



## Vowel Length from Latin to Romance

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*Vowel Length from Latin to Romance*  
Michele Loporcaro

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MICHELE LOPORCARO

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*For Giovanna and Laura: they know why*



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# Preface

This book provides a global reappraisal of a central topic of Romance historical linguistics: the development of vowel length from Latin to the Romance languages and dialects. Vowel length was contrastive in Latin, and no daughter language has inherited that contrast, though several have established novel vowel length distinctions at different stages of their history and in different ways, which will be addressed in what follows. While all those developments deserve attention per se, the main question the present monograph focuses on is whether a diachronic link, via a series of subsequent changes, can be established between at least some of the length contrasts documented throughout Romance, today or in the past, and Latin distinctive vowel quantity.

The answer will be positive: it will be argued that the most satisfactory reconstruction of the rise of contrastive vowel length in a substantial number of the Romance systems displaying that property (nowadays or in the past), scattered over the central-northern part of the Romance-speaking territory from the Apennines to the North Sea, is one in which this development is analysed as a diachronic successor of a Proto-Romance open syllable lengthening process, whose rise can be in turn held responsible for the loss of the contrastive vowel length that used to characterize Classical Latin.

The topic is a much-debated and highly controversial one, in all its facets: to cite just one aspect, the demise of Latin contrastive vowel quantity has been explained variously, and dated in a widely diverging way, ranging from the 3rd century BC to the 4th AD. The topic also has wide empirical implications, since discussion of vowel quantity entails addressing the relationship with (the historical development of) stress assignment and syllable structure, consonant gemination (word-internal as well as at word boundary, through *raddoppiamento fonosintattico*) and degemination, as well as with apocope, diphthongization, etc. This list includes some of the major isoglosses distinguishing subgroups within the Romance language family: thus, dealing with this topic boils down to coming close to providing a comprehensive account of the diachronic development of Latin–Romance phonology, at the prosody-to-segments interface. The implications for theoretical linguistics (in particular, for the theory of sound change) are also significant: discussion of the most effective explanation of the empirical phenomena at hand will require addressing the division of labour between synchronic and diachronic linguistics, in terms of methods and explanatory scope, as well as, even more broadly, the issue of the interplay between form and substance in linguistic sound systems, or the phonetics/phonology interplay. A number of more specific issues could be mentioned here: for

instance, the development of vowel length contrasts in Romance has often been considered in the context of cross-linguistic discussions of the nature of compensatory lengthening and its impact on a language's phonological system or, more broadly, when debating whether there are universal constraints on the paths by which languages may acquire vowel length contrasts.

On all the issues covered in the following pages, an extensive literature is already available. Yet the present study can boast novelty in that it is the first to reconsider the development of vowel length (VL) from Latin to Romance drawing systematically on evidence from fields as diverse as, say, the study of Latin inscriptions from Rome and the rest of the Western Roman Empire, on the one hand, and on the other, first-hand experimental phonetic analysis of data from modern Romance dialects, collected in some remote villages on the Alps or the Apennines in the early 21st century. The possibility of relying on such multifarious evidence is the hallmark of Romance historical linguistics, since we do not have access to such a varied database for many other language families: the Latin–Romance continuum, with its two and a half millennia of documented history and with the great amount of scholarly work that has been carried out on it from many different perspectives, still presents the historical linguist not only with unsolved problems, which is obvious, but also, less trivially, with the challenging opportunity to apply to these problems the method of historical linguistics in its fullest form. This wealth is also a considerable burden, though, and puts severe constraints on the analyst, since any respectable reconstruction in this field must prove capable of reconciling the results gained from those different sources of evidence. This is the fundamental challenge this monograph tries to face in reconstructing the evolution of VL from Latin to Romance.

The structure of the book will be outlined at the end of the introductory chapter. Let me add here some preliminary logistical notes. Cross-references throughout the book point by default to numbered examples or footnotes within the same chapter, unless another chapter/section number is specified. Linguistic data are provided in IPA transcription, including data presented by the original authors using different conventions. Whenever unreferenced, dialect data stem from my own fieldnotes. For the citation of Latin authors and texts, I follow the *Oxford Latin Dictionary (OLD)* conventions; translations stem from the Loeb classical collection, unless specified otherwise. In quoting Latin linguistic materials, different conventions are used, depending on whether these are cited per se or rather as a diachronic source of their Romance descendants. In the latter case, following traditional practice in Romance linguistics, Latin etyma are given in small caps and (for nouns and adjectives) in the accusative form (e.g. VILLAM), which became generalized in the Romance languages except Romanian. By contrast, Latin forms, phrases, and/or sentences are given in italics whenever they are considered per se rather than from a Romance angle (e.g. *uillam*), and are given in italicized small caps when stemming from inscriptions (e.g. *OPPIDUM*). (As seen in the above examples, vowel quantity

is not normally marked for Latin etyma, except when directly relevant to the argument—for example for metrical structure or the vowel qualities of Romance outcomes.) In glossing, Leipzig-style abbreviations are used, with some adjustments to avoid redundancy. Thus, for nouns and adjectives, grammatical feature values are omitted whenever the quoted form corresponds to the default: singular for nouns, masculine singular for adjectives (for Latin, the case value ‘nominative’ is also left out); for verb forms in the present indicative, only person is specified (e.g. Milanese *nas* ‘be born.3SG’); and whenever English translation is shorter than the grammatical gloss without being ambiguous, this is preferred.

As I take leave of the book, I must thank a number of persons and institutions for their help and support. Over the past few years, the following friends and colleagues took time to discuss with me several aspects of the present research, either in person or in print, and/or to point me to important references (or even to send them to me): my thanks go to Pier Marco Bertinetto, Giovanni Bonfadini, Kathleen Coleman, Tom Cravens, Stefania Ferrari, Jürg Fleischer, Marco Mancini, Stefania Maina, Peggy Renwick, Emanuele Saiu, Mary Stevens, Paul Videsott, and M. Teresa Vigolo: with respect to them, of course, usual disclaimers apply and the same goes for three anonymous OUP reviewers who provided constructive criticism on the project. With other friends and colleagues, discussion took the form of joint work on the topic, partly within the framework of a research project carried out at the University of Zürich (‘At the Source of Northern Italo-Romance: Quantity and Related Phenomena’, <http://www.research-projects.uzh.ch/p5703.htm>): Rachele Delucchi, Lorenzo Filipponio, Tania Paciaroni, Stephan Schmid. Last but not least, the book would not have been the same if Yves Charles Morin had not generously taken time to point to passages where the text could be improved and the discussion made more thorough. A further kind of scientific conversation I have to acknowledge here is that with students who wrote under my supervision in Zürich theses dealing with vowel length and related phenomena in Romance varieties: Carla Biasini, Camilla Bernardasci, Debora Nardini, Cristina Pifferi, and Steffi Gredig. Also, the audiences of the lectures I gave on the topic in Zürich, especially in the spring of 2010 and autumn of 2011, greatly helped me to fine-tune the presentation of the arguments.

As is common practice, the reference list that closes the book indicates the interlocutors in dialogue with whom this book has materialized: however, one name I would like to single out in this context, since my own ideas on the fate of vowel quantity in Late Latin could not possibly have taken their present form without the constant inspiration provided by the work of the late József Herman.

I am also indebted for feedback and comments to the audiences to whom I have had the opportunity to presenting parts of this research over the last few years, at the Scuola normale superiore in Pisa, the Universities of Graz, Roma Tre, Cluj-Napoca, Geneva, Naples Federico II, the Collegio Ghislieri in Pavia, and the Circolo filologico linguistico padovano. Invited talks at the 17th International Conference on Historical

Linguistics (2005) and the Philological Society in London (2012) were important landmarks in the ripening process of this book, for which I warmly thank the organizers.

To the editors of the Cambridge History of the Romance Languages, Martin Maiden, Adam Ledgeway, and J. C. Smith, I owe an important impulse to start thinking seriously and systematically about several of the topics discussed in this monograph; but without the decisive intervention of John Davey, the most congenial linguistics editor one could dream of, this thinking would hardly have materialized into a book. To the rest of the OUP team who dealt with the manuscript at different stages, as well as to Mitch Cohen, I am indebted for the constructive joint work on improving it.

The Faculty of Philosophy of the University of Zürich has to be mentioned in the acknowledgements, not only for providing me with the best imaginable workplace on the planet for a historical Romance linguist (with the Jakob Jud Library and a series of other facilities) but also, more specifically, for partly funding the fieldwork sessions in Val Bregaglia (2002), on the Emilian Apennine (2004, 2008), and in Val Marebbe and Val Müstair (2011), from which I have drawn some of the data discussed in Chapters 3 and 5. Chapter 5 especially, where the areal distribution of the different VL systems investigated here is focused on as providing crucial clues for diachronic reconstruction, has benefited from discussion with colleagues within the framework of—and is intended as a contribution to—the University Research Priority Program of the University of Zürich on ‘Language and Space’. Finally, two more Zürich colleagues should be gratefully mentioned: Curdin Derungs, who prepared the maps, and Vincenzo Faraoni, who assisted me with the preparation of the indexes (with the cooperation of Massimo Bellina, Stefano Negrinelli, M. Chiara Paravicini Bagliani, and Luca Willi).

Thanks are due, moreover, to Magdalen College Oxford, which granted me a visiting fellowship during Michaelmas term 2012, and hosted me in a most inspiring setting for the final writing-up, at Holywell Ford Mill, in the middle of the unforgettable deer park and yet just ten minutes’ walk away from the superb Oxonian libraries: this book would not have taken its present shape without the days and evenings spent in the Bodleian, the Taylorian, and the Sackler.

It would take a very long time for me to thank by name all the persons—rather dully called, in our jargon, ‘informants’—who have helped me collect the first-hand linguistic data discussed throughout the book, sharing with me their insights on their native languages/dialects. I would like however to mention at least some of them explicitly, as a sign of gratitude for the hours spent working together: Luciano Persico (Crotta d’Adda, Cremona), Benito Biagi, Gualtiero Bonucchi, Sergio Polmonari, Maurizio Poli (Lizzano in Belvedere), Ferdinando Lunardi, Lina Manattini, Emiliano Mazzoni (Piandelagotti), Giorgio M. Daledo (Travacò Siccomario), Marco Morandotti (Lungavilla), Claudio Cervati (Sairano), and Danko, Liliana, and Reto Giovanoli, Fiorella Willy, Anna Nunzi (Soglio).

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## *List of abbreviations and notational conventions\**

ABL	ablative
ACC	accusative
Arab.	Arabic
BS	Bresciano
Cat.	Catalan
CL	Classical Latin
CoL	compensatory lengthening
CVL	contrastive vowel length
DAT	dative
DO	direct object
Fr.	French
GEN	genitive
Germ.	Germanic
Gk.	Greek
Goth.	Gothic
GRom	Gallo-Romance
IE	Indo-European
IMPF	imperfect (tense)
INT	interrogative
IO	indirect object
It.	Italian
Lat.	Latin
lit.	literally
Log.	Logudorese (Sardinian)
μ	mora
ME	Middle English
MHG	Modern High German
ModE	Modern English

\* Grammatical abbreviations are listed here only when they are not included in the Leipzig Glossing Rules (<http://www.eva.mpg.de/lingua/resources/glossing-rules.php>). Bibliographical abbreviations, omitted here, are included in the final reference list.

NHG	New High German
NItRom	Northern Italo-Romance
NRom	Northern Romance
OCS	Old Church Slavonic
OE	Old English
OFr.	Old French
OGen.	Old Genoese
OHG	Old High German
OIt.	Old Italian
ONorse	Old Norse
OSL	open syllable lengthening
OSp.	Old Spanish
OT	Optimality Theory
Pg.	Portuguese
PIE	Proto-Indo-European
PRom	Proto-Romance
pt	point
PU	phonological utterance
PW	phonological word
RF	<i>raddoppiamento fonosintattico</i>
Ro.	Romanian
RRom	Rhaeto-Romance
σ	syllable
Sard.	Sardinian
sc.	<i>scilicet</i> [to rectify mistakes within quotations]
SI	Standard Italian
Sic.	Sicilian
Skr.	Sanskrit
Sp.	Spanish
SRC	Strong Rhyme Constraint
VL	vowel length
WFC	Well-Formedness Condition
WGerm.	Western German
WRom.	Western Romance
→	becomes (by synchronic derivation)

←	derives from (synchronically)
>	becomes (diachronically)
<	derives from (diachronically)
*	reconstructed form
**	ungrammatical form/phrase
.	syllable boundary

# *Latin authors and works cited in abbreviation*

<i>Ann.</i>	Quintus Ennius, <i>Annales</i>
<i>As.</i>	Titus Maccius Plautus, <i>Asinaria</i>
<i>Aul.</i>	Titus Maccius Plautus, <i>Aulularia</i>
CAECIL.	Caecilius Statius
CAES.	Gaius Iulius Caesar
CIC.	Marcus Tullius Cicero
<i>Com.</i>	Caecilius Statius, <i>Comoediae</i>
<i>De doct.</i>	
<i>christ.</i>	Aurelius Augustinus Hipponensis, <i>de doctrina christiana</i>
<i>de Orat.</i>	Marcus Tullius Cicero, <i>de Oratore</i>
<i>Ecl.</i>	Publius Vergilius Maro, <i>Eclogae</i>
ENN.	Quintus Ennius
<i>Explanat. in</i>	
<i>Donatum</i>	Sergius, <i>Explanationes in Donatum</i>
<i>Fest.</i>	Paulus Diaconus, <i>Epitome Festi</i>
<i>Gal.</i>	Gaius Iulius Caesar, <i>de Bello Gallico</i>
<i>Gramm</i>	Gaius Suetonius Tranquillus, <i>De grammaticis et rethoribus</i>
<i>in Donat.</i>	Servius Marius Honoratus, <i>Commentarius in Donati artem</i>
<i>Inst. Orat.</i>	Marcus Fabius Quintilianus, <i>Institutio Oratoria</i>
<i>Mil.</i>	Titus Maccius Plautus, <i>Miles Gloriosus</i>
<i>Orator</i>	Marcus Tullius Cicero, <i>Orator ad M. Brutum</i>
PAUL.	Paulus Diaconus
<i>Per.</i>	Titus Maccius Plautus, <i>Persa</i>
PL.	Titus Maccius Plautus
QUINT.	Marcus Fabius Quintilianus
<i>Rud.</i>	Titus Maccius Plautus, <i>Rudens</i>
SUET.	Gaius Suetonius Tranquillus
TERENT. SCAUR.	Quintus Terentius Scaurus
VERG.	Publius Vergilius Maro



# Introduction

Contrastive vowel length (CVL) is a property of the phonology of many languages of the world. In the UPSID sample (UCLA Phonological Segment Inventory Database), 69 languages (or 19.6%) are reported to possess vowel length (VL) contrasts between long and short tautosyllabic vowels (Maddieson 1984: 129), though the figure is surely underestimated, since the criterion adopted there excludes languages in which ‘all the vowel qualities . . . participate in a length contrast’ without any concomitant phonetic difference (Maddieson 1984: 128). Not only is this criterion too restrictive, it is also hard to operationalize consistently. Under such a criterion, given the discussion below in § 2.2.2, Classical Latin would be either counted among the languages displaying CVL, if the assumptions mirrored in (11) below are correct, or excluded from that number, if e.g. Weiss (2009: 64), quoted in that section, is right in claiming that long vs short vowels did not differ at all in quality throughout the history of Classical Latin. This is a fairly general problem, as a recent cross-linguistic overview of VL puts it (Odden 2011b: 465):

Establishing vowel length in a language is not always straightforward. English is both said to have and not have vowel length, so that “peat” may be analyzed as having a long vowel (Halle 1977) as contrasted to “pit”, thus [i:] versus [i]; or, the distinction can be treated as a tense/lax opposition (Chomsky and Halle 1968), thus [i] versus [ɪ].

Such difficulties explain why estimates of the proportion of the world’s languages displaying CVL, like Maddieson’s (1984: 129), are rare in the literature on linguistic typology.

## 1.1 The starting point: vowel length in Classical Latin

Most languages in which VL is contrastive have been reported as distinguishing two degrees of length (long vs short)—although systems with three length degrees also occur, if more rarely.<sup>1</sup> The phonological system of Classical Latin is usually

<sup>1</sup> Cf. Lehiste (1970: 45–9) for a classical overview, and Prehn (2012: 222–54) for a recent and more extensive survey of the languages which have been reported to display three-way VL contrasts, including e.g. Estonian, some Germanic dialects (North Low Saxon, Low and Central Franconian), several Amerindian languages (e.g. Hopi, Seneca, Seri, Wichita) etc. Cf. also Blevins (2004: 201–2), who reduces heavily the

described as possessing a binary VL contrast, inherited from (late) Proto-Indo-European, as evidenced by minimal pairs such as the following:

- (1) *pīla* ‘ball’ ≠ *pīla* ‘pile, (low) pillar’; *pīlus* ‘hair’ ≠ *pīlus* ‘a unit of infantry’  
*lēuis* ‘light’ ≠ *lēuis* ‘polished’; *ēdere* ‘to eat’ ≠ *ēdere* ‘to edit’  
*mālus* ‘bad’ ≠ *mālus* ‘apple tree’; *ānus* ‘old woman’ ≠ *ānus* ‘ring, anus’;  
*mōrātus* ‘remained’ ≠ *mōrātus* ‘civilized’; *fōdit* ‘excavate.PRS.3SG’ ≠ *fōdit* PERF.3SG  
*pūtet* ‘prune.PRS.SBJV.3SG’ ≠ *pūtet* ‘stink.3SG’; *lūteus* ‘made of mud’ ≠ *lūteus* ‘yellow’

Though with certain distributional restrictions, to be addressed in §1.3, minimal pairs occur for all the five vowel phonemes of Classical Latin (henceforth CL), in both stressed and unstressed, open and closed, final and non-final syllables:

- (2) *uīll(a)* ‘villa’ ≠ *uīll(um)* ‘(animal) hair’; *uīncīs* ‘win.2SG’ ≠ *uīncīs* ‘fasten.2SG’  
*inlĕx* ‘one who entices/allures’ (← *illicito*)<sup>2</sup> ≠ *inlĕx* ‘lawless’  
*bonā* ‘good.NOM.FSG’ ≠ *bonā* ‘good.ABL.FSG’  
*ōs* ‘bone’ ≠ *ōs* ‘mouth’  
*lūstrum* ‘morass’ ≠ *lūstrum* ‘quinquennial purification ceremony’<sup>3</sup>

Consonant gemination, not inherited from PIE, was contrastive too (e.g. *erō* ‘be. FUT.1SG’ vs *errō* ‘wander about.1SG’), although it does not seem to have developed a high functional load by CL times. There are several reasons for this. As shown by Giannini and Marotta’s (1989: 231–2) quantitative study, gemination was subject to several constraints throughout: for instance, in about 90% of the lexemes containing geminates, these immediately follow the stressed vowel, and in about 80% of the lexemes they are between the word-initial and the second syllable. Also, in many lexemes the geminate alternates with a singleton consonant (e.g. *flam(m)a* ‘flame’, *fel(l)o* ‘suck’).<sup>4</sup>

number of genuine three-way contrasts to ‘three to five’ languages, since, in her view, for other languages which have been claimed to possess such a contrast, VL is not the only feature involved: ‘For example, in Yurok and KiKamba there is evidence that the extra-long vowels constitute *disyllabic* sequences, in contrast to short and long vowels, which are monosyllabic’ (Blevins 2004: 201, n. 6, emphasis original),

<sup>2</sup> *inlĕx* is documented in Archaic Latin (e.g. PL. *Per.* 408, CAECIL. *com.* 60). PAUL. *Fest.* 113m comments on the minimal pair *inlĕx* vs *inlĕx*.

<sup>3</sup> In spite of short *ū* in OLD 1052, the long vowel in *lūstrum* is guaranteed by PAUL. *Fest.* 120m (as well as by *-v-* on the *Monumentum Ancyranum*: see WH I 839), where the minimal pair is commented on as follows: ‘*lustra* significat lacunas lutosas [...] Et cum eiusdem vocabuli prima syllaba producitur, significat nunc tempus quinquennale, nunc populi lustrationem’ [*lustra* means muddy ponds... And when the first syllable of that same word is lengthened, it means either a period of five years or a people’s ritual cleansing]. For discussion of the diachronic source of length, see de Vaan (2008: 353–5), who prefers Serbat’s (1975: 312) \**luH-* ‘to set free’ (cf. *luō* ‘to expiate’) over traditional \*(*e/o*)*uk-s-tro-* ‘illumination’.

<sup>4</sup> Thus, pairs like, say, *puppī* ‘stern, poop.ABL.SG’ ≠ *pūpi* ‘child, boy.NOM.PL’ do not have the same value as those in (3), since the word for ‘boy/girl’ is attested in both versions: *pup(p)a* ‘girl’ (cf. Giannini and Marotta 1989: 182). Yet there are metalinguistic judgements by Latin grammarians attesting that in many lexemes, commutation of a geminate with a singleton consonant would result in an error: cf. e.g. CONSENTIUS, *GL* 5.392.8: ‘per detractionem fiunt barbarismi sic: litterae, ut siquis dicat uilam pro uillam, mile pro mille’ [‘barbarisms arise through subtraction, as if anyone were to say *uilam* instead of *uillam*’].

In some cases, the two variants developed into distinct lexemes, as happened to *sūc(c)us* ‘juice’, for which the form with singleton *-c-* is the older and better attested one, but both are guaranteed by their Romance outcomes in what have become separate lexemes (cf. It. *succo* ‘juice’ < *sūCCUM* vs *sugo* ‘sauce’ < *sūCUM*). The same can be repeated for several other lexemes, such as *cūpa/cūppa* ‘cask, tub’ (Fr. *cuve*, Sp. *cuba*, It. *cupola* ‘dome’ vs Fr. *coupe*, Sp. *copa*, It. *coppa* ‘cup’) or *cīto/cītto* ‘quickly’ (*cītto* in *CIL* VIII 11594, cf. OSp. *cedo* ‘quickly’ vs OIt. *chetto* ‘quickly, soon’, Log. Sard. [‘kit:ɔ] ‘early’), etc. Notwithstanding this variation, minimal pairs do occur (e.g. Weiss 2009: 66), though to gather a substantial number one has to sift the very periphery of the Latin lexicon (including loanwords, forms of sparing and/or dubious attestation, etc.):

- (3) *uaccās* ‘cow.ACC.PL’ ≠ *uacās* ‘be vacant.2SG’  
*agger* ‘earthwork’ ≠ *ager* ‘field’  
*currīs* ‘chariot.DAT/ABL.PL’ ≠ *cūrīs* ‘anxiety.DAT/ABL.PL’  
*ferum* ‘wild.ACC.M/NSG’ ≠ *ferrum* ‘iron’  
*polleam* ‘be strong.PRS.SBJV.1SG’ ≠ *pōleam* ‘dung of a foal.ACC.SG’ (< Gk. πῶλειος)  
*mannus* ‘pony’ (< Illyrian; cf. Albanian *mës/mas*, ThLL 8.319) ≠ *manus* ‘hand’

The two quantity contrasts were asymmetrical in several respects. First, they had an asymmetric destiny: contrary to CVL, consonant gemination was progressively to gain significance in the phonological system and was massively fed by sound change in Late Latin, before being eventually lost in most Romance varieties during the Middle Ages (see §3.3). Also the signalling of the two contrasts in Latin orthography was unequal, so that while the rendering of consonant gemination eventually became established, the notation of VL never did, since ‘L’alphabet latin a péché par insuffisance dès le début pour la notation des voyelles longues’ [‘the Latin alphabet has sinned by insufficiency from the outset concerning the notation of long vowels’] (Flobert 1990: 101).<sup>5</sup> Indeed, a number of graphical devices were employed, especially during the late Republican period (from the mid-2nd century BC on), to notate vowel quantity, including the repetition of the vowel symbol for /a: e: u:/ (e.g. *AARA* ‘altar’,

<sup>5</sup> On this, as well as other relevant aspects of Latin orthography, see Leumann (1977: 3–15), Wachter (1987: 248–9, 447, n. 1011), Meiser (2010: 49), Sommer and Pfister (1977: 28–33). For geminate consonants, reduplication of the letter appears since the late 3rd c. BC, perhaps after Oscan and Greek models (see Sommer and Pfister 1977: 32: e.g. *APPIOS CIL* I<sup>2</sup> 17, 212 BC; *HINNAD* ‘Enna.ABL’ *CIL* I<sup>2</sup> 608 a. 211 BC; *TVRRI* ‘tower.ABL’, *ESSENT* ‘be.IMPF.SBJV.3PL’, *OPPIDVM* ‘town’, *VELLET* ‘want.IMPF.SBJV.3SG’ in *CIL* I<sup>2</sup> 614, from 189 BC). Omissions remained frequent during the 2nd century though: e.g. *POSEDISENT* ‘possess.PPF.SBJV.3PL’, *IOVSIT* ‘order.PRT.IND.3SG’, from the same inscription, or *ESENT* ‘be.IMPF.SBJV.3PL’, *TABELAI* ‘table.NOM.PL’, in the *Senatus Consultum de Bacchanalibus*, *CIL* I<sup>2</sup> 581, a. 186 BC, a text that, ‘mit seiner rückständigen Amtsortographie’ [‘with its antiquated administrative orthography’] (Leumann 1977: 14), displays no gemination at all. At a lower sociolinguistic level, popular writings keep omitting geminates throughout the history of Rome: cf. e.g. Fanciullo (1997: 188) on Pompeian graffiti, or Clackson and Horrocks (2007: 237) on the receipt written on a wax tablet by the grain merchant Gaius Nouius Eunus in 39 AD (ed. Camodeca, 1999: no. 68), containing *mile* for *mille* ‘thousand’, *faris* for *farris* ‘emmer (wheat).GEN’, etc.

LEEGE ‘law.ABL’ *CIL* I<sup>2</sup> 1439),<sup>6</sup> a specific longer shape for the /i:/ vowel (*I longa*, occurring in inscriptions from about 100 BC—e.g. *FELICI* ‘happy.DAT’ *vICVS* ‘village’ in *CIL* I<sup>2</sup> 721—but already referred to about one century earlier by Plautus: *Pl. Aul.* 77, cf. Leumann 1977: 13), or the redeployment of archaic graphic diphthongs, after their monophthongization, to notate long vowels of different origins, like in *COVRA* [*verunt*] ‘let.PRF.IND.3PL’ (Wachter 1987: 426), *VEIVAM* ‘alive.ACC.FSG’ *CIL* I<sup>2</sup> 1837, *Tarentinus* ‘Tarantine’ *CIL* I<sup>2</sup> 1458).<sup>7</sup> The *geminatio uocalium* and the use of etymological diphthongs were ousted, in Caesar’s age, by a superposed diacritic (*apex*): e.g. *NÁSONI* ‘Naso.DAT’ *CIL* I<sup>2</sup> 743, *PÁPIVS*, *ARBITRÁTV PÓLLIÓNIS* ‘by Pollio’s decision’ *CIL* I<sup>2</sup> 1578, whose earliest dated example (*MVRUM* ‘wall.ACC’ *CIL* I<sup>2</sup> 679) dates back to 104 BC (cf. Degraasi 1963: 144). The diacritic devices *I longa* and (for the remaining vowels) *apex* remained in use until the late 3rd century AD (cf. *CIL* V 857, Flobert 1990: 102).<sup>8</sup> None of those notational conventions, though, became established nor was ever prescribed systematically by grammarians.<sup>9</sup>

While the said orthographic attempts do provide direct evidence for the Latin VL contrast, supporting evidence from other sources is at hand too. These include Latin prosody and metrics, evidence from sound change throughout the history of Latin (Archaic, Classical, and Late), metalinguistic testimonies by Latin authors, and cross-linguistic evidence consisting in turn in evidence from comparison, both within Italic and with other branches of the Indo-European language family, as well as evidence from borrowing into as well as from other languages.

Let us start from the evidence involving other languages. For instance, since we know that Attic Greek turned an original long /a:/ into /ɛ:/, correspondences like Attic μήτηρ : Lat. *mater* ‘mother’ vs ἄγω : *ago* ‘to drive’ are evidence for a different quantity of the stressed vowels of *māter* (< PIE \**máh<sub>2</sub>ter*) vs *āgo* (< PIE \**h<sub>2</sub>ǵ-é/o-*). The same can be repeated for comparison with, say, Germanic, where long /a:/ changed to /o:/ while short /a/ retained its quality (e.g. ONorse *mōðir* ‘mother’ vs *aka*

<sup>6</sup> The tragediographer Accius (c.170–c.90 BC), though not the inventor of the device (Flobert 1990: 101, n. 1), was remembered for recommending ‘geminatis vocalibus scribi natura longas syllabas’ [‘that long vowels be written with double letters’] (so Terentius Scaurus, writing during Hadrian’s reign in the 2nd c. AD, *GL* 7.18.12–13; cf. also QUINT. 1.7.14 and MARIUS VICTORINUS, *GL* 6.8.11, who mention Accius too). Doubling of the vocalic grapheme was mostly confined to the stressed syllable (Wachter 1987: 244), though exceptions do occur: e.g. *PEQVLATVV* ‘peculation.ABL.SG’ in *CIL* I<sup>2</sup> 587 (from Rome), *AASTVTIIS* ‘ruse.ABL.PL’ in *CIL* I<sup>2</sup> 364, from Falerii, whose date is controversial (between the late 3rd and mid-2nd c. BC).

<sup>7</sup> The option to use <ei> and <ou> for /i:/ and /u:/ became available after the corresponding sound changes had applied, viz. [e<sub>i</sub>] > [i:] (early 3rd century BC), and [ou] > [u:] (late 3rd c. BC; cf. Meiser 2010: 57–60).

<sup>8</sup> TERENTIUS SCAURUS *GL* 7.33.7 prescribes complementarity of the two devices (‘super *i* tamen litteram apex non ponitur’ [‘you should not put an apex on the letter *i*’]). However, Christiansen (1889: 12–17) shows that, though less frequently than on other vowels, apices were used on <i>s as well (e.g. *CIL* XII 1357, 1st c. AD, *FILÍO*, *MÍLITVM*, *QVÍ* etc.), and occasionally even on *I longae*: *SABÍNO* *CIL* VI 3940, *SVÍ* VI 7527, etc.

<sup>9</sup> The use of apex, for instance, is recommended (by QUINT. 1.7.2–3, TERENT. SCAUR. *GL* 7.33.5–7) only to discriminate between words forming minimal pairs such as those in (1), explicitly discouraging as ‘very silly’ (*ineptissimum*, Quintilian says) across-the-board use.

‘to drive’), or Slavic, where conversely only short /a/ was velarized (e.g. OCS *mati* ‘mother’ vs *ostrŭ* ‘sharp’, cf. Lat. *acer* < PIE \**h<sub>2</sub>akro-*). Within Italic, evidence from Oscan is of special relevance since Oscan extant writings, in particular those in the Central Oscan epichoric alphabet) display notation of vowel length in word-initial root syllables—which also happen to be stressed—much more systematically and at a much earlier date than the corresponding, only desultory, reduplication of vowel graphemes in Latin: attestations of *geminatio uocalium* in Oscan start around the middle of the 3rd century BC, i.e. more than one century before their earliest Latin counterparts (cf. Buck 1928: 25–6; Lejeune 1975: 240–45).<sup>10</sup> Thus, Oscan *maatréis* ‘mother.GEN.SG’, *faamat* ‘have at one’s orders.3SG’ vs *actud* ‘do.FUT.IMP.3SG’, *akrid* ‘sharply’ (ABL.SG) directly confirm the quantities of the corresponding vowels in the Latin counterparts *mātris*, *fāma* ‘rumour’, *āgīto*, and *ācrī* ‘sharp.ABL.SG’ (cf. de Vaan 2008: 22, 30, 367; Meiser 2010: 55–6).

In addition to the comparative evidence, one can also adduce proofs attesting to the Latin VL contrast from borrowing into other IE languages which are known to possess or to have possessed such a contrast: thus, the OHG forms for ‘cat’ and ‘street’ (respectively *kazza* vs *strāza* > MHG *Katze* vs *Straße*) witness to the Latin contrast between the stressed vowels of *cattus* and (*uia*) *strāta* (cf. Sihler 1995: 73). Similarly, borrowings into Celtic—in which Latin short vs long vowels are systematically kept distinct (cf. Jackson 1994: 84, 88, and §2.5 below)—attest to the shortness of the *ũ* in the final syllable of e.g. *coccum* ‘scarlet (colour)’, *scamnum* ‘stool’, as shown by Campanile (1973: 403) because a long *ũ*—which should have arisen in Lüdtke’s (1965: 487) opinion as a consequence of final *m*-deletion—would have triggered metaphony in e.g. Welsh *coch* ‘red (colour)’, *ysgafn* ‘bed’, whose stressed vowel did not, however, undergo metaphony (otherwise they would be \*\**cych*, \*\**ysgyfn*).

Evidence from sound change also points to the existence of CVL, whenever not recognizing the contrast would lead to the impossibility of describing economically either the change itself or its conditioning environment. Similar cases are legion throughout the (pre)history of Latin. Thus, a word-final /d/ was deleted by the mid-3rd century BC (Meiser 2010: 100) after long vowels only (e.g. *mēd* > *mē* ‘me’ vs *sēd* ‘but’, *pōplicōd* > *pūblicō* ‘public.ABL.SG’ vs *apūd* ‘at’); other changes which applied in Archaic Latin, such as -ss-degeminatio, iambic shortening (§1.2) or the so-called ‘Latin ablaut’ (e.g. *fācio* ‘do.1SG’ vs *perfēctum* ‘accomplished’ vs *perfīcio* ‘accomplish.1SG’) must be stated with reference to VL;<sup>11</sup> and most of the Romance

<sup>10</sup> Indeed, the *geminatio uocalium* has been argued by Lazzeroni (1956: 292) not to have ever been a feature of Latin orthography *stricto sensu*, but rather to be ‘tipica del latino scritto dagli italici’ [‘typical of the Latin written by Italics’; emphasis original], since it is virtually confined to Latin inscriptions which either stem from Italic territory or otherwise involve people of Italic origin.

<sup>11</sup> The term ‘ablaut’, though traditional (see below), is actually a misnomer, since the change involved was sensitive to the phonological context. In fact, by far the simplest generalization accounting for the application of change in the root vowel in, say, *occīdo* ‘fall.1SG’ (compare the simplex *cādo* ‘fall.1SG’), vs its

developments too—on which see below, Chapter 2, (15), (23)–(25)—would be obscured entirely if one could not refer to CVL in their statement (in the wake of e.g. Foerster 1878), to discriminate between the outcome of, say, long vs short /i/ or /u/ in Italian, such as in *mille* ‘thousand’ < MĪLLE vs *secco* ‘dry’ < SĪCCUM, *nulla* ‘nothing’ < NŪLLAM vs *rotto* ‘broken’ < RŪPTUM.

The same holds true of the synchronic characterization of Classical Latin stress, which implies reference to VL as one determinant of syllable weight:

(4) Classical Latin stress:

In words of more than two syllables, stress falls on a heavy (i.e. bimoraic) penult, otherwise on the antepenultimate.

This stress rule is believed to have come into being early in the 4th century BC, replacing an older initial stress which Latin inherited from Proto-Italic and thus used to share with the neighbouring cognate languages such as Oscan-Umbrian, but also with unrelated Etruscan.<sup>12</sup> During that previous stage (first reconstructed by Dietrich 1852: 546), vowel reduction resulted in alternations—improperly labelled sometimes, especially in the French scholarly tradition, as ‘(Latin) ablaut’ (*apophonie*, cf. e.g. Kerlouégan 1978: 35): *amicus* ‘friend’/*inimicus* ‘enemy’, *arma* ‘weapon’/*inermis* ‘unarmed’, *dedi* ‘give.PRT.ISG’/*reddidi* ‘give back.PRT.ISG’—whose outcomes survived into the modern Romance languages: e.g. Fr. *ami* ‘friend’ < ĀMĪCUM vs *ennemi* ‘enemy’ < INĪMĪCUM < \*ĪNĀMĪCUM, with /a/ > /i/ in an unstressed open syllable. The change testifies to an original VL contrast, since only short, and not long, unstressed word-internal vowels underwent reduction.

The reality of the rule in (4) for CL is attested by the persistence of stress position into the daughter languages, in spite of the fact that the stress rule has been radically modified (or even eliminated altogether, as in French): in, say, *CANTĀTUM* ‘sung.ACC.SG’, stress fell on the long /a:/ in the penult, and it is the continuant of that vowel that still carries stress in Sp./Pg. *cantado*, Fr. *chanté*, It. *cantato*, Ro. *cântat*.<sup>13</sup> Like

non-application in, say, *occāsus* ‘sunset’, is that the change targeted short, not long, vowels which had come to follow stress as this became word-initial in Proto-Italic (see n. 12).

<sup>12</sup> See e.g. Lepschy (1962: 216–22), Leumann (1977: 246–7), Morani (2000: 174–84). On the protosyllabic stress of Oscan, see e.g. Bottiglioni (1954: 24), Kuryłowicz (1958: 381); on the prehistory of Latin stress in the context of its neighbour languages, see e.g. Prosdocimi (1986), Weiss (2009: 109–10). This Proto-Italic first-syllable stress was an innovation with respect to the PIE stress system, in which stress was free to occur on any syllable of the word, as first demonstrated by Verner (1877: 97), though with a default tendency towards initial stress which emerged to determine main word stress in Proto-Italic (just as in Proto-Celtic and Proto-Germanic; see e.g. Kiparsky 1973: 819; Halle 1997: 299; Viti 2013).

<sup>13</sup> All this might seem obvious, but it actually is not, as the operation of rule (4) for Classical Latin has been doubted by some—most notably, Pulgram (1975: 91), who claims that a rule referring to VL such as (4) existed for ‘Written (Classical) Latin’ only, but not for the spoken language which had in his view no CVL as early as the 3rd century BC.

accent, Latin metrics (see e.g. Allen 1973; Boldrini 1992; Fortson 2011) is not describable without reference to VL.

Let us now move on to consider metalinguistic testimonies by Latin authors, who comment on vowel length, and occasionally on minimal pairs distinguished exclusively by that feature. Some such passages have already been mentioned (nn. 2 and 3); consider, in addition, the following:

- (5) a. *palus* aliud priore syllaba longa, aliud sequenti significat [*palus* means one thing if the first syllable is long and another if the second is long', i.e. *pālūs* 'post' vs *pālūs* 'swamp']. (QUINT. *Inst. orat.* 1.7.3)
- b. *alia* cum intellexerimus nomen esse, primam syllabam longam esse existimamus [...], cum uero pronomen est, breuis erit [*when we understand alia* as a noun (= 'garlic.PL'), we take the first syllable to be long, but when it is a pronoun (= 'other.NPL'), it (i.e. the first syllable) will be short'] (*De ultimis syllabis liber ad Caelestinum*, GL 4.260.10–13)

At a certain point in time, such comments were reiterated out of sheer tradition, after CVL had ceased to be part of the natively acquired linguistic competence. This might well have been the case for the (anonymous) treatise *De ultimis syllabis* (5b), dating probably to the 4th century AD (cf. Kaster 1988: 348–50; Stok 1997: 15–19) and transmitted under the name of one Probus, to be distinguished from M. Valerius Probus from Berytos (1st century AD, cf. Suet. *Gramm.* 24). Much scholarly effort was devoted to speculating on how and precisely when this change may have taken place, with proposed dates ranging from the 3rd century BC to the 4th–5th century AD, a point which is of course crucial for the (pre)history of the sound system of the Romance languages. As of now, suffice it to observe that during the Republican age and the early Imperial period (Quintilian, quoted in (5a), wrote in the second half of the 1st century AD), metalinguistic testimonies seem to indicate that the VL contrast was perceived by native speakers, independent of education level. This is emphasized by Cicero:

- (6) In uersu quidem theatra tota exclamant si fuit una syllaba aut breuior aut longior; nec uero multitudo pedes nouit nec ullos numeros tenet nec illud quod offendit aut cur aut in quo offendat intellegit; et tamen omnium longitudinum et breuitatum in sonis sicut acutarum grauiumque uocum iudicium ipsa natura in auribus nostris collocauit [*the whole audience will hoot at one false quantity. Not that the multitude knows anything of feet, or has any understanding of rhythm; and when displeased, they do not realize why or with what they are displeased. And yet nature herself has implanted in our ears the power of judging long and short sounds as well as high and low pitch in words*] (Cic. *Orator* 173)

This passage has been much discussed, not only for VL, but also in the context of determining the exact phonetic nature of Latin accent, a thorny issue we will not dwell on here.<sup>14</sup> The controversy on that point, however, was stirred by the circumstance that evidence from other sources does not seem to support the assumption of a pitch accent, whereas for VL this and similar metalinguistic comments unambiguously converge with the linguistic evidence.<sup>15</sup> Furthermore, in (6) the remark on illiterate audiences hooting concerns specifically VL, rather than pitch. A very similar wording is encountered in another passage by Cicero:

- (7) Quotus enim quisque est qui teneat artem numerorum ac modorum? At in his si paulum modo offensum est, ut aut contractione breuius fieret aut productione longius, theatra tota reclamant [‘For what proportion of people understands the science of rhythm and metre? Yet all the same if only a slight slip is made in these, making the line too short by a contraction or too long by dwelling on a vowel, the audience protests to a man’] (CIC. *de Orat.* 3.196).

In this case too, the passage is introduced with reference to the power of ‘nature’ (*magna quaedam est uis incredibilisque naturae* [‘nature has a vast and indeed incredible power’], CIC. *de Orat.* 3.195), and seems to indicate natively acquired knowledge of language, independent of literacy.

All the different sources of data briefly recapitulated up to now converge in pointing to CVL being a genuine part of the phonological system of CL. As we shall see, however, not even that much is uncontroversial, since several scholars have entertained a very early date for the demise of CVL in spoken Latin (see §2.2.2). Occasionally, furthermore, doubt has been cast on Latin CVL on speculative grounds, as is the case for Kaye (1989: 151), claiming that in Latin ‘length distinctions can be removed from considerations of phonemic status and assigned to syllable structure, where they belong’.

<sup>14</sup> Whether or not CL had a pitch accent, as opposed to stress accent in the archaic period, has been debated at length (cf. e.g. Lepschy 1962; Leumann 1977: 248–54 for a recapitulation of different opinions on the matter). Nowadays, the view seems to prevail that stress accent was there throughout and that descriptions in terms of *acutus/gravis* were due to ‘close imitation of Greek models’ (McCullough 2011: 90), whereby ‘the grammarians have slavishly misapplied the Greek system to the description of Latin’ (Allen 1973: 151). (Though one must mention that there are scholars who, still relatively recently, take these descriptions at face value, and claim that CL had a pitch accent (e.g. Bernardi Perini 1986: 13; Boldrini 1992: 17); this claim is often reiterated without discussion in handbooks of Romance linguistics, especially by French scholars: e.g. Joly 1995: 22.) Greek imitation possibly had an impact on literary performance, a cultural practice in which Greek-style pitch differences may have been superimposed on ordinary stress by cultivated people in reading verse aloud (Allen 1973: 151–69). That the description of Latin stress with Greek terms never corresponded to phonetic reality is shown, inter alia, by the shift in meaning seen in Pompeius (5th–6th century, *GL* 5.126.5–26), who uses *acutus* for ‘stressed (vowel) in a closed syllable’ (e.g. *arma* ‘weapon’), *circumflexus* for ‘stressed (vowel) in an open syllable’ (e.g. *mêta* ‘goal’), and *gravis* for ‘unstressed’.

<sup>15</sup> And indeed, there is a long tradition of taking this information at face value (e.g. Herman 1998: 9), even if scepticism has been expressed by some (e.g. Pulgram 1975: 226, n. 23).

This is the conclusion of Kaye's analysis of Latin VL, which requires the reader to share several assumptions about phonological representation within one specific theoretical framework, that of Government Phonology. In other words, it is a theory-internal conclusion, and I shall not take issue with this here. For anybody not sharing those assumptions there is no compelling reason to distrust what the Latin evidence itself shows, with minimal pairs like those in (1)–(2): long vs short vowels, namely, could occur in exactly the same environments (syllabic and otherwise, although with some restrictions, to be addressed in §1.2) and are therefore contrastive, as acknowledged by studies on Latin phonemics in the classical structuralist tradition (e.g. Kerlouégan 1978: 33). This observation provides the starting point for my discussion of the Latin–Romance transition and the further development of VL in the Romance languages, to be developed in what follows.

## 1.2 The long-term trend: Latin harbingers of the loss of CVL

Though, as we saw in §1.1, CVL was contrastive in Latin and hence in one sense independent of contextual factors such as stress and syllable structure, this observation must be hedged with qualifications since considerations of a quantitative nature allow one to realize that Latin phonology already contained the seeds of the Romance development. Firstly, it must be mentioned that during the (pre)history of Latin several shortening processes dramatically reduced the functional load of the VL contrast in unstressed, especially final, syllables. The list includes changes with a quite restricted structural scope (if with vast impact in terms of number of lexemes), such as the shortening of 1st class nominative and neuter nominative/accusative plural endings *-ā*, which stem from PIE *\*-ā* (< *-eh<sub>2</sub>*; cf. Leumann 1977: 110): e.g. *infera* 'inferior.NOM.FSG or NOM/ACC.NPL' instead of *\*inferā* < *\*nd<sup>h</sup>-erā*, cf. Skr. *ádharā*.<sup>16</sup>

The scope of iambic shortening (*correptio iambica*) was much wider. This process affected word-final originally long vowels after a light syllable in words like *bĕnĕ*, *mōdō*, *cāvĕ*, *pūtā*. It 'can hardly have been much earlier than 200 B.C.' according to Allen (1973: 182), as the *terminus post quem* for its dating is provided by deletion of *-d* after a long, but not after a short, vowel, which is still found in the conservative orthography of some inscriptions from the early 2nd century BC (*POPLICOD* 'public. ABL.SG' *CIL* I<sup>2</sup> 581, 186 BC), while its deletion is already attested in 189 BC (*IN TVRRI LASCVTANA* 'in the L. tower', EA *TEMPESTATE* 'in that moment' *CIL* I<sup>2</sup> 614, with *-d* >

<sup>16</sup> Though the FSG ending is customarily written as (reconstructed) *\*-ā*, the original quantity is still attested in Archaic Latin, e.g. in Pl. *As.* 762: *Ne epistula quidem ulla sit in aedibus* 'that there be no one single letter [scanned as *epistulā*] in the house' (cf. Wedding 1902: 2). The change observed in these inflections has been interpreted alternatively as a morphological substitution of the original vocative ending (PIE *\*-ā*) for the original nominative one (Meiser 2010: 77). This explanation has the drawback of leaving the shortening in the homophonous neuter endings unexplained, since the vocative can hardly be invoked there.

Ø in *\*turrīd*, *\*eād*) and must consequently have applied somewhat earlier.<sup>17</sup> Had *d*-deletion applied later than iambic shortening, it would have been bled by the latter, resulting in *\*\*bēnīd*, *\*\*mōdūd*, instead of attested *bēnē*, *mōdō*, from earlier (reconstructed) *\*dwēnēd*, *\*mōdōd* (Kuryłowicz 1958: 338–9; Allen 1973: 181–2).

Iambic shortening concerned wordforms from several grammatical categories, like verbs in the 1SG (e.g. *puto* ‘estimate’, *rogo* ‘ask’), or ablatives (see above), etc. In authors of the early Empire one finds short final *-o* extended analogically to non-iambic forms such as *Pōlli(ō)* VERG. *Ecl.* 3.84 (Leumann 1977: 110). For the 1SG verbal ending, short *-ō* was prescribed as standard for non-monosyllabic verbs by the 4th century AD (cf. CHARISIUS, *GL* 1.16.20, MARIUS VICTORINUS, *GL* 6.28.21; POMPEIUS, *GL* 5.232.21–37).

In Archaic Latin (about 200 BC) unstressed non-word-final vowels preceding a consonant other than *-s* also underwent shortening (except in monosyllables), which gave rise to a series of alternations within inflectional paradigms: e.g. 3SG *amāt*, *uidēt* (vs 2SG *amās*, *uidēs*), or nominative *animal*, *uictōr* vs the oblique cases (*animālis*, *uictōris* etc.). Long vowels before *-t* *-r* *-l* are still attested in early Latin poetry (e.g. *arāt* PL. *As.* 874, *morōr* PL. *Rud.* 1248, *pōnēbāt* ENN. *Ann.* 371), whereas before *-m* shortening applied in pre-literary times, although not reaching as far back as common Italic: cf. *quām* vs Oscan *PAAM* (Meiser 2010: 77).

Shortening of prevocalic long vowels also contributed a reduction in the number of long vowels occurring in unstressed syllables (in e.g. *fuēre* ‘be.PRT.3PL’ < *fū-*): it was completed in the pre-literary period for *ē* (*dēus* < *\*dēos*), whereas there is still some textual evidence from Archaic Latin for prevocalic *ī* and *ū* (*fūimus* ‘be.PRT.1PL’ in ENN. *Ann.* 377, *Dīāna* ENN. *Ann.* 62; cf. Meiser 2010: 76). The handful of exceptions which persisted into the Classical period was fed by borrowing: among Greek loanwords, even sparse minimal pairs occurred, such as *Cōus* ‘Cos (an island in the Dodecanese)’ vs *Cōus* ‘pertaining to Cos’ (Biville 1995: 21). By and large, however, it is true that in CL, as a product of the sound change just mentioned, the prevocalic position was, for both stressed and unstressed vowel, a neutralizing environment (cf. e.g. Kerlouégan 1978: 37).

All the cases of restrictions on the contrastiveness of VL considered so far involved shortening of unstressed vowels: a symmetrical eventuality has been entertained in some marginal cases, involving Greek again. Since words like *mōrum* ‘blackberry’ (Gk. μόρον), *rāpum* ‘turnip’ (Gk. ράπυς), *līnum* ‘flax plant’ (Gk. λίνον) display a stressed long vowel in Latin as opposed to a short one in Greek, some have hypothesized borrowing from Greek with lengthening of the short vowel under stress (see Biville 1995: 23), though the most common interpretation is that those words were borrowed independently into both Latin and Greek from some substrate

<sup>17</sup> An earlier date of iambic shortening (4th–3rd century BC) is given in Meiser (2010: 76).

language. Whatever the case here, these sparse putative exceptions do not impinge on the basic generalization: in most cases, limitations on contrastiveness came about via shortening, which normally targeted unstressed vowels, from the origins of Latin.

As a consequence of these changes, by the Classical period the VL contrast was largely limited to stressed syllables, with a skewing analogous to that observed for consonant gemination (see §1.1). Herman's (1968: 197, n. 5, 199) text counts show that the ratio of long to short vowels in Classical Latin was 1:3 under stress, while the text frequency of long vowels dropped to 1:4 in unstressed syllables. Thus, already by Classical Latin times VL had ceased to be (at least statistically) totally independent from stress.

This change is not surprising, neither in a general-typological perspective nor with specific reference to the language family Latin belongs to. Other Italic languages, in fact, followed a similar path. In Oscan, 'la prévalence de l'initiale [...] a eu pour conséquence... un amenuisement des différences de quantité dans les parties subséquentes du mot' ['the prevalence of the initial [syllable] had as a consequence a diminution of the quantity differences in the following parts of the word'] (Lejeune 1975: 245). Oscan and Umbrian probably preserved Proto-Italic initial stress 'jusqu'en pleine époque historique' ['well into the historical period'] (Kuryłowicz 1958: 381). Both Sabellian and Latin, consequently, shifted away, though at different paces, from the Late PIE free distribution of CVL, in the direction predicted by what has been claimed to be a cross-linguistically valid generalization: 'There are languages with long vowels and short vowels where all long vowels must be stressed, but there are no languages with long and short vowels where all short vowels must be stressed' (Blevins 2004: 9).

In addition to stress, the further contextual factor that played a role in the Late Latin merger of CVL was (as will be illustrated in Chapter 2) syllable structure. Also here a 'flash forward' is in order, since some changes which applied already in archaic Latin can be viewed, again, as forerunners of later development. Consider the distribution in (10a):

(10)

	open		closed		
	i. light CV	ii. heavy (no coda) CV:	iii. heavy (coda) CVC	iv. superheavy CV:C	
a. examples	<i>rīgīdā</i> <i>fācīlē</i>	<i>prīuātō</i> <i>dēpōnō</i>	<i>cōntīngīt</i> <i>pēruērsūm</i>	<i>stēllās</i> <i>tēctōs</i>	
b. % stressed	7%	10.3%	12.8%	2.3%	TOTAL 32.4%
% unstressed	24.5%	11.3%	26.5%	5.3%	67.6%

While all four combinations of VL and syllable structure were admissible, the set of superheavy syllables was sizeably depleted by change.<sup>18</sup> For instance, geminate

<sup>18</sup> The term 'superheavy' is employed here to single out (10iv)-type syllables, since their having been selectively targeted by change shows that Latin phonology treated them as a natural class. Unlike in other languages, however, this had no impact on any synchronic rule—like the stress rule in (4) above—nor on

-ss- was degeminated after a long vowel or diphthong around 100 BC (Leumann 1977: 181): *fūssus* ‘poured’ > *fūsus*, *cāssus* ‘fall’ > *cāsus*, *caussa* ‘cause’ > *causa*. This led to differentiation between forms which once were identical, as in *s*-perfect formation, where *gēssit* ‘carry.PRT.3SG’ retains -ss- after a short vowel, while in *mīsit* ‘release.PRT.3SG’ < *mīssit* (CIL I<sup>2</sup> 1216) degemination occurs because of the root long /i:/. At a more recent date, strings consisting of /V:/ + geminate lateral (and, more marginally, /nn/) must also have become problematic, as shown by their elimination through contrasting strategies in different Romance branches: a \*STĒLA (< STĒLLA) has to be reconstructed for Gallo-Romance (Fr. *étoile* ‘star’; cf. the open syllable diphthongization as in *toile* ‘canvas’ < TĒLA) and Rhaeto-Romance (Engadinian *staila*, again with the same open-syllable diphthongization of Ē as in *taila*), whereas the Romanian cognate *stea* goes back to \*STĒLLA (compare *șa* ‘saddle’ < \*șea < SĒLLA), with vowel shortening. However widespread, these changes did not result in complete eradication of /V:ll/ strings, as witnessed by It. *m[i]lle* ‘thousand’ which, given the diachronic correspondences in stressed vowel qualities discussed below in Chapter 2, (15), attests to preservation of both the long vowel and the geminate consonant. But on the whole they contributed to the statistical imbalance illustrated by Kiss (1971: 14), whose counts (performed on an 814-syllable passage from CAES. *Gal.* 3.3–5) are reported in (10b). As is readily apparent, superheavy syllables (10iv) were a clear minority, both in stressed (2.3%) and unstressed position (5.3%). Symmetrically, light syllables (10i) were much less frequent under stress (7%) and occurred much more frequently in unstressed position (24.5%). Thus, the establishment of a complementary distribution of VL with respect to stress position and syllable structure, which was to reach completion in the Latin–Romance transition (see Chapter 2), as Wüest (1979: 117) nicely put it, ‘apparaît déjà en filigrane dans l’ancien système’ [‘already appeared as a watermark in the old system’].<sup>19</sup>

It is now time to move on, in the next chapter, to scrutinizing the evidence pointing to this transformation. Before this, the plan of the book will be summarized.

### 1.3 Structure of the argument and aims of the book

Chapter 2 will be devoted to expounding the philological evidence available on the transition from the Latin quantity system, featuring both contrastive VL and contrastive consonant gemination, to the early Romance one, in which VL was no longer contrastive. Sifting the evidence—which is intricate and has been the subject

poetic metre: in other words, Latin had no synchronic ternary weight distinction; this contrasts with e.g. Hindi, where CVVC and CVCC syllables count as superheavy and depart from heavy syllables CVV and CVC for purposes of stress assignment (Broselow et al. 1997: 19; Davis 2011: 113; Zec 2011: 1346).

<sup>19</sup> Many others (including e.g. Lüdtkke 1956: 127–31; Herman 1968: 202; Porzio-Gernia 1976–7: 149f.; A. Castellani 1991: 19) have stressed the role of the increasing subordination of vowel quantity to stress as a forerunner of the demise of CVL in Late Latin/early Romance.

of unceasing debate—I shall show that recent research on Late Latin has come up with a plausible story about how things may have gone: these conclusions from research on Late Latin cannot be ignored when advancing hypotheses on how the individual Romance CVL systems came into being. While in Chapter 2 modern Romance data will be mentioned only inasmuch as they provide clues for reconstruction (a necessary move, since Proto-Romance, by definition, is not attested), these data come to the fore in Chapter 3, which consists of a *tour d'horizon* of VL in modern Romance languages and dialects. These can be classified in several ways, as far as VL is concerned. A first subdivision is between languages displaying CVL and languages lacking it, whereby all the contemporary standard languages belong to the latter category. However, between, say, Italian, Romanian, and French, there are clear differences: while Italian has no CVL but has an allophonic rule deriving long vowels in stressed open syllables, Romanian, also lacking CVL, does not display such an allophonic rule. French is like Romanian today, in this respect, but contrary to Romanian, there is evidence that it must have gone through a stage in which VL was distinctive, under conditions similar to those observed to this day in several Gallo-, Rhaeto- and Northern Italo-Romance dialects (i.e. in an area usually dubbed 'Northern Romance', see Map 2 in Appendix).

These three types display a certain areal coherence: absolute lack of phonological specification of VL, either phonemic or allophonic, is found not only in the Balkans but also in the entire Iberian peninsula (though with a few exceptions),<sup>20</sup> whereas the part of Central Romance complementary to the northern area just mentioned, namely central-southern Italy and Sardinia, has VL ruled allophonically like Standard Italian: the Italian facts will be paid special attention, since (a) the open syllable lengthening at work there plays a major role in the reconstruction of the Latin-Romance transition advocated here, (b) its existence has been insistently denied in recent work in experimental phonetics and theoretical phonology, and (c) its relevance has often been ignored in recent studies on the diachrony of CVL in Northern Romance.

After describing the different Romance VL systems in Chapter 3, I shall move on in Chapter 4 to considering competing hypotheses on the rise of secondary CVL in Northern Romance, focusing especially on the varieties for which this issue has been most debated. The same chapter also discusses the method of diachronic phonology, in an attempt to pave the way for Chapter 5, in which I put forward my own reconstruction. This crucially capitalizes on a detailed inspection of dialect variation, which (as I intend to show) is of paramount importance for fully assessing the competing explanations for the sound changes under discussion.

<sup>20</sup> In Old Portuguese, derived long vowels developed via coalescence (e.g. [ˈsɔ:] 'alone.FSG' < *soa* < SOLAM, [ˈse:ta] 'arrow' < *saéta* < SAGITTAM; cf. Naro 1971: 382, de Haas 1988: 175–8), but these did not give rise to any phonemic contrast (cf. Mateus and d'Andrade 2000: 30).

The comparative reconstruction to be outlined in Chapter 5 results in a hypothesis about how the VL systems observed in different dialects relate to each other and about how this relationship arose over time. This is further confirmation of an old tenet in historical linguistics, according to which geographical variation across related dialects is liable to mirror the stepwise progression of change over time and space. In the final part of Chapter 5 (§5.4), I shall propose an explanation for the sequence of diachronic changes thus reconstructed: this appeals to the interplay between substantive phonetic forces affecting vowel duration and phonological constraints on VL, which are in part motivated by the phonetics but in part also independent from it, as phonology is in general (at least, under the view of phonology espoused here, as made explicit in §3.2). Chapter 6, finally, will draw some conclusions, and address two more collateral topics, providing a discussion of the effectiveness of accounts in terms of foot structure of the Romance facts investigated here, and a sketchy comparison with similar data from West Germanic, another language (sub-)family which on the one hand displays CVL and on the other has undergone open syllable lengthening.

The aim of the book is declared by its title: I intend to describe the way in which VL changed from Latin to the Romance languages and dialects. This could be done, in principle, in many different ways, as attested by the extremely varied literature on the topic, ranging from work in theoretical phonology (e.g. Mester 1994) to studies in Latin philology (e.g. Allen 1973) and the historical sociolinguistics of the Latin language (e.g. Adams 2013: 37–51). The references just cited, all pieces of scholarship of the highest order, could hardly differ more strongly from each other in terms of treatment of the primary data, focus, priorities, expository style, etc. Yet they all deal with VL in Latin, and comparably diverging references could be adduced for any Romance languages touched upon in what follows. For contemporary varieties, to the types of text just mentioned we should add experimental phonetic studies (e.g. Renwick's 2012 recent comprehensive study on Romanian vowels). While literature from these different genres will be taken into account in what follows, the present book is an essay in historical Romance linguistics, whose basic concern is to provide a detailed survey of the relevant Romance data and to contribute to the understanding of how these data have evolved in diachrony, and of why they evolved the way they did. This is reflected in the tenor of the following discussion. Even if this (admittedly) hardly meets the expectations laid upon a monograph in phonology and/or phonetics in the current academic landscape, the results of the discussion will also be of relevance for theoretically interested phonologists.

One first reason is *ex negativo*, and concerns the issue of the limits of synchronic explanation, an issue addressed *avant la lettre* (i.e. before the establishment of modern synchronic linguistics) by Paul (1880: 20)—according to whom synchronic consideration of language is merely descriptive, while only reconstruction is explanatory—and influentially revived in more recent times by Blevins (2004: 311),