātuum 332
MAGISTRATVD 331
magnāī rēī publicāī 318
magnī aestimāre 314
magnus 69, 220, 302, 303
māior 271
male 264, 351
mālō 258, 272
MALOS 200

MAMARTEI 206
mamma 298
mancus 61
māne 309
manēō 253, 371, 379
MANIBIEIS 320
manica 253
MANO(M) 200
mānsī 379
manticinor 395
mantīsa 166
Manturna 166
manū 332
manubiīs 320
manum 331, 332
manuor 396
manus 257, 330
manūs 331, 332
mare 256, 327
maredus 279, 292
maria 328
marium 329
Mars 305
marsuppium 193
Martius 305
mās 287
massa 193
mataris 115
māter 68, 247, 263, 276, 304, 311, 321
Māter Mātūta 205
māteria 334
māteriem 335
māteriēs 334
mātrī 135
mātris 135
māvolō 272
maximus 69, 188, 303, 350
mē 157, 160, 200, 202, 338, 341
mē accingō 230
mē convertō 230
mea 239
(m)ecastor 196
mēcum 6, 81
MED 126, 197, 200
MED 202
mēd 338, 339, 341
med (Falisc.) 124
MEDACIA 237
meddix 129
medīdiē (Praen.) 296
medidies (Praen.) 182
medius 173, 245, 282
mehercule 207
meī 338, 339, 340, 341
MEINOM 200
meīs sociīs 202
mel 276
meletrīx 295
melior 69, 349
mellilla 229
mementō 405
meminī 378, 405
memorātuī 409
memorō 395
memoror 395
men- 152
mendācia 237
menerua (Falisc.) 172
Menervā 319
MENERVAI 319
menetrīx 295
mēns 257, 273, 301
mēnsa 311
mēnsis 284, 286
mēnsum 329
mente 302
mentior 396
mentum 184
MENVS 251
MEOIS SOKIOIS 202, 317
Mercurie 226
Mercurius 172
mereō 230
mereor 230
meretrīcius 305
meretrīx 295, 305
mergō 285
merīdiē 279, 292, 296
merīdiēs 182, 333
MERITOD 177, 314, 331
meritōd (OLat.) 314
merx 101, 173

mēsis 284
meus 338, 342
MHZEΣ 286
mi 239
mī 338
mīcārius 233
MIHEI 215
mihi 239, 265, 338, 341
mihī 215, 232, 338, 339
mihi est 86, 363
mīles 284, 308, 321
mīless 321
mīlia 357
MILITARE 284
mīlitāris 178, 284, 292, 296
mīlitiae 319
mīlitis 324
mīlitum 326
mīlle 298, 352, 357
mīllēsimus 357
mīllia 357
Minervae 172
minĭstērium 264
Minucius 207
minuō 372, 375
minus 132, 251, 349
MINVCI 207
mircurios (Praen.) 172
mīror 396
mīs 338, 339
miscēmur 393
miser 286, 289
mīsī 287, 288, 294
missus 289, 298
MITAT 198
mittat 199
mittit 198
mittō 289
mnēmosynum 193
modicē 264
modo 257, 264, 265, 351
modō (OLat.) 264
moechissāre 191
moechus 193
moenia 248
MOIRO 217
MOIROS 217
molere 375
molimus 375
mollis 274
molō 375
momordī 382
monē 263, 405
moneam 402
moneās 403
monēbam 398
monēbās 272
monēminī 304
monendī 406
monendus 307, 406
monēns 265, 323
monentia 325
monentis 308
moneō 254, 271, 371
monēre 373, 374, 381, 402, 408
monērem 403
monērī 408
monēs 265, 385, 403
monet 265
Monētās 318
monitūrum 408
monitus 309, 409
mōns 326
montem 255
monuerim 403
monuerīmus 403
monuerīs 402
monuī 254, 380, 381, 382, 398
monuisse 408
monuissent 403
monuistī 398
mordēre 382
mōrēs mutantur 393
morior 306
moriundum est 277, 292
moriundust 277, 292
mors 257, 274, 305, 326
mortālis 178, 305
mortuos (OLat.) 257
mortuus 306
mōrus 193
mōs 287, 321, 322, 323

mōtus 246
moveo 259
moveō 246, 380
moveor 393
mōvī 380
mulier 101, 288, 323
multa 351
multum 351
mundānus 303
mundus 166, 303
mūnior 393
mūnire 248
mūnus 200
mūrex 101
murmurō 369
mūrō 217
mūrōs 217
mūs 9, 247, 263, 276, 283, 301
Mūsa 287

nacca 166
nam 351
nārēs 287
nārīta 192
nāssum 287
nās(s)us (OLat.) 276, 289
nāsus 289
nātiō 188, 264
nātiōnis 172
nationu (Praen.) 172
nātūrālis 296
nātus 276
nauclērus 192
naufragium 246
nausea 192, 287
nauta 192, 311, 317
nautea 192
nāvem 273
nāvēs 328
nāvis 276
Naxium 147
ne 90, 358
nē 90, 358
NE ... TATOD 200
nē imponuntō 157
ne oin(om) (OLat.) 358
ne volō 90
nebula 281
nec 270
necessus 212
NECESVS 212
necō 374
nefās 309
negabit 239
negavit 239
negitō 229
NEI 202
nei 200
NEIQVIS 212
NEIQVIS VELET 211
nēmō 229
nēmō ... homō 229
nempe 358
nēmus 265
neō 265
nepos 223
nepōs 111, 251, 276
nepōtem 324
neptis 223
NEPVS 251
neque 87, 270, 358, 361
nēquid ... quicquam 229
NEQVIS 212
nēre 374
nesciō 90
nescit 237
neu 251, 361
neuter 348
NEVE 212
nēve 361
nī 200, 358
nīdus 285
nihil 258, 309
nīl 232, 258
ninguit 179, 283
NISEI 212
nisei (OLat.) 265
nisī 199, 212, 265, 286, 289
nītor 396
nivem 179, 281, 283
niveus 306
nix 285, 321

nōbīs 340
nocēre 374, 381
nocuī 381
NOISI 199
Nōlānī 315
nōlle 285
nōlō 90
nōmen 304, 323
nōmenclātor 232
nōmenculātor 232
nōmina 325
nōminātīvus 306
nōminis 213
NOMINVS 213
nōn 90, 358
nōn scit 237
nōnāgintā 356
nōnne 90
Nōnus 157
nōnus 246, 274, 352, 355
nōs 337, 340
NOSCI 237
noster 304, 340, 342, 349
nostrī 340
nostrum 340
nōtus 276
nova 69
novāre 52
novem 8, 242, 243, 272, 273, 274, 355
novēnī 357
noviē(n)s 357
novitās 253, 270, 308
novum 69
novus 69, 243, 272
nox 252
noxa 305
noxius 305
nūbō 379
nūgāx 233
nūllī 348
nūllius 348
num 90, 358
nūmen 274
Numeriō 125
numerus 149, 244
nummum 332
nummus 149
nunc 351
nūper 351
nūpsī 294, 379
nurus 252, 285, 311
nūtrīx 296

ō 361
ob 244, 359
obdormīscō 371
oblīvīscor 234
obsideō 253
obsidēs 206
occīdī 378
occulor 393
occupō 254
ocellus 229
oclopēctam 233
oclus 255, 269
Octāvius 305
octāvus 247, 305, 306, 352, 355
octiē(n)s 357
octo 264
octō 8, 244, 278, 306, 311, 355
octōber 355
octōgintā 356
octōnī 357
oculus 9, 233, 244, 255, 269
odefacit 279
ōdī 262, 378
odium 262, 378
odor 279, 288
odōs (OLat.) 287
oenus (OLat.) 352
offendō 294
offerō 261
officīna 255, 256, 269
offla 232
offula 232
OINO 277, 292
oinom (OLat.) 251, 292
oinos (OLat.) 352
OINVORSEI 212, 248
OINVORSEI VIREI 315
oleō 279
olēre 381

oleunt 233
olfaciō 279
ōlim 344, 351
ōlla 182
olla (OLat.) 221
olle (OLat.) 344
olleis (OLat.) 344
olli (OLat.) 221
ollo- (OLat.) 184, 189
ollos (OLat.) 344
ollus (OLat.) 221, 344
oluī 381
olunt 233
omāsum 115
ōminor 395
onerāre 254
onus 254, 270
ope 325
opera 224
operandam 177
OPETOIT 199
OPID 325
opifex 255, 269
opificīna 303
opīnō 230, 393
opīnor 101, 230, 393
opitulor 395
OPITVMA 216
oportēre 101
oppetere 199
opportūnus 303
Opscī 112
OPSIDES 206
optāre 199
optima 216
optimus 69, 254, 303, 349, 350
optō 101, 216
optor 393, 394
optumus 254
opus 287, 303
ōrāculārius 233
orbus 252
ordinis 257
ŏrdō 277, 354
orīgō 302
orior 302, 393, 396, 406
oriundus 406
ornāmentum 304
ornātī 331
ornīx 306
ornō 304
ornor 393
ōrō 101
ortae 319
ōs 305
Oscī 112
ōsculum 305
ōsus 262
ovēs 328
ovī 265
ovis 9, 51, 52, 244, 252, 257, 326

PACA 200
pācā 199
PACAR 200
PACARIVOIS 199
paedagōgus 192
paeniteō 101
pafo (Falisc.) 124, 125, 172
palaestra 193
Palēs 295
pallēre 382
palluī 382
palumbes 223
palūs 307
pānārium 306
pandor 393
pangō 261, 379
pānis 306
pānxī 379
papāver 101
pāpiliō 101
papilla 229
pār 258
[pa]rad (Falisc.) 124
parasītus 193
parcō 101
pāreō 101
PARI 202
PARIENS 236
pariēs 101, 236
Parīlia 296

parimus 376
pariō 202, 270
parissima 206
PARISVMA 206
pars fēminārum 85
pars hominum 175
partēs 328
partibus 333
partim 327
partimur 393
partium 329
partubus 332
parumper 351
parvus 306
passer 101
passum 332
passus 287, 289, 356
pāstor 247
pateō 371
pater 84, 244, 252, 270, 278, 304, 305, 311, 322, 324
paterfamiliās 126, 318, 335
patientia 308
patina 193
patior 287, 289, 356, 396
patrem 273
patrī 135, 408
patris 135
patrius 305
PATRVS 324
paucus 249
paulātim 351
Paulī domus 85
pauper 246
pauperiēs 334
pauperōrum 233
pauperum 233
pausārius 192
pauxillātim 229
pāx 128
pectō 379
pectus 184, 189
pede 176, 328
pedem 324
pedēs 279, 325
pedis 68
pedisequus 286
peior 69
peius 271
pelegrīnus 295
pellō 378, 379
pendeō 305, 371
pendēre 374, 382
pendō 371
pendulus 305
penes 358
penna 276
pependī 382
pepigī 379
pepulī 378, 379
per 87, 233, 351, 358
percolopō 233
perduelles 222
pereat 237
peregrīnus 295
perēs 279
PERIA 237
perībō 125
perīclum 304
perículum 304
permaneō 253
perna 306
pernīx 306
persōna 166
persuādeō 234
pēs 9, 77, 278, 301, 321
pessimus 69, 350
pessulus 192
pessum īre 409
petō 85, 276
petorritum 114
pexī 379
phalerātus 233
philosophia 278, 291
PHILVMENA 243
PHILVMINA 243
piger 101
PILEMO 291
pīlumnī populī 315
pilumnoe poploe 315
pipafo (Falisc.) 124, 125, 172
pirum 246

Pisaurum 286
placēre 308, 381
placidus 308
placuī 381
plānus 52, 303
platēa 193
plaustrum 251
plautia 172
plēbs 101, 295
plectō 260, 261, 379
plēnus 302
pleō 302, 381
PLEORES 212, 215
pleorēs 212
PLEORIS 215
plēvī 381
plexī 379
PLOIRVME 212, 315
plōstrum 182, 251
plotia 172
PLOVRMA 212
PLOVS 212
ploxenum 114
plumbum 101
plūrēs 215
plūrimī 315
plūs 212, 349
plūsculum 229
plūsscius 233
pōculum 148, 247, 304
PODLOVQVEI 197
poena 248
Poenulus 248
Poenus 248
poeta 317
polliceor 396
pollūcētō 220
pōmērium 266
ponderis 323
pōnō 255, 258, 286
pōnor 393
PONTEIS OMNEIS 329
popa 166
popīna 182, 183, 278
POPLICOD 213
POPLIOSIO 206, 271
POPLIOSIO VALESIOSIO 172, 314
poploes (OLat.) 317
populīs 317
Populōnia 166
populus 166, 175, 250
pōpulus 250
porca 187
porcellus 256
porcus 243, 252
p[ore]kad (Falisc.) 124
porgō 255, 269
porriciae 128
porrigat 124
porrigō 255, 269
porrigor 393
porta 175, 311, 317
portā 319
portae 318, 319
portam 318
portāre 199
portārum 316, 320
PORTAS 217
portās 320
portīs 320
poscō 274, 372, 375
positus 255, 286
posīvī 286
posse 408
possit 213
possumus 254
post 88, 157, 256, 359
posterus 255
posthabeō 253
postrīdiē 255
postus 255
potior 396
potis 68
potis sit 213
POTISIT 213
potō 148
pōtus 304, 309
POVMILIONOM 326
prae 173, 176, 234, 359
praeceps 351
praecipitor 393
praedicor 395

praesentēs 161
praesentīs 161
praeter 132, 350, 358
praetor 306
praetōrium 306
praetōrius 306
praevideō 253
prandēre 374
prandium 374
precor 396
PREIVATOD 213, 314, 325, 328, 331, 335, 338
preivātōd (OLat.) 314
prēlum 304
premō 304
prīdem 343, 353
prīmō 351
prīmulum 229
prīmum 351
prīmus 285, 303, 309, 350, 352, 353
prīmus et decimus 356
prīnceps 321, 322, 324
prīncipum 332
priscus 285, 353
prīvātō 213
prō 258
Proculus 232
prō(d)- 359
proficīscor 396
prōmuntorium 255
prope 88, 187, 354
propterea 316
prōra 192
prōsiciae 128
protinam 222
protinus 222
proximus 350
proxumae vīcīniae 319
prūdēns 246, 256, 269
psaltērium 193
-pse 344
psithius 193
ptisana 192
pūbēs 323
Publī Valerī 172, 314
pūblicō 213
puella 305
puellīs 267, 348
puellus 305
puer 225, 305, 313
puer dōnum mātrī dedit 86
puera 225
puere 313
puerīs 348
puerum terret 84
pulcher 166
pulmō 296, 304
pūnicus 248
pūnire 248
puppis 328
pūrē 264
purgō 269
purigō 269
purpureus 291
puta 264
putā 264

quā 319, 348
quadrāgintā 316, 356
quadrigae 354
quadringentī 356
quadrō 354
quae 177, 216, 239, 319, 345, 346, 347, 348
quaeritō 229
quaerō 266
quaesō 266, 287, 289
quam 347
quamde 351, 358
quandō 351
quandōque 131
quanta 179
quanti 224
quanto 224
quantumquantum 229
quārtus 309, 352, 354
quārtus decimus 356
quārum 348
quās (acc.) 348
quās (nom.) 319
quasei (OLat.) 265
quasi 265

quater 354, 357
quaternī 357
quattuor 8, 189, 246, 278, 309, 353, 354
quattuordecim 355
-que 87, 147, 158, 268, 361
que 239
quem 347
quem nāvī abīre vetuī 86
quercus 187, 298
querneus 298
queror 287
quēs (OLat.) 348
questus 287
quī 132, 139, 177, 179, 204, 206, 212, 213, 233, 345, 346, 347, 348
quia 234, 351, 361
quibus 136, 348
quicquid 177
quīcumque 347
quid 71, 139, 177, 245, 252, 279, 345, 346, 347
quid ... quicquam 229
quīdam 285, 347
quidem 343
quīlibet 347
quīn(c)tus 309, 352, 354
quīndecim 355
quīnī 357
quīnquāgintā 356
quīnque 8, 187, 278, 294, 298, 309, 354
quinquiē(n)s 357
Quintus 291
quīntus 298
quīntus decimus 356
quippe 294, 351, 358
quis 71, 131, 177, 179, 213, 233, 245, 252, 278, 345, 346, 347
quīs 348
quis ... quisquam 229
quis vēnit 90
quisnam 345
quispiam 347
quisquam 345
quisque 344, 347
quisquis 177, 347
quīvīs 347
quō 187, 348
quo tempus 239
quod 71, 131, 177, 216, 234, 240, 345, 346, 347, 361
quoi 179, 347
quōr 278
Quorta (Praen.) 354
quōrum 348
quōs 132, 348
quotīdiānus 272
QVAESSO 287, 289
QVEI 206, 212
QVES 213
QVM 217
QVOD 216
QVOI 204
QVOIEI 347
QVOIVS 206, 216, 347
QVOM 212, 213
QVOT 240
QVROIS 197

rabiēs 334, 335
rādīx 272, 276
raeda 114
rāmus 276
rapere 308, 373, 374
rapidus 308
rapiō 253, 374, 375
ratiō 323
ratiō[n] 321
ratiōnem 324
Ravenna 166
rē 335
rēbus 336
RECEI 204
rected (Falisc.) 177, 314
rēctus 262, 309
recurvus 255
reddere 254
reddidī 387
reddimus 375
REDIDEI 387
REDIEIT 388
rediit 388
rēgālis 301, 305

regam 398
rege 269
regentis 308
regere 373, 374
regēs 179, 398
rēgī 204
rēgīna 303, 314
rēgna 251
regō 20, 260, 374, 379, 384
rēgulus 301, 305
REGVS 324
reī 335
rēī 335
religiōsae 287, 289
RELIGIOSSAE 287, 289
religiōsus 269
relīquī 266
reliquid 239
reliquit 239
rēmex 257, 260, 321
rēmus 274
rēn 323
reperīmus 376
reperiō 270
repperī 270
RE(PRO)MEISS- 287
rērum 286, 336
rēs 333, 336
rēs pūblica 142
resēminet 286
retrō 264
rettulī 270, 378
rēx 186, 263, 275, 305
rēxērunt 383
rēxī 379, 398
rēximus 383
rēxistī 398
Rhēnum trānsīre 88
rhētorissāre 191
rīdeō 233
rīdeor 233
rīdēre 381
RIGNA 251
rīsī 381
RIVOIS 199, 200, 202
rīvus 199
rōbur 308, 323
rōbustus 308
rōdus 182
rogāre aliquem aliquid 84
Rōma 303
Rōmae 317, 319
Rōmai 319
Rōmam vēnit 89
Rōmānus 303
rōs 287
rosa 101
rosārum 316, 336
rosīs 267
rota 243, 307
rotundus 307
rubeō 371
ruber 125, 150, 172, 245, 252, 275, 304, 313
rubēscō 371
rudit 73
rūfus ("Rustic") 125, 172, 183
rumpō 375
rūre 174, 325, 407
rūrī 325, 351
rūsticus 307
RVFEIS 315

s(a)cēna 101
sacer 204
sacer esset 313
sacerdōs 134, 308
sacerdōt- 247
SACROM 207
saeclum 304
saeculum 189, 304, 305
saepiō 376
saeviō 375
saevus 375
sagāx 306
sagīna 166
sāgiō 184, 306
sagum 115
SAKROS ESED 313
sakros (OLat.) 204
sāl 258, 275, 301, 322
salem 324

salictum 308
[SAL]IEI 205
[Sal]iī 205
saliō 254, 270, 275, 375
salīre 376
salsus 255
salūtis 172, 257
salutus (Praen.) 172
SALVTES 324
sam 342
sanciō 376
sanguen (OLat.) 292
santerna 166
sapere 142
sapsa 342
sarmentum 297
sarpō 297
sās 342
satis 351
satullus 256
Sāturnus 166
saxa 134
scabō 260
scābritia 334
scābritiēs 334
scaena 193
scamnum 294
scandō 254
scelera 325
sceleris 323
schēma 233
scīscitō 229
scomber 192
scrībo 259
scrībō 260, 304, 379
scrīpsī 379
scrīptae (-ī) sunt 400
scrīptor 304
scrīptum est 277, 292
scrīptust 277, 292
sculna 166, 317
scurra 166
scyphus 193
sē 71, 234, 337, 341
sē ipsum 344
secāle 150
secō 128
secundum 351, 358
secundus 255, 307, 353
secundus et decimus 356
secus 309
secūtus 272
SED 341
sed 279, 338, 361
sē(d) 337
sēd 341
sēdecim 355
sedeō 261, 287, 356, 371, 377, 378
sedēre 334, 374
sēdēs 334
sēdī 378
sedīle 327
sēdimus 185
sēdulō 254
sella 275, 294
semel 243, 353, 357
sēmen 246, 263, 274, 304
sēmi 276
sēmimodius 296
sēmodius 296
SEMOL 243
semper 351
senātī 331
senātor 306
SENATORBVS 326
senātōrius 306
senātuis 331
senātus 330, 331
senātūs 267, 331, 332
SENATVEI 331
SENATVOS 331
senex 69, 307
sēnī 357
senibus 340, 341
senior 69
sēnsī 379
sententiā 213, 264, 279, 295
SENTENTIAD 177, 213, 264, 279, 295, 319, 328, 331, 335
sententiād (OLat.) 177, 319
sentīmus 376
sentiō 255, 376, 379

sentīre 373
sēparor 393
septem 8, 283, 309, 354
septendecim 355
septēnī 357
septiē(n)s 357
septimus 303, 309, 352, 355
septuāgintā 356
sequere 404
sequeris 390
sequī 408
sequiminī 304, 391
sequimur 391
sequitur 283
sequor 50, 73, 77, 255, 272, 278, 283, 305, 307, 353, 365, 389, 390, 395, 396, 405
sequuntur 391
seriēs 334
serm- 204
sermō 204, 323
serō 246
sērō 264
serve 313
servei 267
servī 179
serviō 375
servoi (OLat.) 179
SERVOM 218
servōrum 316
SERVOS 257, 312, 313
servum 218
servus 255, 257, 375
sessus 185, 262, 287, 354, 356
seu 251
sevērus 272
sex 8, 309, 354
sexāgintā 356
sexiē(n)s 357
sextus 309, 352, 354
sī 289, 342
sī quis 142, 169
sī vīs 272
SIBEI 212, 324
sibei (OLat.) 265
sibi 265, 341
sibī 212, 234, 324, 341
sīc 342
Sicilia 254
Siculus 254
sīdō 258, 294
SIED 385
sied (OLat.) 200
siem (OLat.) 177, 402
SIENT 213
siēs (OLat.) 177, 246, 402
siet (OLat.) 73, 200, 385
sileō 184
silva 292, 306
silvāī frōndōsāī 318, 335
sim 177
similis 243, 305, 353
simplex 353, 357
simul 243, 353, 357
simulācrum 296
simulor 393
sīmus 247, 403
sinās 215
sine 86
singulus 353
sinister 304, 342, 348, 349, 350
sinō 289
SINS 215
sint 213, 386
sīquis 131
sīs 177, 272
Sīsenna 166
sistō 205, 284, 370, 375
sitim 327
sitīre 376
sitis 328
socios (OLat.) 301
socius 77, 305
SOCIVM 316
socruis 331
socrus 311
sodālēs 204
sodālis 206
sōl 275, 322
soldus 255
solidus 255
sōlus 348

solvō 243, 375
solvor 393
somnus 272, 276, 294, 302
sorbeō 260
sorbō 260
sord- 204
soror 243, 272, 286
sōs 342
SOVEIS 320
speciō 278, 283, 371
spem 335
spērāre 334
sperēs 334
spernō 375
spēs 333, 334
spinter 193
splendēre 382
splenduī 382
spondeō 378
spondēre 382
spopondī 378, 382
sporta 190
stabulum 282, 284, 296, 304
stant 402
stāre 247, 304, 317, 373, 402
statim 327, 351
Stator 205
status 244
statūtum 142
stega 192
stēlla 298
stem 402
stent 402
sternō 372, 381
sternuō 372, 375
STETERAI 205
stetī 378, 398
stetisse 408
stetissem 404
stetistī 398
stīpendium 296
stirps 223
stō 278, 378, 397
stoltus 244
strāvī 381
studeō 305
studium 305
stultus 244
suādeō 272, 379
suādēre 381, 382
suāsī 379, 381, 382
sub 88, 359
subferō 295
subitō 289
subscrībō 297
subsistō 297
subter 350, 359
sūbulō 166
subvocāvī 380
sūcōsus 233
sūdor 248
sueq (Praen.) 172
suggerō 294
suī 341
suīs 320
suīs Mānibus 136
suīsque 172
sulcus 184, 244
sum 178, 180, 185, 201, 231, 239, 256, 287, 289, 290, 342, 365, 369, 384, 385
sūmitō 220
summus 303, 350
sūmō 344, 379
sumpse 342
sūmpsī 344, 378, 379
sūmptī facere 314
sumus 178
sunt 178
suntō 219
super 88, 304, 359
superus 349
suppetior 395
supplicor 395
suprā 213, 303, 351, 359
suprēmus 303
surgō 256
sursum 232
sūs 9, 248, 263, 330
suscipiō 297
susque dēque 88
sustineō 270, 297

sūsum 232
suum 239
suus 341, 342
SVODALES 205, 206
SVPRAD 213
sȳcophanta 193
syllaba 192
symbolus 192
syngraphus 192

TABELAI 212, 213
TABELAI DATAI 318
tabellae 212, 213
TABERBER 215
taberna 166
tābēs 215
TABOLAM 212
tabulam 212
taceō 184, 371
taceor 393
tacēre 374
tacitus 309
tacuī 382
taedet 354
taeter 354
tālis ... quālis 234
tam 294, 342, 351
tam ... quam 234
tam dūrum 292
tamen 343
TAN DVRVM 292
ta(n)g- 142
tangō 21, 255, 375
tardiusculus 229
Tarentum 270
tarpessīta 296
TATOD 200
taurus 173, 182
te 220
tē 199, 200, 339, 341
tēctus 262
tēcum 81
TED 200
tēd 339, 341
tegō 77
tempestās 323
templa 256, 316, 318, 328
templōrum 316
tempus 323
tenāx 306
tendit 157
teneō 270, 306, 378
tentus 273
tenuī 378
tepēre 308
tepidus 308
ter 357
tergus 283
terminăta est 400
terra 184, 189, 306
terrae frugiferae 223
terrai frugiferai 223
terrās 318
territōrium 306
tertiō diē vēnit 89
tertius 353, 357
tertius decimus 356
TESIAI 200
testis 297
tetigī 377
tetinī 378
thensaurus 277, 292
thēsaurus 277, 291, 292
Tiberis 166
tibi 267, 339, 340, 341
tibī 339
timēre 308
timidē 264
timidus 308
tingō 243
tinniō 125
tintinnō 125
tīs 339
TITA 126
toga 77, 318
togā 319
togae 318, 319
togam 318
togārum 320
togās 320, 336
togīs 320
tollō 154

tondeor 393
tondēre 382
topper 294, 351
torpēre 382
torpuī 382
torqueō 379
torqueor 393
torreō 295
torrēre 374, 382
torruī 382
torsī 379
totondī 382
tōtus 175, 348
trabs 279
tractō 254
tractus 261
trahō 260, 261
trāns 189
trāns Rhēnum īre 88
trapēzīta 192, 296
TREBIBOS 326
trecentī 356
tredecim 355
TREMONTI 386
trēs 8, 149, 150, 271, 278, 352, 353
tria 353
tribibus 326
TRIBOS 202
tribubus 332
tribūlus 305
tribum 331
tribūnus 303
tribus 202, 305, 331
tribūs 331
trīcēsimus 356
trīgintā 316, 356
trīnī 357
triplex 357
tristimōnium 233
triumpus 190
Trivia 202
TRIVOIAI 202
trullissāre 191
tū 258, 337, 339
tū manēs 89
tuenda est 406
tuendus est 307
tueri 221
tuī 339, 340, 341
tum 342, 351
tumeō 304
tumulus 304
tundō 378
turrim 284
turris 327
Tu(r)scī 111
turtur 257
tus 239
tūs 291
Tuscī 108
tussim 327
tussiō 375
tussis 326, 327, 328, 375
tuta 126
tūte 229
tutudī 378
tuus 239, 339, 342
TVRREIS 217

ūber 249
ūbertās 233
ūbertim 233
ubi 265
ubī 212
ubĭ 351
ubiubi 229
uino (Falisc.) 125
uinom (Falisc.) 124
ūllī 348
ūllius 348
ullum 225
ūllus 256, 298
ulmus 187, 274
ulterior 344
ultimus 350
ultrā 71, 184, 186, 189, 264, 344, 358
ultrō 186, 344
umbilīcus 307
umbō 307
umerus 244, 292
ūnctito 259
uncus 244

unda 296
unde 343, 351, 358
ūndecim 270, 355
ūndecimus 356
ūndēvīcēsimus 356
ūndēvīgintī 355
ungo 259
unguis 244
unguō 280
ūniversī 212, 248
ūniversī virī 315
ūnum 251
ūnus 8, 248, 352
urbānus 303
urbe 229
urbs 101, 295, 303, 321
urceātim 233
urceus 233
urgeō 379
ūrō 246, 249, 267
ursī 379
ursīna 233
ursus 274
ussī 380
ustus 246, 379
ūsū 331
ūsus 287, 288, 289
uter 345, 348
uterque 394
utī 212
ūtī 408
utinam 212
ūtor 287, 289, 396
utra 348
utrum 348
uxorcula 229

vae 361
vagābundus 307
vagō 230
vagor 230
valdē 269
valeat 237
valēre 132
Valeriī 285
VALESIOSIO 206, 271
VALIA 237
validus 269
Vārrō 287
Vārus 287
vastus 184
vātēs 184, 186, 327
vāticinor 395
VBEI 212
-ve 90
VEDES 237
vehō 243, 272, 281, 282, 370
VEIVONT 386
veixsit 215, 216
vel 258
velim 177, 402, 403
velīnt 265
velīs 177
velle 175, 177, 211, 243, 244, 275, 285, 294, 295, 408
vēlōx 306
vendēs 237
VENDIAS 126
VENERES 324
vēnerit 177
Venerius 305
veneror 395
Venerus 324
venī 263
vēnī, vīdī, vīcī 90, 91
veniam 402
veniās 403
vēnimus 185
veniō 179, 273, 279, 375, 377, 397
venīre 376
venīs 403
ventus 273
vēnum īre 84
Venus 132, 305
verbum 275, 282, 316
verēbāminī 265
verēbar 265
vereor 396
Vergilie 226
vergor 393
verna 166
verpa 166, 317

versāre 373
versor 393
versus 244, 351, 358
vertīgō 302
vertō 302, 374
vertor 363, 393
Vertumnus 166, 391
VERTVLEIEIS 315
verū 330
verua 332
vērum 351
vērus 184, 304
vervex 101
vescor 396
vester 244, 304, 340, 349
vestītū 331
vestrī 340
vestrum 340
vetat 237
veter 226
vetō 233
Vetulōnia 166
vetulus 229
vetuō 233
vetus 134, 226
vēxī 377, 379
VHE[CED] 126
via 317
viae 195
viāriīs 286
VIAS 195
viās 176, 195
VIASIEIS 286
vīcēsimus 356
vīcīnus 303
vicissim 296
victima 184
victor 275, 304, 307, 322
victrīx 307
vīcus 248, 271, 303
Vīcus Tuscus 108
vidēns 269
videō 261, 271, 272, 287, 289, 292, 372
videō currentem 90
vidēre 374, 382
vīdēre 363, 388
vīderunt 388
vīdērunt 363, 388
vīdī 248, 378, 382, 387
vīdimus 388
vīdistī 387, 388
vīdistis 387, 388
vīdit 388
vidua 245, 252, 281, 282
vigil 322
vīgintī 311, 356
vīlla 298
vim 327
vinciō 304
vincitō 219
vincō 304
vinculum 304
vindicit 219
vīnum 101, 124, 125, 142, 147, 157
vir 246, 304, 312, 313
VIREI 212
virgineus 306
virgō 306
viri 264
virī 212, 264, 318, 335
virō 265, 314
VIROIS 200
virōs 258, 277
virtūs 308, 321, 322
virtūtī 206, 324
VIRTVTEI 206, 324
virum 268, 277
virumque 268
vīrus 263
vīs 247, 263
vīsō 372, 375
vīsus 185, 287, 288, 289, 354
vīta 318
vitellus 256
vīvitō 219
vīvō 306
vīvos (OLat.) 257
vīvus 150, 158, 247, 263, 279, 306
vīxit 215
vōbīs 340
vocō 77, 271
Volcānus 154

volet 219
volo 264
volō 235, 243, 253, 264, 275, 306
volŏ 265
Volturnus 166
volumus 254
volŭntāte 264
volŭptātēs 264
volvendus 307
volvō 375
volvor 307, 393
volvuntur 365
vomere 375
vomimus 375
vomit 375
vomō 375
vorsus (OLat.) 244
vōs 337, 340
voster 244, 342
vostrum (OLat.) 340
VOTA 237
voveō 283
vōvī 378
vōx 77, 247, 263, 278, 301, 322
VRNA 126
VTARVS 257
VTEI 212
VTIER (OLat.) 408
vulpēs 327

2. Albanian

bë 248, 266, 281

dhjetë 8
dhunë 272
dy 8

është 178

gjashtë 8

jam 178

ka 9
kap 244
katër 8

mi 9
mjal 276
motrë 10
muaj 10

nduk 249, 267
nëndë 8
një 8
nji 8

pas 359
(për)posh 9
pesë 8
plot 10

shtatë 8
sy 9

tetë 8
thi 9
tre 8
tri 8

ulk 9

3. Anatolian
(Hitt. unless marked)

adant- 308, 309
akuwant- 309
azu(wa) (Hier. Luw.) 9

dā- 8
dai- 247
daiš 369

ε-δοες (Phry.) 36, 369
ešari 363
ešer 388
ešḫaḫari 363
ešmi 178, 243, 384
eštari 363

ešzi 178, 370

genu 243

ḫanti 52, 87, 244, 256
ḫarkiš- 52
ḫawi- (Hier. Luw.) 9, 52, 244, 252
ḫulana 272

iukan 270

kard- 9
kaš 70
kišama- (Luw.) 75
kuiš 71, 245, 252, 345
kuiš apāš 90
kuit 71, 345

lamniia- 371

maklant- 273
meḫur 52
memaš 387
memišta 387
mer- 10
milit- 276
mir- 10

na(tta) 87
nepiš 281
newa- 272
newaḫḫ- 52

paḫšzi 247
palḫi- 52
pata- (Hier. Luw.) 9
piran 87

šakuwa 73, 365, 396
šipta- 8
šumēš 340

tāyazzi 200
tēkan- 68
teri- 8
Truisa 111

uk 70, 243, 252, 338

waḫanzi 52
wekmi 370
weriia 275
wēš 339

zik 70, 339

4. Armenian

akn 9
amis 10
awcanem 280
ayl 71
ayn 71
ays 70

ban 247
berem 275, 281
berer 90

cin 10, 276, 279
cunr 243

č'ork' 8

eber 36, 369
elbayr 10
em 243
erek' 8
erku 8
err- 357
ēš 9
ev 87
ewt'n 8

gan 283
gayl 9
geł 275
gog 283

hayr 10
hing 8
hoviw 9

inn 8, 273

jiwn 68

kałin 280
k'arr- 357
kov 9
k'oyr 10
krkin 357

lezu 9
li 10
loys 275

mayr 10
mełk 274
mełr 276
mi (not) 90
mi (one) 8, 10, 368
mukn 9, 276

nist 285

otn 9

sirt 9

šun 9

tam 279
tasn 8, 38

ut' 8

vay 361
vec' 8, 354

5. Baltic
(Lith. unless marked)

akìs 9
añtras 353
ariù 275
àš 338
àš négeriu 90

ašìs 252, 284
aštuonì 8
ašvà (OLith.) 9, 50, 68
atvérti 272
auklipts (OPruss.) 278
ausìs 250, 267
avìs 9

brólis 10

dantìs 69
degù 282
dẽšimt 8, 38
devynì 8
dù 8
dubùs 54
dukterìms 326
dúmai 248, 263, 276, 282
dúok man dúonos 85
dúomi (OLith.) 279, 370
duõs 379
dýgti 280

esmì (OLith.) 178, 243
ẽsti (OLith.) 178
ešvà (OLith.) 9, 50, 68

giléndra 280
glodùs 282
gorme (OPruss.) 283
gùovs (Latv.) 9
gùrstu 280
gývas 247, 263

iř 87
iš-man-ý-ti 271

jāknos 270, 324
jùngiu 372
jũs 340

kaĩp 358
katràs 345
káulas 249
keturì 8
ketverì 246

kraũjas 59
krùvintas 308
kuř 351

laũkas 275, 301
liekù 372
liežùvis 9

maĩnas 248
man ir grāmata (Latv.) 86
máuju 246
mazgóti 285
měnuo 10
mẽs 339
miřti 10
mirtìs 274
mótė 10

nósis 287
nozy (OPruss.) 276, 287

pãdas 9
paršas 243, 252
penkì 8
peř 87
pìlnas 10
pìrmas 353
piršti 274

rasõs 318
rãtas 243
rùdas 245, 252

sėdėti 371
sekù 283
semen (OPruss.) 274
septynì 8
sesuõ 10, 243
sirna (OLatv.) 275
sivẽns (Latv.) 9
slõbti 54
snãju (Latv.) 374
snãt (Latv.) 374
sniẽgas 283
sėmenys 246, 263
stóju 284
suvẽns (Latv.) 9

šẽ 358
šešì 8
šiřntas 38, 59
širdìs 9, 274, 279
šìs 70
šuõ 9, 276

tàuta (Latv.) 183
tauto (OPruss.) 183
trobà 183, 279
trỹs 8
tėvai 315
tù 339
tveriù 272

vařdas 282
vežù 243
vil̃kas 9
víenas 8
výras 304

žąsìs 244

6. Celtic
(OIr. unless marked)

adaig 244, 279
adtáu 247
airim (MIr.) 275
alim 184
alt (MIr.) 275
am 178
Ambrā (Gaul.) 275
anál 276
artuaš (Gaul.) 144
Ategnatõs (Gaul.) 143
ateknati (Gaul.) 143
athir 10, 244
áu 250, 267

beo 279
bera 188, 402
berir 188, 389, 391

biu 279
bó 9
bráth(a)ir 10, 281

cacht 184
caech 249
cé 70
cern (MIr.) 275
cét 38, 273, 278, 356
ceth(a)ir 8, 189
cia 278, 345
cid 345
cloth 275
co 359
cóic 8, 187, 354
com- 184, 189
cride 9, 279
cú 9
cuaille (MIr.) 249
cúan 244
-Cue (Celtiberian) 147

damnaim 276
dán 247, 263
dáu 8
deich n- 8, 38
den 272
dí 184, 189
di (Bret.) 184, 189
digen 282
dó 8
domoiniur 273
domun 54
Dubnorīx (Gaul.) 54

ech 9, 272
enech 9
Eporēdia (Gaul.) 95
ess- 359

fáith 184, 186
fás 184
fedb 282
fer 304
fī (MIr.) 263
fír 184

foccul 271

gaibid 363
gáir 247
gein 10
gnāth 247
gonim 283
gūaire (MIr.) 279
gweler (Wel.) 188
gwraidd (Wel.) 272

hoedl (Wel.) 189
hoetl (OBret.) 189
huisse 270

ieuru (Gaul.) 380
imb 280, 281
is 178
ís 9
íse 184, 189
isel (Wel.) 184, 189
išos (Lepontic) 146

kalite (Lepontic) 146
kar- (Gaul.) 143
karite (Lepontic) 146
karnitu (Gaul.) 143
koisis (Gaul.) 144

labrafammar 188
-labrathar 73, 365
labrimmir 188
labrithir 188, 363
lán 10
latumarui (Lepontic) 147
léicid 275, 372
lem (MIr.) 184, 187, 274
lokan (Gaul.) 143

mant (Wel.) 184
maqī (Ogham Ir.) 187, 314
marb 10
máthir 10, 247, 276
mí 10
móin 248

našom (Lepontic) 147
náu 276
nessaf (Wel.) 188
nessam 69, 188
net (MIr.) 285
ní 246
nói n- 8, 273, 355

ocht n- 8
óen 8, 248
ói 9
olc 9
orbe 252
orc (MIr.) 243, 252

palam (Lepontic) 146
pe (Lepontic) 147
Pelgus (Lepontic) 146
pelkui (Lepontic) 146
petguar (OWel.) 189
Plioiso (Lepontic) 188
pruiam (Lepontic) 146

ráid 275
rhych (Wel.) 187
rí 186, 263, 275
rofess 185
rúad 275

saigim 184
salann 244, 275
saltraid (MIr.) 275
sapsutai (Lepontic) 147
scaraim 187
sé 8
sechithir 278, 283
secht n- 8, 283
síl 246, 263
siur 10
snigid 283
suexos (Gaul.) 354

tall 71, 184, 189
tan 273
teng 9
teu (Lepontic) 146
tíasu 188
tír 184, 189
toimtiu 188
tra- (Wel.) 189
treb (OWel.) 183, 279
tress 297
tri 8, 271
truti (Gaul.) 144
trutikni (Gaul.) 143
trutiknos (Gaul.) 144
túath 183
tūd (Wel.) 183

ucht 184, 189
uinom (Lepontic) 147

χosioiso (Lepontic) 188

ysgar (Wel.) 187

7. Germanic
(Goth. unless marked)

ahsa (OHG) 252, 284
ahtau 8, 244, 278
ahva 180
ains 8, 248
aiz 249
aka (OIc.) 252
akrs 304
ala (OIc.) 184
alds 275
aljis 71, 245
almr (OIc.) 184
Americanize (Eng.) 47
ams 244
an 358
anasilan 184
ancho (OHG) 280
arbi 252
arjan 275
at 244, 359
aþnam 184
augō 9
aukan 249

ausō 250, 267

bai 247
baidjan 281
baíran 243, 275, 281, 370
baírand- 75
barr (OIc.) 184
beidan 248, 266
bēo (OE) 185
bi 244
bōn (OIc.) 247, 263
bøn (OIc.) 247, 263
brōþar 10, 263
brōþrum 326
bubble (Eng.) 4
buzz (Eng.) 4

capitalize (Eng.) 47
conflict (Eng.) 64
creep (Eng.) 21

dagōs 315
digandin 372
dīkin (OIc.) 280
diups 54

eis 343
eit (OHG) 249, 266
ëlmboum (OHG) 274
eoh (OE) 9
Ēomēr (OE) 95
eorþlīc (OE) 301
ēr (OHG) 249

fadar 10, 278
fallan (OHG) 283
far(a)h (OHG) 243, 252
fawai 249
ferre 157
fidwōr 8, 246, 278
fimf 8
forsca (OHG) 274
forscōn (OHG) 372
fōtus 9, 278
fruma 353
fulliþs 308
fulls 10

gaits 184
gamains 184, 248
gamaúrgjan 282
gamunds 273
gans (OHG) 244, 282
gaqumþs 273
gasts 243, 282
gatamjan 276
gateihan 248, 278
gawigan 272, 282, 370
gibōs (gen. sg.) 187, 318
gibōs (nom. pl.) 195
giutan 282
giwis(s) (OHG) 185
glaðr (OIc.) 282
goat (Eng.) 44
gras 184
gras (OHG) 184
grid 282
guma 184

-h 90
hafjan 245
haft (OHG) 184
-hafts 244
haihs 249
haírtō 9, 274, 279
háitada 73
halam (OHG) 303
halm (OHG) 303
hals 184
hals (OIc.) 184
haptr (OIc.) 184
haúrn 44, 275
he goes (Eng.) 74
heffu (OHG) 185
hevis (OHG) 185
hevit (OHG) 185
hlamōn (OHG) 184
hlēfum 377
hlifan 278
hliuma 275
hund 38, 273, 278, 356
hunds 9, 11, 276

hwa 345
hwar 351
hwas 345
hwaþar 345
hwaþrō 186
hwō 345

iddja 248
ija 185
ik 70, 243, 338
im 11, 178
in 87, 359
ina 70, 343
ins 343
is 185
is (OE) 185
ist 13, 178, 252, 370
ita 185
itan 252

jáinþrō 186
jenēr (OHG) 71
juk 245, 252
jūs 340

kaúrjōs 280
kuni 10, 11
kýr (OIc.) 9

laks (Yiddish) 41
leihwan 275
lēkeis 275, 370
līc (OE) 301
liufs 281
liuhaþ 301
lox (Eng.) 41

Macht (Germ.) 220
man (Eng.) 4
managists 69, 350
managS 69
manasēþs 246, 263
maúrþr 10, 11
mēl 52
mēna 10
mēnōþs 10, 284
midjis 245, 282
might (Eng.) 220
mōðir (OIc.) 10, 11, 263
munt (OHG) 184
munþs 184
muoter (OHG) 247, 276
mūs (OHG) 9, 11, 247, 263, 276

nahts 252
namnjan 371
nasa (OHG) 276
nē 246
nebul (OHG) 281
nest (OHG) 285
nevo (OHG) 276
ni(-h) 87, 90
niu 90
niun 8, 11, 272, 355
niunda 246

ō 361
økkr (OIc.) 273, 280
ouwi (OHG) 9

paternal (Eng.) 4
popularize (Eng.) 47

qēmum 185, 377
qiman 279
qius 279
quickly (Eng.) 301

rad (OHG) 243
raúþs 275
rebel (Eng.) 64
rōa (OIc.) 274

sa 70, 342
saíhs 8, 354
saíhwan 73, 278, 365, 396
salt 275
sāmi- (OHG) 276
sauil 275
se (OE) 70, 342
sealt (OE) 244
sēo (OE) 70, 342

seofon (OE) 355
sētum 185, 377
sibun 8, 283, 355
sik 71
sineigs 11, 13
Skeireins 33
slapa (Icel.) 54
slapa (Norw.) 54
sleep (Eng.) 21
sliupan 279
slowly (Eng.) 301
snaiws 283, 285
snur (OHG) 245, 252
sō 70, 342
sōkjan 184
spehōn (OHG) 278, 283
stadal (OHG) 282, 284
stān (OHG) 247, 284
standan 13, 278
steal (Eng.) 21
stein (OHG) 157
stone (Eng.) 157
sulh (OE) 184
sunáus 331
sununs 332
suohhen (OHG) 184
suozi (OHG) 272
svefn (Olc.) 272
swein 9
sweiz (OHG) 248
swistar 10, 272, 287

taíhun 8, 38
tall, taller, tallest (Eng.) 69
thorp (OE) 183
tiuhan 184, 246, 249, 267
tōm (OHG) 282
tsunami (Eng.) 4
tuggō 9, 279
tunþus 69
turi (OHG) 272
twai 8

þahan 184
þái 315
þái wulfōs 194
þæt (OE) 70, 342
þata 70, 342
þaúrp 279
þēod (OE) 142, 183
þiuda 142, 180, 183
þjóð (Olc.) 183
þreis 8, 278
þu 70, 339

ufþanjan 273
un- 11, 358
usli (Olc.) 249, 267
ūtrin (OHG) 249
uzanan 276

vāma (Olc.) 11

wai 361
wáit 74, 365
wār (OHG) 184
was (Eng.) 185
wæter (OE) 324
waúrd 275, 282
waúrts 272
wearþ (OE) 65
weihs 184, 271
weis 339
weorþe (OE) 65
what (Eng.) 345
who (Eng.) 71, 345
widuwō 245, 252, 282
wiljan 275
wisan 185
witum 271
wōds 186
worden (OE) 65
wōsti (OSax.) 184
wōþbora (OE) 184
wulfs 9
wulla 272
wuosti (OHG) 184
wurdon 65

ye (Eng.) 340

ziohan (OHG) 184

8. Greek

α- 11, 358
ᾶ 361
ἄ ἄ 361
ἀγαθὸς στρατιώτης 88
ἄγγελος 277
ἀγρός 51, 304, 313
ἄγω 244, 252, 279
ἀδήν 273
ἀετόν 149
ἀθλητικός 193
αἶ 361
αἰαῖ 361
αἶθος 249, 266, 282
[αἰρ]έσει 148
ἄιστος 185
ἄλλο 348
ἄλλομαι 275
Ἁλοσύδνη 296
ἅλς 244, 275, 301, 322
ἄμβροτος 10, 11
ἀμεύσασθαι 246
ἀμόργᾱ 190
ἀμόργη 270
ἀμφί 359
ἀμφιφορεύς 255
ἀμφορεύς 193
ἄμφω 247, 281
αν- 358
ἄν 358
ἄναλτος 275
ἀνδρὸς ἐπιορκίᾱ 85
ἀνδρὸς υἱός 85
ἄνεμος 276, 303
ἀντί 87, 244, 256, 359
ἄξων 252, 284
ἄπιον 246
ἄπλαστα 192
ἀπό 359
ἀποδίδωσι 149
ἀποδίδωτι 149
ἄρ 87
ἀργής 52
ἄρκτος 274
ἀρόω 275
ἁρπάγη 193
ἀρχιτέκτων 192
αὖ 267
αὔξω 249
αὖτε 344
αὐτόματος 273
αὔως 286
Ἀφροδίτες 148
ἈχαιFοί 190
Ἀχαιοί 190

βαίνω 279
βάκτρον 279
βαλανεῖον 270
βάλανος 192, 280
βάλλω 192
βαρύς 280
βάσκ' ἴθι 371
βάσκω 371
βατιάκη 193
βατός 75, 273
βίος 279
βλαδύς 274
βλεννός 193
βοῦς 9
βραδύς 193
βραχύς 282
βῶς 9

γᾱθέω 279
γαυλός 193
γαῦλος 193
γένεος 13, 68
γένος 10, 11, 243, 276, 279, 283
γέροντι 325
γέροντος 308
γερόντων 326
γέρων 308
γῆρυς 247
γλαύκωμα 192
γνωτός 247
γόνυ 243, 330
γραμματική 192

δαίω 272
δάκρῡμα 279

δάμνᾱμι 276
δανειστής 192
-δε 343, 351, 358
δέ 90
δέδορκα 77
δείκνῡμι 178, 248, 278, 372
δέκα 8, 38
δέρκομαι 77
δίδομεν 52
δίδοντι 26
διδοῦσι 26
δίδωμι 52, 279, 370
δίδωσι 26
δίδωτι 26
Διὶ χεῖρας ἀνασχών 86
δίπυλος 353
δίσκος 193
δόμος 243, 279
δοτός 244, 252
δύ(Ϝ)ο 8
δύναμαι 272
δύω 8
δυώδεκα 149
δυωδεκάπλοα 149
δωδεκάπλοα 149
δῶρα 318
δῶρον 247, 263

ἔγνων 74, 365
ἐγώ 70, 160, 243, 252, 338
ἔδειξα 177, 377, 379
ἔδειξε 74, 365
ἔδομαι 252
ἔδοτο 160
ἔδρακον 77
ἔ(Ϝ)ειπον 376
ἔθεμεν 376
ἔθηκα 246, 263
εἰ 298
εἴη 73
εἴης 246
εἶμεν 247
εἰμί 11, 74, 76, 148, 178, 365, 384, 385
εἶμι 76, 245, 248
εἶπον 300
εἴρω 275
εἶ(ς) 385
εἷς 10, 352
εἰσί 52
εἶσι 74, 370
ἑκατόν 38, 273, 278, 356
e-ke-e (Myc.) 408
ἐκεῖ 315
ἐλεύθερονς 316
ἔλιπον 77
ἐμέω 11
ἐν 87, 359
ἕν 10, 352
ἐνί 87
ἐννέ(Ϝ)α 8, 11, 243, 272, 273
ἕνος 11, 13
ἐξ 359
ἕξ 8
ἐξαγωγή 192
ἔορ 10, 272
ἔπαθον 77
ἔπεο 406
ἐπί 87, 359
ἔπιθον 77
ἕπομαι 50, 278, 283, 389
ἑπτά 8, 283
ἐπτόμην 77
*ἔργαστρον 295
ἐρέβινθος 307
ἐρέτης 274
ἐρετμόν 274
ἐρυθρός 245, 252, 275
ἕστηκε 365
ἐστί 52, 157, 178, 252
ἔστιχον 77
ἔτι 361
εὔποτ[ον] 148
εὔχομαι 283
εὖω 246, 249, 267
ἔφερε 36, 365, 369
ἔφῡν 248
ἔχω 363
ἕω (ἷω) 13

(Ϝ)ἑ 87
(Ϝ)εἶδος 77
(Ϝ)ἔπος 271

(F)ἰδεῖν 271
(F)ἰδών 77
(F)οἶδα 77, 248
(F)οἶκος 248, 271
Foίκω 350
(F)ὄχος 272

Ζεῦ πάτερ 84
ζεύγνῡμι 372
Ζεύς 271, 334
ζυγόν 245, 252, 270
ζυγῶν 316

ἤ 361
ἡ 70, 185, 342
ἥ 71, 342
ἦ 361
ἡδύ 330
ἡδύν 331
ἡδύς 272, 330
Ἠέλιε 84
Ἠέλιος 84
ἥλιος 275
ἦλυθε 376
ἧμαι 389
ἡμεῖς 339
ἡμέρᾱ 317
ἡμέρᾷ 318
ἡμέρᾱι 318
ἡμέρᾱς 318
ἡμι- 276
ἦπαρ 270, 274, 302, 324
ἧπατος 302, 324
ἠώς 323

θεά 84
θεάων 320
θείνω 283
θεός 49
θεοῦ 149
θέπτανος 282
θερμός 283, 303
θεῷ 149
θεῶν 320
θρίαμβος 190
θρίξ 321
θῡμός 248, 263, 276, 282, 303
θύος 291
θύρᾱ 272
θυφλός 56
θωμός 247

ἱερός 152
ἱλαρός 193
ἰν 343
ἰός 263
ἵπποις 267
ἵππος 9, 243, 272
i-qo (Myc.) 9
ἵς 247, 263
ἵστᾱμι 12, 13, 51, 52, 247, 278, 284, 317
ἵστημι 51, 370

κάδος 193
καθαρίζω 233
κάκιστος 69, 350
κακός 69, 350
κάλαθος 307
καλή 148
καλήτωρ 204
καλλιστε[φά]νο 148
καλλίστη 148
καμάρᾱ 182, 190, 270
κάμπτω 192
κάνθαρος 193
κανθήλιος 192
Καπετώλιον 291
καρδίᾱ 9, 274, 279
καυλός 249
καχάζω 58, 61
κέλης 192
Κελτοί 31
κελτολίγυες 114
κέρας 284
κίκιννος 193
κίστη 193
κλέ(F)ω 275
κλέπτω 278
κλῶπας 325
κλῶπες 325
κλωπί 325
κλωπός 324

κλωπῶν 326
κόγχη 192, 277
Κόιντος 291
κολαφίζω 233
κολεός 193
Κόρινθος 307
κούροις 196, 197
κραδίη 274
κροκόδειλος 296
κύαθος 193
κυνῶν 329
κυπάρισσος 101
κύων 9, 11, 276
κωμάζω 193

λάγηνος 193
λαιός 249, 266
λανθάνω 194
λεγέμεναι 391
λέγω 275, 370
λείβω 266
λείπω 77, 275, 372
λείπων 52
λείριον 101
λείω 275
λέλοιπα 77, 266, 377, 378
λέλυκε 370
λέμβος 192
λέξαι 133
λευκός 275
λιπών 52
λογιστής 192
λόγῳ 314
λόγωι 314
λύκοι 179, 194, 267
λύκος 9, 68
λύκων 316
λῡ́ω 370

μᾰ́ζα 193
μάκαρ 220
μάκελλον 193
μαρσύπιον 193
μᾰ́τηρ 10, 11, 190, 263
μάχαιρα 192
μᾰχανᾰ́ 190
μέγας 271, 302
μέλι 276
μέλιτος ἥδῑον 86
μέμονα 378
μενέω 372
μενῶ 372
μέσος 282
μή 368
μὴ φέρε 90
μήν 10, 284
μηνῶν 329
μήτηρ 68, 190, 247, 276
μηχανή 190
μία 10, 318, 352
μνημόσυνον 193
μοιχός 193
μόλυβδος 101
μῦς 247
μῦ̆ς 9, 11, 263, 276, 283, 301
μωρός 193

ναίχι 343
ναύκληρος 192
ναυσία 192
ναύτης 192
ναυτία 192
νέ(F)α 68
νέ(F)ον 68
νέ(F)ος 68, 243, 272
νέποδες 276
νεφέλη 281
νῆ(F)α 273
νηός 276
νηρῖτης 192
νηῦς 276
νῑκάω 373
νῑκῶ 373
νίφα 283
νομίζει 149
νόμος 244
νῦν 247
νύξ 252
νυός 245, 252

ὁ 70, 185, 342
ὅ 71, 342

ὄγκος 244
ὁδὸν ἐλθέμεναι 84
ὀδόντα 273
ὀδόντες 283
ὀδόντος 13, 68
ὀδών 69
ὄ(F)ις 9, 51, 244, 252
οἵ 315
οἶδα 74, 363, 365, 378, 387
οἶδε 363, 388
οἶκει 87
οἶκοι 86, 87, 315
οἶνη 8, 10
οἶνος 101, 248
οἶσθα 363
ὀκτώ 8, 244, 278
ὄλκος 244
Ὀμβρικοί 115
ὄμμα 9
ὀνομαίνω 371
ὄνυξ 244
Ὀπικοί 112, 115, 129
ὀπός 300, 301
ὀρφανός 252
ὅς 71, 342
ὅτι 91
οὐ 90
οὖθαρ 249
ὀφρῦς 330
ὀχέω 282
ὄχος 370
ὄψ 300, 301
ὄψομαι 9, 244

παιδαγωγός 192
παιδεύειν 408
παιδεύεις 75
παιδεύσω 372
παιδεύω 372
παράσῖτος 193
πάσσαλος 192
πατάνη 193
πάτερ 324
πατέρα 77, 273
πατήρ 10, 77, 244, 252, 278, 322, 324
πατρός 77
παῦρος 249
παύσαι 192
πείθομαι 281
πείθω 77, 245, 248, 266
πέλομαι 278
πέμπε 8
πένθος 77
πέντε 8, 187, 278, 354
πέποιθα 77, 248
πέπονθα 77
πέρι 87
πέτομαι 77, 84
πηκτός 233
πήχεις 332
πῆχυς 330
π[ίε]σι 148
πίνω 149
πλατεῖα 193
πλεύμων 296
πλήρης 10
πόδα 324
ποδός 9, 68, 278, 301, 324
ποινή 248
πόλει 328
πολέω 149
πόλιν 152
πόλις 79
Πολυδεύκης 197, 246, 249, 267
πονηρός 69, 349
πονηρότερος 69, 349
po-pi (Myc.) 326
πορφύρεος 291
πόσις 68
ποτερί[ο] 148
ποτέριο[ν] 148
πότερος 345, 348
ποτή 77
ποῦ 187
πούς 9, 65, 278, 301
πρέσβυ 331
πρό 258, 359
Πρόκλος 232
προπόλοις 149
πρῷρα 192
πρῶτος 353
πτισάνη 192

πῶμα 247

-qe (Myc.) 90

ῥά 87
ῥᾴδιξ 272
ῥήτωρ 322
ῥῖγος 284
ῥόδον 101
ῥώμη 106

σᾶ 149
σαπέρδης 222
Σικελίᾱ 254
Σικελός 254
σίλουρος 222
σκέπτομαι 278, 283, 371
σκόμβρος 192
σκύφος 193
σπόγγος 101
σπυρίδα 190
στατός 51, 52, 244
στεγανς 320
στέγη 192
στείχω 77
στέρφος 283
στοῖχος 77
στρατιώτης ἀγαθός ἐστι 88
σύ 70, 258, 339
σύγγραφος 192
σύζυξ 301
σῦκον 101
συκοφάντης 193
συλλαβή 192
σύμβολος 192
συμφάγοι 149
συνπίοι 149
σῦς 330
σφάλλω 283
σφιγκτήρ 193
σφόγγος 101
σφριγάω 58
σῶα 149

τὰν ψυχάν 149
Τάραντα 270
τατός 273
τᾶων 286
τε 87, 90, 361
τέγγω 243
τέθηκα 125
τέθνηκε 365
τεῖχος 56, 282, 372
τέσσαρες 8, 278
τέτταρες 8
τὴν ψυχήν 149
τί 71, 345, 347
τίθεμεν 52
τίθετε 386
τίθημι 52, 282, 370, 385
τῑμάω 373
τῑμῶ 373
τῑμῶμαι 188
τῑμώμεθα 188
τίς 71, 245, 252, 278, 345, 347
τἴω/τἴνω 372
τό 70, 185, 342
τοῖο 347
τόνς 316
τούς 149, 316
τραπεζίτης 192, 296
τρεῖς 8, 149, 271, 278, 328
τριάκοντα 356
τρίς 149
τρίτος 353
Τροία 111
Τρῶες 111
Τρώια 111
Τρώς 111
τύρσεις 110
Τυρσηνοί 110, 111
τυφλός 56
τώς 149

ὕδατος 324
ὕδωρ 180, 324
υἱύνς 332
ὑμεῖς 340
ὑπέρ 359
ὕπνος 272, 294, 302
ὑπό 151, 359
ὗς 9, 248, 263

φάλαινα 192
φαμέν 52
φᾱμί 263
φᾱτί 247, 317
φέβομαι 371
φέρε 73
φέρει 74, 365
φέρετε 73, 386, 405
φερόμενος 75, 304
φέρω 243, 247, 275, 281, 370, 371, 384, 385
φησί 52
φιλέω 374
Φίλιππος 95
φίλος ὦ Μενέλᾱε 84
Φιλουμένη 243
φιλουμενοὶ ἐστε 391
φιλούμενος 391
φιλῶ 374
φοβέω 371
φοραί 179
φορέω 371
φρᾰ́τηρ 10, 263, 281
φῦκος 193
φῦσα 58

χέ(F)ω 77, 282
χέλλιοι 352
χήν 244, 282
χθών 68
χιών 68
χο(F)ά́ 77
χορηγίᾱ 193
χρυσέους 149
χρυσέως 149
χυτός 77
χώρᾱ 317
χῶραι 195
χώρᾱν 318

ψαλτήριον 193
ψίθιος 193

ᾰ̆ 361
ᾰ̃ 13

9. Indo-Iranian

(Skt./Ved. unless marked)

a- 358
ā 361
ábharat 36, 365, 369
abhí 281, 359
abhráḥ 275
adánt- 308
ádāt 74, 365
ádhāt 376
ádmi 252
agnáye 328
agním īḍé 84
áha 271
ahám 70, 243, 252, 338
áhar 324
áhnaḥ 324
ahō 361
ai 361
ájāmi 244, 252, 279
ájman- 274
ájraḥ 51, 304
ákṣaḥ 284
ákṣi 9, 244
amitrayáti 374
an- 358
ánāiṣam 74, 365
anákti 280
áneṣvahi 75
ániti 276
ánti 87, 359
ápa 359
ápi 87, 359
apivr̥nóti 272
ās- 389
asāú 71
ási 256, 298, 385
ásmi 11, 74, 178, 243, 256, 365, 384, 385
ásti 73, 157, 178, 252, 256, 370
ástu 13
asyá 271
āsyắt 314
áśrot 376
áśvaḥ 9, 50, 68, 243, 272
áśvasya 187

áśvāt 177
aṣṭā́(u) 8, 244, 278
áti 361
ávākṣam 377, 379
ávidat 376
áviḥ 9, 51, 252
ávocam 377
áyas- 249

bhára 73
bhárāmi xxvii, 243, 275, 281, 370, 384
bhárant- 75
bhárata 73, 386, 405
bhárathas 386
bhárati xxvii, 74, 75, 365
bhármāṇaḥ 304
bhávant- 308
bhrā́tā 10, 263, 281
bhuktá 309
Bṛhadaśvaḥ 95
bubódha 363, 370
bubódhita 363
budh- 370

ca 87, 90, 361
cakā́ra 377, 378
catvā́raḥ 8, 246, 278

čiš (Av.) 245, 252

dádāmi 149, 279, 370
dadāú 380
dádhāmi 282, 370, 385
dadhā́u 246, 263
dadhmás 386
dáhati 282
dámaḥ 243, 279
dā́myati 276
dán 69
dā́nam 247
dántaḥ 68, 283, 308
dasa (Av.) 38
dāsyā́mi 372
dáśa 8, 38, 149
dā́tā 322
datáḥ xxvii, 13
datás xxvii
dā́tum 75, 244, 252
dé̍hmi 56, 282, 372
devá- 374
devā́ís 267
devā́s 315
devásya 313
devā́t 314
devayáti 374
devī́ 84
dhatthá 386
dhenús 330
dhūmáḥ 248, 263, 276, 282, 303
dídeṣṭi 248, 278
dōiš- (Av.) 379
duhitā́ 180
dunóti 272
dvā́raḥ 272
dvā́(u) 8, 149
dvijáḥ 353
dyā́uḥ 334

ĕ 361
é̍dhaḥ 249, 266, 282
ékaḥ xxvii, 8
ékas xxvii
é̍mi 248
éti 74, 370
é̍tum 409

gábhastiḥ 363
gácchāmi 371
gatáḥ 75, 273
gátaye 328
gáuḥ 9
gharmáḥ 283, 303
gṛbhṇā́mi te saubhagatvā́ya hástam 86
guṇa 49
gurúḥ 280

ha 361
ha ha 361
haṁsáḥ 244, 282
hánti 283
hāu (Av.) 71
hazaŋrəm (Av.) 352

hí 90, 343
hita 64
Hitopadeśaḥ 64

iδa (Av.) 351
idám 70, 343
ihá 351
imám 343
imắm 343
íti 91

jajñāú 380
jánaḥ 10, 11, 243, 276, 279, 283
jánasaḥ 68
járantaḥ 308
jihvā́ 9
jíjīviṣāmi 372
jīváḥ 247, 263, 279
jívāmi 372
jīváse 408
jñātáḥ 247
juhóti 282

kā́ 71, 345
kákhati 58, 61
kalyá- 148
kắmās 315
kapaṯī 244
kartr̥- 77
kártum 409
kāryá- 77
kás 71, 345
kásya 347
kát 345
kataráḥ 345
ké 348
kēkaraḥ 249
késaraḥ 286
kíḥ 278
kim 71
kíyant- 357
kr̥- 50, 146
kravís- 59
kr̥tá- 77

lakṣá 41
lakṣmí 41
lōkáḥ 275
lúbhyati 281

mā 73, 368.
mắ bharaḥ 90
mắ na áyuḥ prá moṣīḥ 368
mádhu 330
mádhyaḥ 245, 282
mahắnt- 271
májjati 285
mānáyati 271, 374
marúdbhyas 326
marútām 326
mắs 284
mắsaḥ 10
mātā́ 10, 11, 68, 247, 263, 276
matíḥ 257, 273
mithunī́karoti 314
mitrá- 374
mr̥- 302
mr̥dúḥ 274
mr̥táḥ 10, 11
mr̥tíḥ 257, 274
mūrṇá- 302
mū́ṣ- 9, 11, 247, 263, 276, 283, 301

ná 87, 90
nā 246
nábhaḥ 281
náktam 252
nápāt 111, 276
nápātam 324
nasā́ 276
nā́uḥ 276
náva 8, 243, 272, 273
náva- 350
návā 68
návaḥ 11, 68, 243, 272
návam 68
navamáḥ 246
náviṣṭhaḥ 69, 350
néd 90
nīdáḥ 285
nr̥pasya senā 85
nú 247

ójas- 249
óṣati 246, 249, 267

pácāmi 278
padáḥ 301
pádyaḥ 271
páñca 8, 187, 278, 354
panča (Av.) 187, 354
paptimá 77
pári 87
paścắt 359
páśyāmi 278, 371
pắt 9, 65, 68, 278, 301
pátati 77, 84
pātáyati 77
pắti 247
pátiḥ 68
phṓtkaróti 58
píba sutásya 85
píbadhyai 75
píbāmi 372
pípāṣāmi 372
pitắ 10, 244, 252, 278, 322, 324
pítar 324
(pituḥ) kāmaḥ putrasya 85
prá 359
prākṛta 24
prathamá- 353
pṛcchắmi 274, 372
prītiṁ gacchata 132
priyá- 349
priyắs 195
priyátaraḥ 349
pūrṇáḥ 10
putráḥ 180

rắḥ 334
rắjā 186, 263, 275, 277
rắjñī 314
rátha- 314
ráthaḥ 243
rathíḥ 314
ṛg- 24
riṇájmi 275, 372
ṛkṣa- 274
rócatē 275
rudáti 73
rudhiráḥ 245, 252, 275

sắ 70, 185, 342
sabhắ 263
sac- 389
sáce 50, 73, 278, 283, 365
sahásram 352
sáhate 363
sāmí- 276
saṁskṛta 24
sána- 69
sánaḥ 11, 13
sányaḥ 69
saptá 8, 283
sás 70, 185, 342
satəm (Av.) 38
sénām 318
síndhau 86
snuṣắ 245, 252, 285
spasyā (Av.) 247
spáśati 283
sthā- 13
sthitá- 244
stu- 50
sūkaráḥ 9, 248, 263
sunuyắma 75
svādóḥ svắdīyaḥ 86
svādúḥ 272
svápnaḥ 272
svásā 10, 272, 286
svédaḥ 248
syắt 73

śatám 38, 59, 273, 278, 356
śataṁ ekaṁ ca 90
śátravaḥ 84
śátravas 332
śátrave 331
śátro 331
śátros 331
śátrū 330
śátrum 331
śátrus 330
śíras- 284
śṛṅga- 44

śrṓṣati 372
śru- 372
śvā́ 9, 11, 276

ṣáṭ- 8, 354

tarṣáyati 374
tā́sām 286, 316, 320
tásya 271, 313
tát 70, 185, 342
tatáḥ 273
té 315
té vr̥kās 194
tíṣṭhāmi 278, 284, 370
tráyaḥ 8, 149, 271, 278
tráyas 328
tr̥tíyaḥ 353
tvā 339
tvám 70, 339
tvā́m 339
tvā́m aham satyam icchāmi 84
tvát 339

ubhaú 247
ucchalati 275
ū́dhar 249
udnáḥ 296
úpa 359
upadeśa 64
upári 359
ū́rṇā 272
uṣā́ḥ 286

vā 87, 90, 361
vācáḥ 301
vācā́m 326
vācás 325
vā́cas 325
vāghát- 283
váhāmi 243, 272, 282, 370
vā́k 247, 263, 301
vákti 271
vámiti 11
váraḥ 275
váśmi 370
vāvad- 369
vayám 339
váyati 52
vāyur antarikṣād abhāṣata 86
véda 74, 365, 388
vid- 271
vidarbhān agaman 84
vidhávā 245, 252, 282
vidúr 363, 388
vidván 75
víḥ 149
vīráḥ 304
víś- 271
Vištāspa- (OPers.) 95
vitta- 185
vr̥ddhi 49
vr̥ka- xxvii
vr̥kaḥ 9, 68
vr̥tanáḥ 65

yā́ 71, 342
yájate 72, 364
yájati 72
yaknáḥ 302, 324
yákr̥t 270, 274, 302, 324
yam- 157
yás 71, 342
yát 71, 342
yó ná dádāti sákhye 86
yóḥ 270
yúgā 316
yugám 245, 252, 270
yuj- xxvii
yunájmi 372
yūyám 340

zyå (Av.) 68

10. Other Italic
(Osc. unless marked)

aasas 179, 195, 319
ager (Umbr.) 140
agine (Marrucinian) 128
ahvdiu 201
aíkdafed 138, 175, 179

aisos (Marrucinian) 128
akrutu (Umbr.) 140
ALBSI (Aequian) 123
alfu (Umbr.) 173
alpo- (Sab.) 134
amirikum 173
amprufid 177
andirsafust (Umbr.) 175
Anterstataí 182
aragetud 176
asif (Volsc.) 142
asignas (Marrucinian) 128
atahus (Volsc.) 142
auso- (Sab.) 134
auti 182
avdiis 201
avis (Umbr.) 329
avt 176, 344

benust (Umbr.) 177, 179
bim (Volsc.) 142, 169
bivus 158
brat (Vestinian) 140

carsitu (Umbr.) 204
casco- (Sab.) 134
casnar 134
casnar (Paelign.) 133
castrid 131, 132, 332
castrous 331
castruo (Umbr.) 332
cetur (Marsian) 129
coisatens (Paelign.) 139, 266, 286
contrud 132, 177, 186
couehriu (Volsc.) 142
curis (Sab.) 134

declune (Volsc.) 142
ded (Marsian) 129
deded 388
deicans 131, 386
deíkum 178
deiuaid 402
deiuast 175
deiuatuns 131
deívaí 319, 335
deue (Volsc.) 142
dida (Paelign.) 132
didet (Vestinian) 140
Diúveí 324
dolud 132, 177
duno (Vestinian) 140
dunom (Marsian) 129

-e (Umbr.) 139
eaf (Umbr.) 176
ecuf (Paelign.) 133
eehiianasúm 320
egmad 132
egmazum 286
-ei 324
eíkvasese (Umbr.) 139
eísaí víaí mefiaí 319
eíseí tereí 174, 315
eite uus (Paelign.) 132
eitipes (Umbr.) 138
eituas 131, 318
eíturvad 319
eizasc 131
emantur (Umbr.) 140
enom (Umbr.) 200
erom (Umbr.) 175, 179, 407, 409
est 178
est (Umbr.) 178
estu (Volsc.) 169
estud 131
esum 178
esune (Umbr.) 139
ezum 132, 175, 179, 407, 409

faber (Paelign.) 134
façia (Umbr.) 176, 178, 385, 402
façia (Volsc.) 142, 169
factud 6, 131
fak- 132
fakiiad 176, 178, 385, 402
fasēna (Sab.) 134, 287
fedo- (Sab.) 134
fefacid 132
ferar (Umbr.) 133, 178, 188
ferenter (Marrucinian) 128
ferest (Umbr.) 175, 179

ferom (Volsc.) 142
fiklas (Umbr.) 175
fiktu (Umbr.) 280
firco- (Sab.) 134
flusare (Sab.) 178
fratrom (Umbr.) 326
fratrúm 178, 326
fratrum (Umbr.) 178
fratrus (Umbr.) 326
fufans 177, 397
fuiest (Umbr.) 140
fusíd 177
Fuutreí 180

hanustu (Paelign.) 133
hapinaru(m) (Umbr.) 320
herentas (Paelign.) 132
herest 175
heri (Umbr.) 175
hernae (Sab.) 134
herte (Umbr.) 140
herter (Umbr.) 175
homonus (Umbr.) 326
humuns 325, 386
húrtúi 314

ímih (S. Picene) 135
Ioues patres (Marrucinian) 128
íst 178
iuka (Umbr.) 316
iuku (Umbr.) 316

kahad 402
karne (Umbr.) 187
kartu (Umbr.) 187
kařetu (Umbr.) 204
kařitu (Umbr.) 204
kastruvu (Umbr.) 332
kerssnaís 320
-ku (Umbr.) 139
kumaltu (Umbr.) 175
kúmbennieís 328
kuraia (Umbr.) 139
kuratu si (Umbr.) 400
kvestretie (Umbr.) 139

lexe (Paelign.) 133
licitud 131
lifar (Paelign.) 133
ligis 326
lixs (Marrucinian) 128
loufir 131, 249, 266
luisarifs 326, 329

malud 132
manf (Umbr.) 332
manus (S. Picene) 136
maroucai (Marrucinian) 128
matereíh (S. Picene) 135
meddíss 129
medis (Marsian) 129
mefiaí 173
minerua (Paelign.) 173
mins 132
muieto fust (Umbr.) 175
múiníkú 266

natine (Umbr.) 188
nessimas 188
Núvlanúm 316
Núvlanús 195, 315

ocre(-per) (Umbr.) 328
ote (Umbr.) 176, 182, 344

paam 318
pacris (Paelign.) 128
paí 177
panta (Umbr.) 179
patereí 324, 408
patereíh (S. Picene) 135
PATRE (Aequian) 123
-pe (Umbr.) 158
pedú 176
persi (Umbr.) 176
peři (Umbr.) 176
petora 189
píd 177, 347
pídum 343
piei 347
pihaklu (Umbr.) 316
pihaner (Umbr.) 406

pihom estu (Volsc.) 142
pir (Umbr.) 175
piře (Umbr.) 139
pis 131, 169
pís 177, 179, 345, 347
pisi (Umbr.) 139
pispis 177, 347
pitpit 177
plenasier (Umbr.) 138
pocapit 131
pod 131
prai 176
pre (Umbr.) 173, 176
prinuvatus (Umbr.) 315
prismu (Paelign.) 353
pritrome (Paelign.) 132
pros (Paelign.) 133
prúftú 316
púd 177
pue (Umbr.) 187
puf 133
pufe (Umbr.) 133
pui 177, 179
puíh (S. Picene) 136
pukdum 180
pumpe (Umbr.) 139
purasiaí 175
pure (Umbr.) 139
puře (Umbr.) 139
pusme 347
pútereípíd 345
puus (Paelign.) 132

ri (Umbr.) 139

sakarafír 391
sakarakleís 179
sakarakdúd 177, 314
sakarater 175
sakriss 329
screihtor (Umbr.) 400
scriftas 400
sent 386
sent (Umbr.) 386, 400
sepis (Volsc.) 142, 169
sepu (Volsc.) 142
set 400
si (Umbr.) 139
sins (Umbr.) 386
sipus 142
sis (Umbr.) 139
sistiatiens (Volsc.) 142
slaagid 328
staflarem (Umbr.) 282, 284
statom (Volsc.) 142, 169
struhçlas (Umbr.) 175
suaepis 131
súaís (S. Picene) 136
subocau (Umbr.) 380
subocauu (Umbr.) 380
sufaflas (Umbr.) 175
súm 178
súm 178
svepis (Umbr.) 169

tafle (Umbr.) 175
tebae (Sab.) 134
tekuries (Umbr.) 320
teremnatust 400
toru (Umbr.) 173, 182
tota (Umbr.) 142
tota(-per) (Umbr.) 319
totam (Umbr.) 175, 183
totar (Umbr.) 318
toticu (Volsc.) 142, 169
toutad 175, 176, 177
toutai (Marrucinian) 128
toutico 142
touto 131, 142, 180, 183
tra (Umbr.) 189
traf (Umbr.) 189
tremnu (Umbr.) 183
trifo (Umbr.) 331, 409
trifor (Umbr.) 331
trifu (Umbr.) 331, 409
tríbúm 183, 279
-tu (Umbr.) 140
turuf (Umbr.) 182
tuta (Umbr.) 176

ualaemom 131
uerir (Umbr.) 175

uhtretie (Umbr.) 138, 139
uincter 175
uinu (Volsc.) 142
umtu (Umbr.) 280
une (Umbr.) 324
úpsannam 177, 406
uraku (Umbr.) 139
urnasier (Umbr.) 138
urtas (Umbr.) 319
ute (Umbr.) 176, 182
utur (Umbr.) 180, 302, 324

veru 175, 272
víaf 175
víass 176, 320
vitlaf (Umbr.) 320
vufru (Umbr.) 179

11. Non-Italic IE of Italy

akvil (Raetic) 156
aprodita (Messapic) 151
ἀρβίννη (Sicel) 158
asia (Ligurian) 150

baletþihi (Messapic) 151
-ber- (Ligurian) 150
Berigiema (Ligurian) 150
biuo- (Ligurian) 150
blatþihi (Messapic) 151
bormo- (Ligurian) 150
brtome (Sicel) 157

Comberanea (Ligurian) 150

dos (Sicel) 158
doto (Ven.) 160
durom (Sicel) 156, 157

ego (Ven.) 159, 160
e•kupetari•s• (Ven.) 160
eredes (Sicel) 157
esti (Sicel) 156, 157
et•sua (Raetic) 156

frontac (N. Picene) 153

-giem- (Ligurian) 150

hipades (Messapic) 151

ſemitom (Sicel) 157
iśairon (N. Picene) 152

Kaialoiso (Ven.) 188
kaian nakina (Raetic) 156
kalatoras (Messapic) 151
κάμπος (Sicel) 158
κάτινος (Sicel) 158
koliai (Ven.) 160
kusenkus (Raetic) 154
-kve (Ven.) 158

lavisešeli (Raetic) 154
λεβηρίς (Ligurian) 150
λέπορις (Sicel) 158
leutiku (Raetic) 156
lup.nu (Raetic) 154

mego (Ven.) 160
mím (Sicel) 157
mimniś (N. Picene) 152

nane (Sicel) 157
ned imponitantom (Sicel) 157
netšvis trutnvt (N. Picene) 153
nunus (Sicel) 157

pitiave (Raetic) 154
polem (N. Picene) 152
Porcobera (Ligurian) 150
pos (Sicel) 157
pupone•i (Ven.) 159

rako•i (Ven.) 159
reitiai (Ven.) 160
roudo- (Ligurian) 150

stainam (Sicel) 157

śelna (Raetic) 154

talina (Raetic) 154
taris (Raetic) 156
tenti (Sicel) 157
tri- (Ligurian) 150
trinaχe (Raetic) 154

velχanu (Raetic) 154
vino (Sicel) 157
vinobrtome (Sicel) 157
vivoi (Ven.) 158

12. Non-Indo-European
(Etr. unless marked)

Clutumsta 161

gadū (Akkadian) 44
gdī (Heb.) 44

Klytaimestra 161

*makar- (Vasconic) 220
man (Karitiana) 4
Menerva 161
Menrva 161
mi larthia 165
mi qutun lemauśnaś ranazu zinake 165
mini mulvanice mamarce velchanaś 165

ναφοθσ (Lemn.) 111
nefts 111

preśnts 161

*qṛn (Semitic) 44

Ramtha 161
Ramutha 161
Rasenna 108, 161
Rasna 161
rumon 106

śakkín (Heb.) 101

Tursyan- (Lemn.) 111

wain (Arabic) 101
wein (Ethiopic) 101

yayin (Heb.) 101

13. Romance

allemand (Fr.) 129

cantar (Span.) 229
cantàre (it.) 229
chambre (Fr.) 12
chanter (Fr.) 229
che (It.) 216

dix-sept (Fr.) 355

enfant (Fr.) 237
enteramente (Span.) 302
entièrement (Fr.) 302

il (Fr.) 234, 240
il aime (Fr.) 237
il va (Fr.) 74

mon (Fr.) 239

que (Fr.) 216

severaménte (It.) 302
sévèrement (Fr.) 302
son (Fr.) 239

ton (Fr.) 239

14. Slavic
(OCS unless marked)

azŭ 70, 338

bratrŭ 10
bratŭ 10

četyre 8

čĭto 345

da 379
desętĭ 8, 38
devętĭ 8
domŭ 243
dŭbrĭ 54
dŭva 8

gostĭ 243, 282
grędǫ 282
gumĭno 9

je- 71, 342
(jed-)inŭ 8
językŭ 9

koteryjĭ 345
kŭto 345

lěvŭ 249, 266
ljubŭ 281

mati 10
měsęcĭ 10
mĭrǫ 10
mrěti 10
myšĭ 9

ne 87, 90
nova 69
novo 69
novŭ 69

obĭ- 244
oko 9
onŭ 71
osmĭ 8
ovĭca 9

pěšĭ 9
pętĭ 8
plŭnŭ 10
prědŭ 359

sę 71
sěděti 371
sedmĭ 8
sěmę 246, 263, 274
sestra 10
sĭ 70
slabŭ 54
slovese 13
srŭdĭce 9
súka (Russ.) 9
sŭto 38
svinija 9

šestĭ 8

trĭje 8
ty 70, 339

věra 184
věsŭ 379
vĭdova 245, 252
vlĭkŭ 9
vy 340

15. Tocharian
(A unless marked)

ak 9
āwi (B) 9

ek (B) 9

känt 38
kante (B) 38
käntu 9
kantwo (B) 9
käryāñ (B) 9
kātk- 279
kātk (B) 279
kautāre (B) 388
keu (B) 9
ko 9
kri 9
ku 9
ku (B) 9
kum- 279

mācar 10
mācer (B) 10
mañ 10
mañcītsi (B) 9
meñe (B) 10

ñu 8
ñu (B) 8
ñunte (B) 246

okät 8
okt (B) 8

pācar 10
pācer (B) 10
paiyye (B) 9
pällew (B) 10
päñ 8
pe 9
piś (B) 8
pracar 10
prekasta (B) 387
preksa (B) 387
procer (B) 10

suwo (B) 9

śäk 8, 38
śak (B) 8, 38
śtwar 8
śtwer (B) 8

şäk 8
şar 10
şer (B) 10
şkas (B) 8
şpät 8
şukt (B) 8

trai (B) 8
tre 8

walkwe (B) 9
was 339
wes (B) 339
wesi (B) 340
wi (B) 8
wu 8

yakwe (B) 9, 50, 68, 243
yas 340
yes (B) 340
yesi (B) 340
yuk 9

16. Proto-Indo-European

*ā 61
*ai 61
*ar 87

*bak- 279

*b^heh_2- 247, 263, 317, 373
*b^heh_2-d^hlo- 304
*b^heh_2g- 41
*b^heid^h- 77, 245, 248, 266, 281
*b^her- 150, 243, 275, 281, 370, 371, 401
*b^here 73
*b^herete 73
*b^heroh_2 281
*b^her-tlom 304
*$b^herēsi$ 73
*b^hid^h- 77, 245
*b^hleh_1- 381
*b^hleh_1-i-oh_2 397
*b^hoid^h- 77
*b^hor-/$b^hṛ$- 17
*b^hor-eie- 371
*$b^hreh_2tr\check{o}m$ 178
*$b^hreh_2tēr$ 246, 263, 281
*b^huH- 185, 215, 248, 307, 367, 397
*b^hueh_2- 177, 272
*$b^hū$-ioh_2 265

*de-deh_3- 370
*d(e)-eh_1n-ih_1 357
*deh_3- 252, 263, 279, 375
*deh_3nom/deh_3rom 247
*$deig^h$- 56
*deik- 178, 248, 278, 301

*deiuo- 146
*dekmt 352, 355, 356
*dek-no- 243, 294
*dek-no-s 276
*demh$_2$- 276
*deuk- 246, 249, 267
*dh$_3$-to- 244, 252
*dieu-es 271
*(d)kmtom 59, 60, 273, 278, 352, 356
*dng^{h}ueh$_2$ 243
*domH- 243
*domH-o-no- 303
*domH-o-no-s 301
*domHos 279
*du- 353
*dui- 353
*dui-dekmtih$_1$ 356
*duis 357
*duis-no-ih$_2$ 357
*duk- 245
*duoh$_1$ 352, 353

*d^{h}e-d^{h}eh$_1$-/d^{h}i-d^{h}h$_1$- 370
*d^{h}eg^{h}ōm 68
*d^{h}eg^{ʷh}- 282
*d^{h}eh$_1$- 178, 246, 263, 375, 396
*d^{h}eh$_1$-/d^{h}h$_1$- 282
*d^{h}eig- 56
*d^{h}eig^h- 56, 282
*d^{h}eig^ʷ- 280
*d^{h}ei-n-g^h- 372
*d^{h}h$_1$- 178
*d^{h}oh$_1$- 247
*d^{h}uh$_2$mo- 248, 263, 276, 282
*d^{h}uh$_2$mos 281
*d^{h}uōr- 272

*eheu 361

*gār- 61, 247
*geh$_2$ud^h- 279
*genh$_1$-es- 68
*genh$_1$-os- 243, 276, 279, 283
*genu-/gonu- 243
*gneh$_3$-to- 247

*g^{h}ab^h- 363
*g^{h}ans- 61, 244, 282
*g^{h}eh$_2$- 343
*g^{h}eim- 68, 281
*g^{h}eslo- 352, 357
*g^{h}eu- 77, 282
*g^{h}i- 343
*g^{h}leh$_2$d^h- 282
*g^{h}o- 343
*g^{h}osti- 243, 282
*g^{h}ou- 77
*g^{h}red^h- 282
*g^{h}u- 77

*g^{ʷ}el- 275
*g^{ʷ}elh$_2$- 280
*g^{ʷ}em- 179, 279
*g^{ʷ}ih$_3$- 279
*g^{ʷ}ih$_3$-uo- 247, 263, 306
*g^{ʷ}m-sk- 371
*g^{ʷ}m-to- 75
*g^{ʷ}m-to-s 273
*g^{ʷ}reh$_2$u- 280

*g^{ʷh}en- 179, 281, 283
*g^{ʷh}ermo- 283

*hă 361
*ha ha 361

*Heus-s- 380
*Hiek^ʷ-r(t)- 270, 274
*Hiug- 301
*Hiugo- 245, 252
*Hiugom 270, 372
*Hiu-n-g- 372
*Hoino- 248
*Hoinos 352
*HouHd^{h}er 249
*HrotH- 243
*Hu̯no- 61
*Hulh$_2$no- 272
*Hureh$_2$d-īk- 272
*Hu̯h$_2$no- 61

*h$_1$dont-/h$_1$dent- 68, 69, 308

*$h_1$ed- 252, 308
*h_1e-d^{h}eh_1- 376
*h_1e-dēik-s- 377, 379
*$h_1$eg^{h}s 261, 359
*$h_1$eg-ioh$_2$ 271
*$h_1$egoH/$h_1$egHom 70, 243, 252, 338
*h_1e-$h_1$lud^h- 376
*h_1e-$h_1$od- 378
*h_1e-$h_1$om- 378
*$h_1$ei- 76, 131, 248, 343, 370
*$h_1$eieh$_2$ 343
*$h_1$eieh$_2$ns 343
*$h_1$eieh$_2$som 343
*$h_1$eieh$_2$t 343
*$h_1$eih$_2$ei 343
*$h_1$eih$_2$eis 343
*$h_1$eiei 343
*$h_1$eio- 343
*$h_1$eioi 343
*$h_1$eiois 343
*$h_1$eiom 343
*$h_1$eions 343
*$h_1$eiosom 343
*$h_1$eisios 188, 343
*$h_1$eiōt 343
*h_1e-kleu- 376
*$h_1$ekuo- 6, 68, 95, 243, 272
*$h_1$en 87, 359
*h_1e-pi 87, 359
*$h_1$erh$_1$- 274
*$h_1$es- 76, 86, 185, 243, 252, 298, 370, 371, 401, 402
*$h_1$es-e-ti 398
*$h_1$esmi 384, 385
*$h_1$esoh$_2$ 73, 400
*$h_1$es-o-m 385
*$h_1$es-seh$_1$-m 403
*$h_1$essi 298, 385
*$h_1$es-ti 178
*$h_1$eti 361
*h_1e-uid- 376
*$h_1$eus- 249, 267
*$h_1$eus-oh$_2$ 246
*(h_1e-)uĕg^h-s- 377
*h_1e-uĕg^h-s- 379
*$h_1$id 70, 185, 337, 342
*$h_1$ih$_2$ 70, 185, 337, 342
*$h_1$im 343
*$h_1$is 70, 185, 337, 342
*h_1i-ter 245
*$h_1$lmo- 187, 274
*$h_1$mb^h-r- 275
*$h_1$me 70, 338
*$h_1$meg^{h}io 70, 338
*$h_1$mei 70, 338
*$h_1$mene 70, 338
*$h_1$met 70, 338
*$h_1$moi 70
*$h_1$mos 342
*h_1nd^{h}er(i) 359
*$h_1$neh$_3$mn-ie- 371
*$h_1$neu-eh$_1$n-ih$_1$ 357
*$h_1$neueno- 246
*$h_1$neun 242, 243, 272, 273, 274, 352, 355, 357
*$h_1$nouen-eh$_2$-dekmteh$_2$ 356
*$h_1$noueno- 355
*h_1o-pi 359
*$h_1$rud^h-(ro-) 245, 252, 275
*$h_1$rud^h-ro-s 313
*h_1s-ieh$_1$- 246
*$h_1$sieh$_1$t 73
*$h_1$uid^{h}eu- 245, 252, 281, 282
*$h_1$us-to- 246
*h_1ĕ 361
*h_1ŏ 361

*$h_2$ed 244, 359
*$h_2$eg- 244, 252, 279
*$h_2$eg-e-s(i) 397
*$h_2$eg-mn 274
*$h_2$eg-oh$_2$ 397
*$h_2$egro- 304
*$h_2$egro-s 313
*$h_2$eh$_2$ 361
*$h_2$ei 361
*$h_2$eid^h- 249, 266, 282
*$h_2$ei(e)s- 249
*$h_2$eks- 252, 284
*$h_2$elb^{h}o- 173
*$h_2$elb^{h}os 281
*$h_2$elio-d 348

*$h_2$elios 245
*$h_2$elteros 353
*$h_2$elto- 275
*$h_2$en 358
*$h_2$enh$_1$- 276
*$h_2$enk- 244
*$h_2$ent- 359
*$h_2$enteros 353
*$h_2$enti 244, 359
*$h_2$epo 359
*$h_2$ep-uer- 272
*$h_2$erh$_3$- 275
*$h_2$es-ih$_1$- 247
*$h_2$eug- 249
*$h_2$eus- 250, 267
*$h_2$eus-klu-t- 296
*$h_2$eusōs- 286, 323
*h_2m-b^{h}i 359
*$h_2$mb^{h}oh$_1$ 247, 281
*$h_2$rtko- 274
*$h_2$ues- 185
*h_2ṛtko- 273

*$h_3$dent-m 273
*$h_3$dontes 283
*h_3e-$h_3$od- 378
*$h_3$ekteh$_3$o- 247, 306, 355
*$h_3$ektoh$_1$ 244, 278, 352, 355
*$h_3$ektoh$_1$-dekmteh$_2$ 356
*$h_3$ektoh$_1$-no-ih$_1$ 357
*$h_3$ek^u- 244
*$h_3$eng^u- 280
*$h_3$eui- 244, 252
*$h_3$mb^{h}i 244
*$h_3$ng^{uh}- 244
*$h_3$orb^{h}o- 252
*$h_3$reh$_1$g- 263, 275

*ieud^h-s- 379
*ieus- 270
*io 313
*iod 71, 90, 342
*iuH(s) 70, 340

*kaiko- 249
*kap- 61, 244, 301
*kap-i-oh$_2$ 245
*ke 358
*kerd- 274, 279
*kerh$_2$s-ro-m 284
*kers- 115
*klep- 278
*kleu- 275, 372
*kleu-s- 372
*kois-eh$_2$ 286
*kois-ioh$_2$ 286
*kolH-n- 295
*kolso- 295
*ko(m) 359
*kom-moino- 248
*kreh$_1$-sk- 375
*kreuh$_2$- 59
*kri-n-oh$_2$- 375
*krn- 275
*krs- 115
*kuōn 276

*k^{h}ak^{h}a- 58, 61
*k^{h}onk^h- 17

*-k^{u}e 87, 90, 358, 361
*k^{u}e-/k^{u}i- 71, 345, 346
*k^{u}eh$_2$- 179, 347
*k^{u}eh$_2$m 347
*k^{u}eh$_2$m-teh$_2$- 179
*k^{u}eh$_2$som 348
*k^{u}ei 348
*k^{u}eib^h(i)os 348
*k^{u}eies 348
*k^{u}el- 149, 278
*k^{u}esmei 347
*k^{u}et 348
*k^{u}etesr- 353
*k^{u}etreh$_2$-dekmteh$_2$ 356
*k^{u}etris-no-ih$_1$ 357
*k^{u}etro- 357
*k^{u}etuor- 246, 278, 352, 353
*k^{u}id 179, 245, 252, 347
*k^{u}ih$_2$ 361
*k^{u}im 347
*k^{u}is 179, 245, 252, 278, 347
*k^{u}o- 71, 179, 347, 348

*$k^{\mu}o$-/$k^{\mu}eh_2$-/$k^{\mu}o$- 345, 346
*$k^{\mu}od$ 90, 347, 361
*$k^{\mu}oisom$ 348
*$k^{\mu}ol$- 278
*$k^{\mu}om$ 361
*$k^{\mu}ons$/$k^{\mu}eh_2ns$ 348
*$k^{\mu}or$ 351
*$k^{\mu}o$-sios 188, 271, 343, 347
*$k^{\mu}ot$ 348
*$k^{\mu}otero$- 345, 348
*$k^{\mu}otr$-to- 354

*laiuo- 249, 266
*leg- 275, 301, 370
*lege-seh_1-m 403
*leg-no- 243
*lei(n)k^{μ}- 275, 372
*$leub^h$- 281
*leuk- 275, 301
*lokso- 41

*mag^h-ti-s 220
*mag-ios 349
*mag-iōs 271
*mag-so-mo- 303, 350
*mak-ti-s 220
*mātēr 61, 68, 246, 247, 263, 276
*med^hio- 173, 282
*med^hios 245
*meh_2kros 273
*meh_2tēr 247
*meh_1 90, 368
*meh_1ns- 284
*$melh_2$- 375
*melit- 276
*men- 371, 372
*men-h_1s- 372
*$meuh_2$- 246
*mldu- 274
*mnti-s 273
*$mreg^h$u- 282
*mr-t-is 274
*mr-tu-os 306
*mūs 247, 248, 263, 276, 283, 301

*n- 358
*nŏs 340
*ne 87, 90, 358
*neb^h- 281
*ne-Hoinom 358
*neh_2s- 276
*neh_2u- 276
*ne-i 358
*nepōt- 111, 276
*$neueh_2$ 68
*neu-ios- 349
*neuom 68
*neuos 68, 243, 272
*$ng^{\mu}en$- 273, 280
*ni-sd-os 285
*$nok^{\mu}t$- 252
*nos-teros 342
*nsme 340
*nsmei 340
*nsmet 340
*nsom 340
*nē 246, 358
*nū 247

*pau- 249
*ped-/pod- 68, 278, 301
*pedm 273
*ped-s 321
*ped-to-mo- 350
*peh_3(i)- 148, 149, 247
*peh_3-tlom 304
*peh_2- 247
*$pek^{\mu}oh_2$ 354
*$penk^{\mu}e$ 187, 294, 352, 354
*$penk^{\mu}eh_2$-$dekmteh_2$ 356
*$penk^{\mu}$-s-no-ih_1 357
*$penk^{\mu}tos$ 354
*peri 87
*perk- 274
*pet- 84
*pet-na 276
*ph_2tēr 244, 252, 278
*$pleh_1$- 374
*$pleh_1$iōs 212, 349
*plek- 357
*porko- 243, 252
*pos 359

*pos-ti 256, 359
*potis 68
*preh$_2$i 359
*pri-so-mo- 285, 303, 309, 350, 353
*prk- 187
*prk-sk- 274, 372, 375
*prk-sk-oh$_2$ 372
*pro 359
*prok$^{\mu}$- 187, 354
*prok$^{\mu}$-so-mo- 350
*p[h$_1$ou- 273

*p^{h}u- 58

*sal- 61, 244, 275, 301
*sal-ɱ 324
*se- 71, 337, 341
*seb^{h}io 341
*sed-eh$_1$- 371
*seg^{h}- 363
*seh$_2$. 70, 185, 342
*seh$_2$uel- 275
*seh$_1$- 246, 263
*sei 341
*sek$^{\mu}$- 73, 278, 283
*sek$^{\mu}$-e-so 406
*sek$^{\mu}$ondos 255
*se-leuH-io- 375
*sem- 10, 243, 352, 357
*sēmi- 276
*septeh$_1$-dekmteh$_2$ 356
*sept-eh$_1$n-ih$_1$ 357
*septm 283, 352, 354
*septmo- 355
*seue 341
*(s)g$^{\mu h}$el- 283
*(s)krV- 187
*sleub- 279
*sm-i-h$_2$ 318
*smih$_2$ g^{h}slih$_2$ 352, 357
*sneh$_1$- 374
*sneig$^{\mu h}$- 281, 283
*snei-n-g$^{\mu h}$- 179, 283
*snig$^{\mu h}$- 179
*snuso- 252
*snusos 245
*so 70, 185, 342
*soi 341
*sp^{h}ereg- 58
*spek- 278, 283
*spek-io- 371
*sper-n-H- 375
*sriHg- 284
*steA- 51
*steh$_2$- 51, 142, 244, 247, 278, 284, 317, 373, 402
*steh$_2$-ieh$_1$-m 402
*steh$_2$-i-oh$_2$ 397
*(s)terg$^{\mu h}$- 283
*sth$_2$-d^{h}lo- 284
*sth$_2$-d^{h}lom 282, 304
*sth$_2$-to- 244
*sti-st(e)h$_2$- 370
*suH-s 248, 263
*sue-d^{h}(e)h$_1$- 206
*sueh$_2$du- 272
*sueid-/suoid- 248
*sueks/seks 352, 354
*suekseh$_2$-dekmteh$_2$ 356
*sueks-no-ih$_1$ 357
*suep-no-s 272, 276, 294
*suesōr 243, 272, 286
*suh$_2$el- 275
*suos 342
*(s)uper(i) 359
*(s)upo 359

*t'er-/t'or-/t'ɾ- 17
*te 70
*teb^{h}io 70, 339
*tei 70, 339
*ten- 302, 303
*terh$_2$- 189
*teue 70, 339
*tn-to-s 273
*to- 342
*tod 70, 185, 342
*toi 70, 315, 339
*tot 406
*treb- 279
*treies 271, 278, 352, 353
*trih$_2$ 353

*trih$_2$-dekmteh$_2$ 356
*trio- 353
*tris 357
*tris-no-ih$_1$ 357
*tuH 70, 339
*tue 70, 339
*tuer- 272
*tuet 70, 339
*tuos 342

*uŏs 340
*uai 361
*-ue 87, 90, 361
*ued- 296
*ueg^h- 17, 243, 272, 282, 370
*ueg^{h}oh$_2$ 281
*ueg$^{u^h}$- 179, 283
*ueiHs 247, 263
*ueid- 77, 271, 272
*ueid-s- 372
*ueih$_1$-ōn 101
*ueiko- 271
*uei(s) 70, 339
*uek- 370
*uek^u- 247, 263, 271, 300, 301, 377
*uelu-io- 375
*uemh$_1$- 375
*uer- 282
*uerd^h- 275
*ue-uk^u- 377
*uiHro- 304
*uiHros 246
*uiHs- 263
*uid- 77, 372, 375
*uid-to- 287
*ulk^{u}os 68, 301
*uoid- 77
*uoid-/uid- 74
*uok^u- 271, 300
*uos-teros 342
*ur-d^h- 282
*ureh$_2$d-mos 276
*usme 340
*usmei 340
*usmet 340
*usom 340
*u̯k^{u}os 273
*uōk^u- 247, 263, 272
*uōk^u-s 278

Index of authors

Adams, D. Q. 31, 45, 60, 94, 98, 99
Adams, J. N. 81, 237, 238, 240
Adrados, F. R. 165
Agostiniani, L. 166
Ajello, R. 36
Allen, W. S. 50, 250, 264, 265, 268, 292
Almar, K. P. xxii, 196
Andersen, H. 34
Andreau, J. 218
Anreiter, P. 32
Anthony, D. W. 42, 43
Anttila, R. 19, 21, 169

Back, M. 25, 55
Bader, F. 178
Bailey, C. 220
Baldi, P. 19, 23, 57, 58, 73, 259, 280, 289, 360, 365, 394, 396, 398
Ball, M. J. 32
Bammesberger, A. 52, 60, 188, 354
Barfield, L. 97, 102, 114
Barwick, C. 221
Bauer, B. L. M. 81, 240, 363
Beekes, R. S. P. 23, 24, 52, 58, 60, 61, 65, 68, 101, 109, 111, 153, 165, 300, 310, 316, 362, 370
Beeler, M. 158, 159, 170, 174, 180
Benveniste, É. 45, 52, 86, 94, 362, 379, 392
Best, J. 165
Bloomfield, L. 79
Bodel, J. 217, 218
Bomhard, A. R. 17, 18, 44, 55, 65
Bonfante, G. 108, 161, 162, 164, 167, 178
Bonfante, L. 108, 161, 162, 164, 167
Bopp, F. 3
Boretzky, N. 15
Bottiglioni, G. 127, 128, 130, 132, 133, 136, 140, 142, 174
Bove, L. 218
Bowman, A. K. 240
Boyce, B. 232
Brixhe, C. 26
Broderick, V. 289
Brugmann, K. 50, 51, 379
Brunner, L. 153
Buck, C. D. v, 11, 28, 45, 130, 136, 300

Campanile, E. 45, 170, 205
Campbell, L. 17
Cardona, G. 24
Cavalli-Sforza, F. 183
Cavalli-Sforza, L. L. 183
Cavenaile, R. 238, 240
Chadwick, J. 27
Chafe, W. 17
Chantraine, P. 364
CIL 122, 125, 140, 143, 153, 196, 197, 202, 204, 206, 207, 208, 214, 215, 216, 217, 236, 237, 286, 287, 313
CLE 287
Coleman, R. 29, 168, 170, 186, 189, 194, 204, 357
Coles, J. M. 98, 102
Collinge, N. E. 4, 51, 60, 261, 262
Comrie, B. 19, 34
Conway, R. S. xxi, 122, 128, 133, 134, 135, 136, 143, 146, 147, 149, 150, 151, 152, 153, 154, 157, 158, 159, 167, 168, 196
Cornell, T. J. 99, 104, 106, 108, 109, 110, 112, 165
Cowgill, W. 52, 58, 61, 65, 187, 188
Cristofani, M. 108, 161, 164, 200

Darnell, R. 17
David, M. 121
De Simone, C. 150, 205
Debrunner, A. 197
Demiraj, S. 36
Dessau, H. 196
Devine, A. M. 256, 264
Devoto, G. v, 100, 168
Diakonov, I. M. 42, 44
Diebold, A. R., Jr. 41
Diehl, E. 196

Dixon, R. M. W. 19
Dumézil, G. 214
Durante, M. 127, 132, 133, 152

Edgerton, F. 60
Eichner, H. 197, 242
Elerick, C. 85
Endzelīns, J. 35
Ernout, A. 166, 181, 182, 190, 196, 220, 242, 300
Eska, J. F. 32, 146, 344
Evans, D. E. 32, 146

Fife, J. .31, 32
Flobert, P. 196, 367, 392
Fogolari, G. 158, 159, 160
Fox, A. 13, 19, 20, 21
Friedrich, J. 86, 309
Friedrich, P. 45, 80, 94
Fugazzola Delpino, M. A. 99, 103

Gager, J. G. 148
Gamkrelidze, T. V. 43, 52, 55, 56, 57, 67, 72, 86, 362
Garrett, A. 55
Georgiev, V. I. 111, 165
Giacalone Ramat, A. 23
Giacomelli, G. 123, 124, 166, 170
Giacomelli, R. 125
Gimbutas, M. 42, 43
Goddard, I. 17
Golla, V. 17
Gonda, J. 309
Gordon, A. E. xxi, 122, 125, 126, 196, 197, 202, 206, 207, 208, 214, 216
Greenberg, J. H. 16, 80, 390
Guarducci, M. 126
Gyármathi, S. 3

Hall, R. A., Jr. 18
Halle, M. 64, 65
Halporn, J. W. 236
Hamp, E. 36
Harding, A. F. 98, 102
Hawkins, J. A. 34, 81
Herman, J. 227, 241
Hodge, C. T. 44
Hoenigswald, H. 4, 28
Hoffmann, J. B. 242
Holloway, R. R. 97, 99, 101, 107, 126, 196, 202, 204
Hopper, P. 55, 58
Hrozný, B. 29
Hymes, D. 17

Ivanov, V. V. 43, 52, 55, 56, 57, 65, 67, 72, 86, 362
Iverson, G. K. 56

Jackson, K. 32
Jakobson, R. 53
Janson, T. 253
Jeffers, R. J. 168, 407
Job, M. 55
Johnson, S. E. xxi, 135, 143, 146, 147, 149, 150, 151, 152, 153, 154, 157, 158, 159, 167, 168, 196
Johnson-Staver, R. 57, 280
Joseph, B. D. 18, 28, 55, 56, 57, 168, 171, 172, 178, 281, 347

Keil, H. 221
Kent, R. G. 221, 250
Keppie, L. 121, 196
Kerns, J. A. 362
Kerns, J. C. 18, 44
Kilian, L. 42
King, R. D. 260
Kiparsky, P. 7, 15, 84, 260, 265, 289
Klingenschmitt, G. 310
König, E. 34
Kortlandt, F. 58, 259
Krahe, H. 150, 151, 183, 185
Kufner, H. L. 34
Kuryłowicz, J. 51, 52, 61, 83, 86, 261, 334, 363, 364, 392
Kurzová, H. 67, 72, 362, 363, 367, 368

Labov, W. 15
Lachmann, K. 259
Ladefoged, P. xxv
Lass, R. 18

Lazzeroni, R. 24
Lehmann, W. P. 33, 52, 53, 58, 60, 67, 76, 80, 86, 125, 359, 362, 363, 369, 372
Lejeune, M. 36, 143, 146, 147, 159, 160, 204
Leumann, M. v, 191, 242, 293, 295, 297, 300, 318, 376
Lewis, D. 148
Lien, C. 15
Lindsay, W. M. 196, 231
Lockwood, W. B. 23
Löfstedt, B. 86
Lubotsky, A. 61
Luraghi, S. 30

Mańczak, W. 41
Maddieson, I. 61
Makkay, J. 42
Mallory, J. P. 29, 41, 43, 44, 45, 94, 95, 98, 99, 101
Maltby, R. 104
Malte-Brun, C. 23
Manaster Ramer, A. 17, 55
Mancini, M. 178, 200, 201
Marinetti, A. 134, 135, 170
Marouzeau, J. 81, 240
Martinet, A. 306, 355, 381
Mayrhofer, M. 52, 58, 61
McCarthy, J. J. 54, 58
McCloskey, S. C. 35
McMahon, A. M. S. 17
McMahon, R. 17
Meid, W. 30, 32, 185
Meiggs, R. 148
Meillet, A. v, 36, 50, 60, 183, 187, 190, 220, 242, 300, 395
Meiser, G. 174, 407
Melchert, H. C. 60
Mellor, R. 106
Mester, R. A. 250, 256, 265, 269, 334, 376, 381
Miller, D. G. 28, 55, 56, 80, 280, 362, 364, 367, 368, 406
Mommsen, T. xxi
Monteil, P. 52, 293, 294, 297, 300, 310, 318
Morandi, A. 123, 124, 127, 128, 130, 132, 135, 136, 140, 142, 143, 146, 154, 157, 160

Nehring, A. 45
Neu, E. 30, 362
Niedermann, M. v, 212, 242, 250, 268, 286, 293
Norden, E. 214, 215
Normier, R. 55
Nyman, M. A. 178

Ostwald, M. 236

Palermo, D. 289
Pallottino, M. 97, 98, 102, 103, 106, 109, 110, 164
Palmer, L. R. v, 28, 185, 191
Panhuis, D. 81, 240
Parlangeli, O. 150, 151
Payne, J. R. 23, 25
Pedersen, H. 55, 334, 379
Pellegrini, G. B. 158, 159, 160
Pestman, P. W. 121
Petersmann, H. 232
Pfiffig, A. J. 164
Pfister, R. v
Pighi, G. B. 238
Pigorini, L. 109
Pinkster, H. 81, 231, 235, 240
Pisani, V. v, 123, 124, 126, 127, 128, 130, 132, 133, 135, 136, 140, 142, 146, 147, 148, 151, 152, 153, 154, 156, 157, 159, 168, 196, 197, 202, 206, 207, 208, 214, 215, 236, 379
Pohl, H.-D. 398
Pokorny, J. 11, 242
Polomé, E. G. 52, 150, 158
Poultney, J. 115, 136, 152, 168, 169
Prosdocimi, A. v, 130, 136, 150, 158, 159, 160, 168, 204
Puhvel, J. 30
Pulgram, E. 18, 96, 100, 112, 117, 123, 124, 126, 127, 128, 132, 135, 140, 142, 147, 149, 150, 153, 154, 157,

159, 160, 168, 196, 197, 215, 217, 236, 237, 241, 264

Ramat, P. 23, 34
Rask, R. 3
Reich, J. 107
Renfrew, C. 98
Ringe, D. A. 17, 18, 31, 57, 186, 187
Risch, E. 307, 407
Rix, H. 65, 140, 142, 152, 153, 161, 162, 164, 167, 175, 176, 197, 200, 265, 364, 380
Rogers, R. A. 17
Rose, H. J. 213
Rosén, Haiim 78
Rosén, Hannah 101
Rosenmeyer, T. G. 236
Ruhlen, M. 17, 24

Salmons, J. C. 18, 55
Sandys, J. E. 196
Santoro, C. 150, 151
Sapir, J. D. 17
Saussure, F. de 51
Schindler, J. 65
Schleicher, A. 18, 49, 50
Schmalstieg, W. R. 34, 35, 60, 85, 175, 178, 309
Schmid, W. P. 41
Schmidt, K. H. 32, 187, 362
Schmitt, R. 25
Schmitt-Brandt, R. 61
Schrader, O. 45
Schrijver, P. 52
Schumacher, S. 154
Schwartz, B. 362
Schwyzer, E. 148
Sedgwick, W. B. 232
Seebold, E. 60
Seelmann, E. 285, 286
Senn, A. 35
Sheratt, A. 39, 42
Sheratt, S. 39, 42
Shevoroshkin, V. 17, 55
Sihler, A. L. v, 58, 60, 61, 65, 68, 182, 242, 293, 300, 307, 310, 336, 357, 362, 370, 390, 391, 407
Silvestri, D. 29, 125, 126, 205
Sims-Williams, N. 25
Sims-Williams, P. 32
Skutsch, O. 82
Smith, M. S. 233
Smyth, H. W. 86
Sommer, F. v, 242, 293, 300
Southworth, F. 169
Stang, C. S. 363
Steinbauer, D. H. 199
Stephens, L. D. 256, 264
Stibbe, C. M. 204
Stolz, F. 197
Strunk, K. 261
Sturtevant, E. H. 65, 250, 269
Swiggers, P. 54
Szemerényi, O. 35, 45, 52, 53, 58, 71, 220, 362, 370, 397

Taylor, A. 186
Teeter, K. V. 48, 80
Thieme, P. 41
Thomas, H. 43
Thomas, J. D. 240
Thomas, W. 31
Thurneysen, R. 187, 334
Tibiletti Bruno, M. G. 143, 146, 147, 154
Tischler, J. 31
Toth, A. 153
Touratier, C. 288
Trump, D. H. 96, 97, 98, 100, 101, 102, 103, 112, 114, 115, 149

Untermann, J. 151, 158

Väänänen, V. 228, 236, 241
Van Coetsem, F. 34
van der Auwera, J. 34
Van Der Meer, L. B. 109, 111
Van Groningen, B. A. 121
Vendryes, J. v, 242, 300
Vennemann, T. 33, 41, 55, 57, 58, 61, 80, 81, 102, 183, 185, 220, 287
Vetter, E. 122, 123, 124, 127, 128, 130, 132, 133, 134, 135, 136, 140, 142,

156, 157, 158, 166, 187
Vine, B. 196, 197, 200, 201, 202
Vineis, E. 29
von Planta, R. 174

Wachter, R. 122, 126, 196, 197, 202, 204, 206, 207, 216
Wackernagel, J. 80, 364
Walde, A. 242
Wallace, R. E. 28, 55, 56, 57, 126, 142, 158, 165, 168, 171, 172, 178, 281, 347
Wang, W. S.-Y. 14, 15
Warmington, E. H. 208, 214, 218, 221
Warnow, T. 186
Watkins, C. 11, 48, 52, 58, 81, 86, 124, 186, 187, 189, 206, 242, 261, 262, 359
Whatmough, J. xxi, 100, 112, 115, 129, 135, 143, 146, 147, 149, 150, 151, 152, 153, 154, 157, 158, 159, 167, 168, 185, 196
Whitney, W. D. 49, 368
Winter, J. G. 238
Winter, W. 31, 36, 387, 390, 392
Woodhouse, R. 55, 57
Woodhuizen, F. C. 165
Woolford, E. 94
Wright, R. 241
Wyatt, W. F., Jr. 61

Young, T. 23
Youtie, H. C. 238

Zamboni, A. 157
Zamudio, R. J. 344
Zeps, V. 35

Index of classical references

Caes.
BGall.
1.35.3 360
1.52.5 286
2.31.1 394
4.32.3 394
6.13.8 360
Cato
Agr.
5.5 409
132.1 220
Catul.
Carm.
4.1 191
Char.
Gramm.
1, p. 19 223
1, p. 83 223
1, p. 90 223
1, p. 95 223
1, p. 106 223
1, p. 109 223
2, p. 197 224
2, p. 216 224
4, p. 288 224
Cic.
Cat.
1.32 394
De Or.
3.44 181
Fam.
12.23.2 360
9.21.2 285
Off.
1.157 394
Claudius Terentianus 238
Dem.
De Cor.
236 360
Dion. Hal.
Ant. Rom.
1.26 110
1.26–30 109
1.28 110
1.29 110
24–30 109
Ennius
Ann.
1.9 265
1.53 342
16.22 342
2.17 338
6.10 265
7.2 342
Gel.
NA
9.6 259
13.6 182
20.1.45 218
Hdt.
1.94 109
4.151 194
Ov.
Met.
13.141 191
15.392 286
Petron.
Sat.
34 232
37 231
38.4 234
43.1 234
52.10 235
57.6 234
58.8–9 235
66.2 234
74.15 234
Plaut.
Asin.
299 339
Aul.
116 394
Capt.
555 265
Cas.
90 339

185 230
Curc.
189 86, 395
Merc.
301 287
310 287
Miles
1033 339
Mostell.
86 266
596 229
959 230
Persa
17 230
457 231
Poen.
219–221 394
Pseud.
273 230
Truc.
160 342
Prisc.
Inst.
6, p. 198 225
6, p. 215 225
6, p. 229 225
6, pp. 230–231 225
6, p. 235 226
6, p. 264 226
6, p. 301 226
8, p. 399 226
9, p. 482 226
10, p. 522 227
Quint.
Inst.
1.1.5 395
1.4.8 250, 254
1.4.13 286
6.3.17 181
Ter.
Phorm.
1028 342
Thuc.
1.86 86
1.137.2 360
Varro
Ling.
5.85 136
6.4 200
7.12 221
7.26–27 286
7.27 290
7.29 133
7.42 221, 344
7.47 221
7.49 222
7.92 222
7.96 222
7.107 222
Rust.
2.5.6 172
Verg.
Aen.
1.71 86
1.130 194
Xen.
An.
1.7.17 315

Index of subjects

1st pl. mid., from PIE to Latin 391
1st pl. perf., from PIE to Latin 388
1st pl. pres./aor., from PIE to Latin 385
1st sg. mid., from PIE to Latin 390
1st sg. perf., from PIE to Latin 387
1st sg. pres./aor., from PIE to Latin 385
2nd pl. mid., from PIE to Latin 391
2nd pl. perf., from PIE to Latin 388
2nd pl. pres./aor., from PIE to Latin 386
2nd sg. mid., from PIE to Latin 390
2nd sg. perf., from PIE to Latin 387
2nd sg. pres./aor., from PIE to Latin 385
3rd pl. perf., from PIE to Latin 388
3rd pl. pres./aor., from PIE to Latin 386
3rd sg. perf., from PIE to Latin 388
3rd sg. pres./aor., from PIE to Latin 385
3rd sg./pl. mid., from PIE to Latin 391

Aṣṭādhyāyī (see Sanskrit) 24
abl. sg.
  3rd decl. cons. stem 325
  a-stem 319
  e-stem 335
  i-stem 328
  u-stem 331
abl./instr. sg.
  o-stem 314
ablative in PIE 86
ablaut (vowel gradation) in PIE 76–77
acc. pl.
  a-stem 320
acc. pl. (non-neut.)
  3rd decl. cons. stem 325
  i-stem 328
  o-stem 316
  u-stem 332
acc. sg.
  a-stem 318
  e-stem 335
  o-stem 313
acc. sg. (non-neut.)
  3rd decl. cons. stem 324
  i-stem 327
  u-stem 331
accent in Latin 268–269
accent in PIE 64–65
accent, pre-Latin 269
accusative in PIE 84
acrostatic nouns 64
active voice in PIE 72, 364
active/non-active languages, characteristics 362–363
active/non-active verbs
  early PIE 362–364
  PIE 72
adjectival comparison in PIE 69
adjectives in PIE 68
adverbs
  Latin 350
  PIE 87
Aeolic 27
Aequi 115
Aequian 29
Aequian inscription 122–123
Aeschylus 26
Aetolian 27
Afrikaans 33
Afroasiatic 17
agreement in PIE 88
Akkadian 29
Albanian 36, 116
Alemannic 33
Altaic 17
Amerind 16
analogy (grammatical change) 5, 48
Anamares 114
anaphoric pronouns 342–343
Anatolian 29
Anglo-Frisian 33
Anglo-Saxon 33
animal names in IE languages 9
aorist stem in PIE 376
Apennine culture 99
Arandic languages 15
Arcadian 26
Arcado-Cyprian 26

archaeological evidence 93
archaism vs. innovation (see reconstruction) 47
areal/chronological classifications of Italic languages 167–168
Aristophanes 26
Aristotle 26
Armenian 35
Armenian consonant shift 54
Ashkun 25
aspect from early PIE to classical PIE 365
aspect/tense
  PIE 365
  PIE to Latin 366
assimilation, Latin 293
a-stem (first) declension 317
Atharvaveda (see Vedic) 24
Attic 26
Attic-Ionic 26
augment in PIE 369
Aurunci 115
Austronesian 13
Avestan 25

Bactrian 25
Baltic 34
  unity of 21
Balto-Slavic 23, 35
Baluchi 25
Bangani 24
Basel Epigram 35
Bavarian 33
'beech' in relation to the IE homeland 41
Belarusian (White Russian) 34
Bell-Beaker culture 103
Bengali 24
Beowulf (see Old English) 33
Boğazköy (see Hittite) 29
body parts in IE languages 9
Boeotian 27
Boii 114
borrowing 15, 47
borrowing between Latin and neighboring languages 181–183
borrowing from Greek to Latin
  dating 190
  via Etruscan 190
Botorrita texts (see Celtiberian) 32
Breton 31
brevis brevians 264
Brittanic (Brythonic) 31
Bronze Age 99
Brugmann's system of PIE phonology 51
Bruttii 116
Bulgarian 34

Calabri 116
Camunni 114
Carian 29, 30
Carni 114
cases of PIE 83–87
Catalan 29
Cato, excerpt 219
Celtiberian (Hispano-Celtic) 32
Celtic in relation to Italic (see Italo-Celtic) 186–189
Celtic in relation to other IE languages (see "Old European") 183–184
Celtic languages 31–32
Celtic languages in Italy 118
Celtic, Continental 32
Celtic, Insular 31
Celtic, samples (see Gaulish and Lepontic inscriptions) 142–147
Celts 114
Cena Trimalchionis 231–235
Cenomani 114
centum–satem division 38–39
Charisius, excerpts 222–224
chronology of features 47
Chukchi-Kamchatkan 17
Claudius Terentianus 237–240
Coan 27
Codex Argenteus (see Gothic) 33
Codex Marianus (see Old Church Slavic) 34
Codex Suprasliensis (see Old Church Slavic) 34
Codex Zographensis (see Old Church Slavic) 34
"coefficients sonantiques" 51
comparative cultural evidence 94

comparative degree (adjectives) 349
comparative method
  criticism of 14
comparative method (see reconstruction) 2, 10, 15, 16, 19
  central notions 3
comparison of adjectives 349
complementation in PIE 91
complex sentences in PIE 90
complexity in relation to PIE morphology 66
concord in PIE 88
conjunctions 361
consonantal stems, third declension 321–326
consonants
  from PIE to Latin 270–290
  Latin 290–292
Continental Celtic 32
contracted perfects in Latin 381
conventions for the citation of inscriptions 121–122
Copper Age 98
Corinthian 27
Cornish 31
creoles 21
Cretan 27
Crete 26
cretic shortening 334
criteria for determining borrowing between Latin and neighboring languages 181–183
Croatian 34
Cuneiform Luwian 30
Cypriote 26
Cyrenaean 27
Cyrillic alphabet 34
Czech 34

Dalmatian 29
Danish 34
Dardic 24
Darius the Great 25
dat. sg.
  3rd decl. cons. stem 324
  a-stem 318
  e-stem 335
  i-stem 328
  o-stem 314
  u-stem 331
dat./abl. pl.
  3rd decl. cons. stem 326
  e-stem 336
  u-stem 332
dat./abl./instr. pl.
  a-stem 320
  i-stem 329
dat./abl./instr./loc. pl.
  o-stem 316
dative in PIE 85
Daunii 116
decads, hundreds, thousands 356
demonstrative pronouns
  Latin 343–345
  PIE 70–71, 342–343
Dene-Caucasian 17
dental suffixes 307
deponent and middle in Latin 392–396
deponents 395–396
differences between Latin–Faliscan and Oscan–Umbrian 178–180
differences between Oscan and Umbrian 176
diphthongs
  from PIE to Latin 248–250
  Latin 266–267
diphthongs in final syllables, Latin 267
diphthongs in non-final syllables, Latin 266
direct middles 393
dissimilation, Latin 295
Doric 27
Dravidian 13, 17
Dutch 33

East Argolic 27
East Locrian 27
ego, declension 338
Elamo-Dravidian 17
Elbing Vocabulary 35
Elean 27
'eleven' to 'nineteen' 355

Elymian 36
English 1, 2
epenthesis, Latin 296
Eskimo-Aleut 16, 17
ē-stems, fifth declension 333–336
Etruscan
  depth of understanding of 163–164
  genetic connections 164–165
  influences on Latin 165–167
  inscriptions 160
  monuments of 161–163
  writing 160
Etruscan expansions 108
Etruscan influences on Rome 108
Etruscan origins 109–112
Etruscans 28, 107–112, 114
  ancient views on 95
Eurasiatic 17
European Stone Age 96–98
evidence of ancient authors 94
evidence of writing 94
expressive forms in Plautus 229

Falerii Veteres 170
Faliscan 28
Faliscan inscriptions 123–125
Falisci 115
family tree of the Italic languages 181
family trees (see genetic classification) 21, 169
farming in relation to the IE homeland 43
Faroese 34
Finno-Ugric 3, 13
first conjugation *-ā-* class, Latin 373
Flemish 33
French 29
Frentani 115
fricative
  from PIE to Latin 283–290
Frisian 33
future active in Latin 398
future passive in Latin 399
future passive participle 307
future perfect active in Latin 399
future perfect passive in Latin 399

Gaelic (Goidelic) 31
Galatian 32
Gathic 25
Gaudo culture 98
Gaul 31
Gaulish 32
Gaulish inscription 142–144
gen. pl.
  3rd decl. cons. stem 326
  a-stem 320
  e-stem 336
  i-stem 329
  o-stem 316
  u-stem 332
gen. sg.
  3rd decl. cons. stem 324
  a-stem 318
  e-stem 335
  i-stem 328
  o-stem 313
  u-stem 331
genetic classification (see family trees) 21
genetic classifications of Italic languages (see family trees) 168–169
genetic descent of Latin–Faliscan and Oscan–Umbrian 180
genetic relationship 7
genitive in PIE 85
geographic influences between Latin–Faliscan and Oscan–Umbrian 180
Germanic 32
gerund and gerundive 406–407
Gheg 36
Gilyak 17
Glagolitic alphabet 34
glides
  from PIE to Latin 270–272
glottalic theory (see typology) 52–58
Gothic 2, 32
graffiti 235–237
grammatical categories (see parts of speech) 300
Grassmann's Law 56
Greek (Hellenic) 25
Greek inscriptions 147–149
Greek loanwords in Latin 191–193

Greek loanwords into Latin in relation to Latin accent 270
Greeks 28, 117
Grimm's Law 4, 54
Gujarati 24
guṇa 49, 50

Hadrian's wall 240
Hattic 29
Hattušaš (see Hittite) 29
'have' in PIE 363
Hellenistic Koine 28
Hernici 115
hic, haec, hoc, declension 343
Hieroglyphic Luwian (Hieroglyphic Hittite) 30
High German 33
Hindi 24
Hirpini 115
historical evidence 93
Histri 114
Hittite 29
  written evidence 94
Homer 26
Homo erectus 96
Homo sapiens neanderthalensis 96
Homo sapiens sapiens 96
'horse' in relation to the IE homeland 95
Hurrian 29
hydronyms in relation to the IE homeland 41
hysterodynamic accent 64

iambic shortening 264, 338
  in relation to Latin accent 270
Iapyges 116
Iapygians 28
Idem, eadem, idem, declension 343
IE homeland 39–44
Iguvine Tables (see Umbrian) 29
Iliad 26, 94
ille, illa, illud, declension 344
Illyrian 38, 116
Illyrians 114
Illyrii 116
imperative
  Latin 405–406
  PIE 404
imperative endings in Latin 405
imperfect active in Latin 397
imperfect passive in Latin 399
imperfective subjunctive in Latin 402
indefinite pronouns 345–348
Indic (Indo-Aryan) 24
indirect middles 393
Indo-European 17
  origin of term 23
Indo-Europeanization of Italy 99–104
Indo-Iranian 23
  unity of 21
infinitives 407–409
  PIE 75
inflection in PIE 79
inflectional (fusional) languages 79
Ingvaeonic (North Sea Germanic) 33
injunctive 368
inscriptions 121
instr. sg.
  3rd decl. cons. stem 325
  a-stem 319
instrumental in PIE 86
Insubres 114
Insular Celtic 31
interjections 361
internal reconstruction 4
interrogation in PIE 90
interrogative pronouns 345–348
  PIE 71
Ionic 26
ipse, ipsa, ipsum, declension 344
Iranian 24
is, ea, id, declension 342
iste, ista, istud, declension 344
i-stem, third declension 326–329
Italian 29
Italic 28
  unity of 21
Italic languages, sources of 118–121
Italo-Celtic 32, 186

Jaina-Prakrit 24

Judeo-Persian 25

Kartvelian 17
Kashubian 34
Kati 25
Khania 26
Khorasmian 25
Khotanese 25
Khotanese (Saka) 30
Khowar 24
kinship system of PIE 94
kinship terms in IE languages 10
Knossos 26
k-suffixes 306
Kurdish 25
"Kurgan" culture 42

Labici 115
Lachmann's Law 58, 259–263
Laconian 27
laryngeal theory 52
laryngeals
  from PIE to Latin 242–248
  PIE 242
Latin 28
Latin inscriptions
  Carmen Arvale 213
  Castor and Pollux dedication 196
  commemorative tablet to L. Aemilius Paulus 216
  dedication to Hercules by M. Minucius 207
  dedicatory inscription from Aeclanum 217
  dedicatory inscription to Tita 125
  Duenos vase 197
  epitaph from Rome 215
  epitaph from the Scipionic sarcophagus 206
  Forum Romanum cippus 202
  Garigliano bowl 200
  Lapis Satricanus 204
  Puteolan funerary tablets 217
  Senatus Consultum de Bacchanalibus 208
  Vendia inscription 126
Latin verb, categories 369
Latin-Faliscan 28
Latini 115
Latinians 28
Latvian (Lettish) 34
Law of the XII Tables, excerpt 218
Lehmann's system of PIE phonology 53
Lemnian, connections with Etruscan 111
lengthening of short vowels, Latin 257
Lepontians 28
Lepontic 32
Lepontic inscription 145–147
Lepontii 114
Lesbian 27
letter by Claudius Terentianus 237–240
letter from the archive of Flavius Cerialis 240
letters 237–241
lexical diffusion 14
lexical parallels between Italic and Celtic 189
lexical reflections of PIE culture 45
lexicon in Petronius 233
Libici 114
Ligurian 36
Ligurian glosses 149–150
Ligurians 28, 112, 114, 115
Linear A 26
Linear B 26
Lingones 114
linguistic evidence 93
linguistic paleontology 93
linguistic reality of reconstructions 18
liquids
  from PIE to Latin 274, 274–275
liquids and nasals (consonantal)
  from PIE to Latin 274–277
liquids and nasals (syllabic)
  from PIE to Latin 273–277
Lithuanian 34
loc. pl.
  a-stem 321
  i-stem 329
loc. sg.
  3rd decl. cons. stem 325
  a-stem 319

o-stem 314
loc./instr. pl.
3rd decl. cons. stem 326
e-stem 336
u-stem 333
loc./instr. sg.
e-stem 335
i-stem 328
u-stem 332
locative in PIE 86
long diphthongs in PIE (see Osthoff's Law) 61
long vowels
from PIE to Latin 246–248
Latin 263–266
long vowels in final syllables, Latin 263
long vowels in non-final syllables, Latin 263
long-distance relationships 15
Low German 33
lower numerals in IE languages 8
Lower Sorbian (Lusatian) 34
l-suffixes 304
Lucani 116
Luwian 29
Lycian 29, 30
Lydian 29, 30

Mažvydas 35
Macedonian 34
Mahābhārata (see Sanskrit) 24
Makedonian 38
Manx 31
Marathi 24
"marked"/"unmarked" in relation to PIE word order 81
Marrucini 115
Marrucinian 29
Marrucinian inscription 126–128
Marsi 115
Marsian 29
Marsian inscription 128–129
Median 25
"Mediterranean language" 100
"Mediterranean race" 100
Megarian 27
Mesolithic 96–97
Messapians 28
Messapic 36, 116
Messapic inscription 150–151
Messapii 116
Messenian 27
Metal Ages 98–104
metathesis, Latin 296
method of internal reconstruction (see comparative method) 20
middle (mediopassive) voice in PIE 72, 364
middle endings, from PIE to Latin 389–392
Middle English 1, 33
Middle High German 33
middle in Latin 392–395
Middle Parthian (see Tocharian) 30
Middle Persian (Pahlavi) 25
Middle Persian (see Tocharian) 30
middle, textual examples 394
Mitanni 29
modality in PIE 89
Modern English 1, 33
Modern German 33
Modern Greek 28
Modern Icelandic 34
Modern Persian 25
mood in PIE 73, 368, 400
morphological features in Petronius 233
morphological influences of Greek on Latin 191
morphological parallels between Greek and Latin 194–195
morphological parallels between Italic and Celtic 187–189
multilateral comparison 16, 18
Mycenae 26
Mycenaean 26

Na-Dene 16
nasal infixes in PIE 372
nasal suffixes 302–304
nasals (consonantal)
from PIE to Latin 276–277

nasals (syllabic)
from PIE to Latin 273–274
native languages of the Americas 16
negation in PIE 89
Neogrammarian principle (see regularity principle) 4, 48
Neolithic 97–98
neuter **r/n*-stems 302
nom. sg. (neut.)
o-stem 313
nom. sg. (non-neut.)
3rd decl. cons. stem 321
o-stem 313
u-stem 330
nom./voc. pl.
a-stem 319
nom./voc. pl. (non-neut.)
3rd decl. cons. stem 325
i-stem 328
o-stem 315
u-stem 332
nom./voc. sg.
a-stem 317
e-stem 334
nom./voc. sg. (non-neut.)
i-stem 326
nom./voc./acc. pl.
e-stem 336
nom./voc./acc. pl. (neut.)
3rd decl. cons. stem 325
i-stem 328
o-stem 315
u-stem 332
nom./voc./acc. sg. (neut.)
3rd decl. cons. stem 323
i-stem 327
u-stem 330
nominal and adjectival derivation
from PIE to Latin 300–309
nominal forms of the verb in Latin 406–409
nominal inflection
from PIE to Latin 312–336
PIE 309–311
nominal morphology in PIE 67–68
nominal stem types in PIE 68
nominative in PIE 83
non-finite verbal structures in PIE 75
non-personal pronouns 342–348
non-productive alternations (see internal reconstruction) 20
non-Roman elements in Latin 181–183
Norman Conquest 33
North Picene 36
North Picene inscription 152–153
North Picenes 28
"northwest civilization" (see "Old European") 183–184
Norwegian 34
nōs, declension 339–340
Nostratic macrofamily 17
nouns and adjectives
from PIE to Latin 300–336
number in PIE 74
numerals 351–357
Nūristānī (Kafir) 25

obstruents
from PIE to Latin 277–290
Odyssey 26, 94
Ogham Irish 31
Old Church Slavic (Old Bulgarian) 34
Old English 1, 33
"Old European" (see "northwest civilization") 183–184
Old High German 2, 33
Old Icelandic (Old Norse) 2, 34
Old Irish 32
Old Low Franconian 33
Old Low Frisian 33
Old Persian 25
Old Prussian 34
Old Saxon 33
Old Welsh 31
'one' to 'ten' in PIE 352
optative in PIE 401
Oscan 115
Oscan, Tabula Bantina 129–132
"Oscanic" languages 169
Oscans 28, 112
Oscan–Umbrian (Sabellic, Sabellian) 28
Osci 115

Ossetic 25
o-stem (second) declension 312–317
Osthoff's Law 61
Ostromirovo Evangelie (see Russian) 34

Paeligni 115
Paelignian 29
Paelignian inscription 132–134
Pahlavi (Middle Persian) 25
palafitte (see terramara) 98, 99, 100
Palaic 29
Paleolithic 96
Pāli 24
Pamphylian 26
Panjabi 24
papyri (see letters) 121, 240
Parthian 25
participial constructions in PIE 90
participles in PIE 75
particles in PIE 87, 358
parts of speech (see grammatical categories) 300
Pashto 25
Pelasgians 117
Pentri 115
Penultimate Law, Latin (see three-syllable rule) 268
people of ancient Italy 112–117
perfect active in Latin 398
perfect and middle in PIE 363
perfect endings, from PIE to Latin 386–389
perfect in *-s-* in Latin 378–380
perfect in *-v/u-* in Latin 380–383
perfect passive in Latin 399
perfect passive participle 309
perfect stem
  Latin 377–383
  PIE 377
perfective subjunctive in Latin 403
perfective/imperfective in PIE 363
perfects with lengthened root-vowel in Latin 377
person in PIE 74, 368
personal endings of the middle in PIE 389
personal endings of the perfect in PIE 387
personal endings, PIE 383
personal pronouns
  from PIE to Latin 338
  Latin 337
  PIE 70, 337
Petronius 231–235
Peucetii 116
Phocian 27
phonological correspondences (see reconstruction) 10, 12, 13, 16, 20
phonological features in Petronius 232
phonological parallels between Italic and Celtic 187
phonological processes affecting consonants in Latin 293–298
phonological regularity 48
phonological system of PIE 59
Phrygian 38
Pianello-Timmari horizon 101
Picentes 115
Pictish 31
PIE culture and civilization 39
PIE morphology 66
PIE phonology 49
Plato 26
Plautus 228–231
pluperfect active in Latin 399
pluperfect passive in Latin 399
Polabian 34
Polada 99, 100
Polada lake-dwellings (see palafitte and terramara) 98
Polish 34
Pompeii 235
Portuguese 29
possessive pronouns (adjectives) 341
postpositions in relation to PIE word order 81
Prae-Italic languages 167–168
Praenestine Fibula 125
Praenestini 115
Praetuttii 115
Prakrits 24
pre- and postpositions in PIE 87

prepositions in relation to PIE word order 81
present active in Latin 397
present active participle 308
present and aorist endings
from PIE to Latin 385–386
present passive in Latin 399
present stem in Latin 373
preverbs and prepositions 358–360
preverbs in PIE 87
primary endings in PIE (see secondary endings) 74, 383
Priscian, excerpts 225–227
pronominal adjectives 348
pronominal morphology in PIE 69–71
pronominal types in PIE 70–71
pronouns 336–348
prosodic rule, Latin 265
prosodic targets 376, 382
proterodynamic accent 64
proto-forms (see reconstruction) 7
Proto-Germanic 21
Proto-Indo-European (PIE) 2
Proto-Italic 168, 180–181
protolanguages 15
Proto-Nostratic (examples) 17
Proto-Nostratic (see multilateral comparison) 17
Proto-Romance 18
proto-sounds (see reconstruction) 12
Proto-Villanovan 101
Pylos 26

qualitative ablaut in PIE (see quantitative ablaut) 76
quantitative ablaut in PIE (see qualitative ablaut) 77
quis, quid, declension 347–348

Raeti 114
Raetic 36
Raetic inscriptions 153–156
Rāmāyaṇa (see Sanskrit) 24
reciprocal middles 393
reconstructed case endings of PIE 68
reconstruction (see comparative method) 11, 12
reconstruction technique 6
reduplicated perfects in Latin 378
reduplicated presents in PIE 370
reduplication 377
PIE 369
reflexive 392
reflexive pronoun in PIE 71
reflexive *sĕ* 341
registers 228
regularity doctrine 14
relationship between Italic and Celtic (see Italo-Celtic) 186–189
relationship between Italic and Germanic 185–186
relationship between Italic and other IE languages 183–195
relationship between Latin and Faliscan 170–174
relationship between Latin and Greek 189–195
relationship between Oscan and Umbrian 174–180
relative clauses in PIE 90
relative pronouns
from PIE to Latin 345–348
PIE 71
Remedello culture 98
resonants
from PIE to Latin 270–277
resonants and obstruents, PIE 271
Ṛgveda (see Vedic) 24
Rhaeto-Romansch 29
Rhodian 27
rhotacism 5, 285
Rinaldone culture 98
Romance languages 29
Romani 115
Rome, origins 104–107
root nouns 300
root presents in PIE 370
r-suffixes 304
Rumanian 29
Russian (Great Russian) 34
Rutuli 115

Sabelli (Samnites) 115
Sabine 29
Sabine glosses 134
Sabini 115
St. Mesrop 36
Saka of Tumshuq 30
Salassi 114
Sallentini 116
'salmon' in relation to the IE homeland 41
Samnites 112
Sanskrit 24
Sardinian 29
Satyricon 231
Schleicher's system of PIE phonology 50
Scots Gaelic 31
second conjugation *-ē-* class, Latin 374
secondary endings in PIE (see primary endings) 74, 383
selection of *-v/u-* perfect and *-s-* perfect in Latin 381–383
Semigallian, Selonian, Curonian, Yatvingian 34
Semitic 3
semivowels
  from PIE to Latin 245–246
Senones 114
Serbian 34
Serbo-Croatian 34
sermō cotīdiānus 228, 231
sermō plēbēius 228, 231
sermō rūsticus 228
sermō urbānus 228
shared lexical items
  among Italic and Celtic 184
  among Italic and Germanic 184
  among Italic, Germanic and Celtic 184
  among Italic, Germanic, Celtic, and Baltic 183
Shina 24
short vowels
  from PIE to Latin 243–246
  in final closed syllables, Latin 257
  in final open syllables, Latin 256
  in initial syllables, Latin 252
  in medial closed syllables, Latin 254
  in medial open syllables, Latin 253
shortening of long vowels, Latin 264
  before certain finals 266
  in hiatus 265
Sicani 116
Sicanian 36
Sicel 36, 116
Sicel glosses 158
Sicel inscription 156–157
Sicels 28
Siculan 116
Siculi 116
Sievers' Law 60, 376
similarities between Faliscan and non-Roman Latin 172–173
similarities between Latin–Faliscan and Oscan–Umbrian 177–178
similarities between Oscan and Umbrian 174–175
Simon Grunau's *Paternoster* 35
Simon Grunau's Vocabulary 35
simplicity in relation to PIE morphology 66
simplification of consonant clusters, Latin 297
simplification of geminate consonants, Latin 298
simplification of groups of three consonants, Latin 297
Sino-Caucasian 17
Skeireins (see Gothic) 33
Slavic (Slavonic) 34
Slovak 34
Slovenian 34
Sogdian (see Tocharian) 25, 30
Sophocles 26
sound correspondences (see reconstruction) 15
South Picene 29
South Picene inscription 134–136
South Picenes 28
Spanish 29
Spoken Latin 227–235
Standard Literary Latin 227
Statielli 114
status of **a* in PIE 60

stops
  from PIE to Latin 277–283
Street Latin 231
strength hierarchy 294
subjunctive
  Latin 402
  PIE 401
subordination in PIE 91
suffix *-*eh*$_1$- in PIE 371
suffix *-*eie-/-ie-/-io-* in PIE 371
suffix *-*h*$_1$*s*- in PIE 372
suffix *-*io-* 305
suffix *-*skelo-* in PIE 371
suffix *-*uo-* 306
suffixed derived nominals 301–309
Sumerian 17, 29
superlative degree (adjectives) 350
supine 409
Swedish 34
synchronic variation (see uniformity of protolanguages) 19
syncope of short vowels in medial syllables, Latin 255
syntactic borrowings from Greek into Latin 191–194
syntactic features in Petronius 234
syntactic features in Plautus 229
syntax 77
syntax in PIE 80

Tabula Bantina (see Oscan) 28
Taurini 114
"Teeter's Law" 48, 80
tense
  early PIE to classical PIE 365
tense/aspect
  PIE 72, 73, 365
  PIE to Latin 366
tenses, Latin 396–400
terramara (see palafitte) 99, 109
terramaricoli (see palafitte) 99
Thebes 26
thematic/athematic stems in PIE 368
Theran 27
Thessalian 27
Thessalo-Lesbian 27
third and fourth conjugation -*ĭo*- class, Latin 375
third conjugation -*e/o*- class, Latin 375
third conjugation, Latin 374–375
third declension 321–329
Thracian 38
three-syllable accent rule, Latin 256, 264
Thucydides 26
Tiryns 26
Tocharian 30
Tocharian A (East Tocharian, Turfan) 30
Tocharian B (West Tocharian, Kuchean) 30
Tosk 36
transitive/intransitive in PIE 74
Trojans as early Etruscans 111
Tsakonian 28
tū, declension 339
typology 4, 48, 80

Ukrainian (Little Russian) 34
Umbrian, Iguvine Tables 136–140
"Umbrianic" languages 169
Umbrians 28, 115
undeclined forms 358–361
uniformity of protolanguages 18
Upper Sorbian 34
Uralic 17
Uralic-Yukaghir 17
Urdu 24
u-stem, fourth declension 329–333

Varro, excerpts 221–222
Vedic 24
velars and palatals in PIE 58
Veneti 28, 114
Venetic 36
Venetic inscriptions 158–160
Venostes 114
verb
  from PIE to Latin 366
  PIE 361–372
verb morphology in PIE 71
verbal aspect in PIE (see tense/aspect) 72
verbal categories in PIE (see simplicity and complexity) 72

Verner's Law (see accent in PIE) 4, 65
Vestini 115
Vestinian 29
Vestinian inscription 140
Villanovan 102–103
Villanovans 114
Vindolanda 240
vṛddhi 49, 50
voc. sg.
  o-stem 313
voc. sg. (non-neut.)
  3rd decl. cons. stem 324
  u-stem 330
vocalic changes in Latin according to syllable location 251
vocative in PIE 84
voice
  early PIE to classical PIE 365
  PIE to Latin 366
voice in PIE 72, 364
voiced aspirated stops
  from PIE to Latin 280–283
voiced unaspirated stops
  from PIE to Latin 278–280
voiceless unaspirated stops
  from PIE to Latin 277–278
Volsci 115
Volscian 29
Volscian inscription 140–142
vŏs, declension 340–341
vowel harmonizing, Latin 254
vowel weakening, Latin 253
vowels
  from PIE to Latin 242–248
  PIE 242
vowels, Latin 250
Vulgar Latin 227

Wackernagel's Law 80
"wave of advance" 43
Welsh 31
West Argolic 27
West Germanic 33
West Locrian 27
word order in PIE (see typology) 80

Xerxes 25
Xinjiang mummies 44

Yaghnobi 25

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