

Latin pronunciation

(from ancient to ‘modern’)

Luciano Canepari – © 2019⁴

1. Vowels & diphthongs *

<i>i</i>	(<i>ī</i>) /i/ [ɪ], <i>CiV</i> / <i>CiV</i> / [CɪV], <i>ViV</i> / <i>VjV</i> / [VɪjV], # <i>iV</i> /# <i>jV</i> / [#jV] ² (<i>ī</i>) /i:/ [ii(C/V), ːi] ¹
<i>e</i>	(<i>ē</i>) /e/ [ɛ, ːɛ] (<i>ē</i>) /e:/ [ee(C/V), ːe] ¹
<i>a</i>	(<i>ā</i>) /a/ [ɐ] (<i>ā</i>) /a:/ [aa(C/V), ːa] ¹
<i>o</i>	(<i>ō</i>) /o/ [ɔ, ːɔ] (<i>ō</i>) /o:/ [oo(C/V), ːo] ¹
<i>u</i>	(<i>ū</i>) /u/ [ʊ], / <i>CūV</i> / [CūV] <i>CuV</i> ³ (<i>ū</i>) /u:/ [uu(C/V), ːu] ¹
<i>y</i>	(<i>ŷ</i>) /y/ [ɻ] ⁴ (<i>ŷ</i>) /y:/ [yy(C/V), ːy] ^{1, 4}
<i>ei</i>	/ei/ [ɛɪ, ːɛɪ] ⁵
<i>ei</i>	(<i>eī</i>) /ei:/ [ɛi, ːɛi]
<i>eu</i>	/eu/ [ɛʊ, ːɛʊ] ⁵
<i>ae</i>	(<i>æ</i>) /ae/ [ɶɛ] ⁵
<i>au</i>	/au/ [ɶʊ] ⁵
<i>oe</i>	(<i>œ</i>) /oe/ [oɛ] ⁵
<i>ou</i>	/ou/ [ɔʊ, ːɔʊ] ⁵
<i>ui</i>	/ui/ [ʊɪ] ⁵

* Examples for the main Latin vocalic elements:

vīdīt /wi:dit/ [ˈwiidɪt] ‘he/she saw’ & *vīdēt* /widet/ [ˈwidɛt] ‘he/she sees’
vēnīt /we:nit/ [ˈweenɪt] ‘he/she came’ & *vēnīt* /wenit/ [ˈwɛnɪt] ‘he/she comes’
mālŭm /ma:lum/ [ˈmaalũ] ‘apple’ & *mālŭm* /malum/ [ˈmɛlũ] ‘bad’
pōpŭlŭm /po:pulum/ [ˈpoopulũ] ‘poplar’ & *pōpŭlŭm* /populum/ [ˈpɔpulũ] ‘people’
fūrōr /fuxor/ [ˈfuurɔr] ‘I steal’ & *fūrōr* /furor/ [ˈfʊrɔr] ‘rage’.

Further useful examples:

lībēr /li:ber/ [ˈliibɛr] ‘free’ & *lībēr* /liber/ [ˈlibɛr] ‘book’
lĕgēm /le:gem/ [ˈleegɛ] ‘law’ & *lĕgīt* /legit/ [ˈleɣɪt] ‘he/she reads’
vĕlŭm /weelum/ [ˈwe:lũ] ‘veil’ – *pĭlŭm* /pilum/ [ˈpɪlũ] ‘hair’ – *vĭnŭm* /wi:num/ [ˈwiinũ] ‘wine’ – *vĭttām* /wittam/ [ˈwittɛ] ‘peak’ – *sĕctām* /sektam/ [ˈsɛktɛ]

fig 1. Classical Latin vowels.

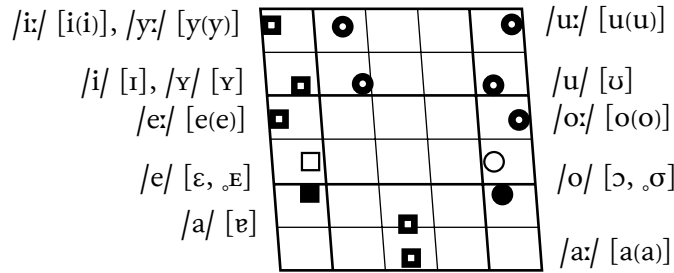


fig 2.1. Classical Latin diphthongs.

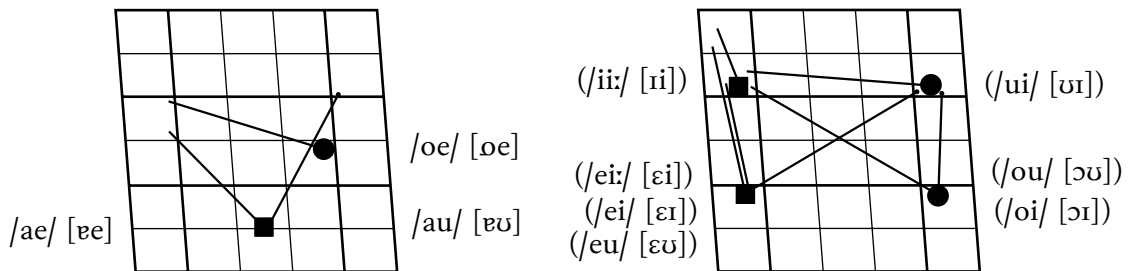


fig 2.2. Classical Latin diphthongs: colloquial variants.

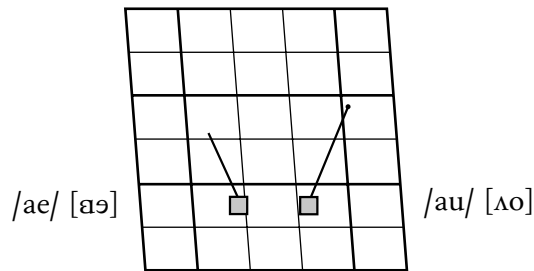
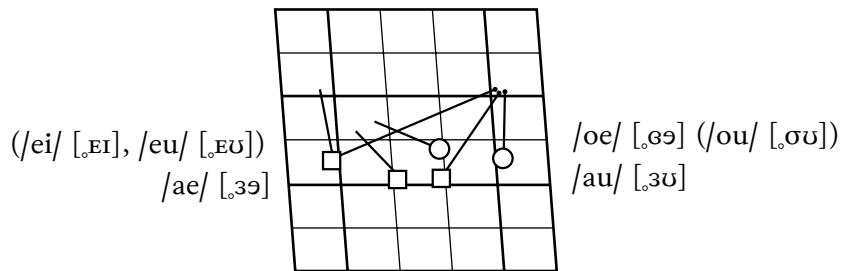
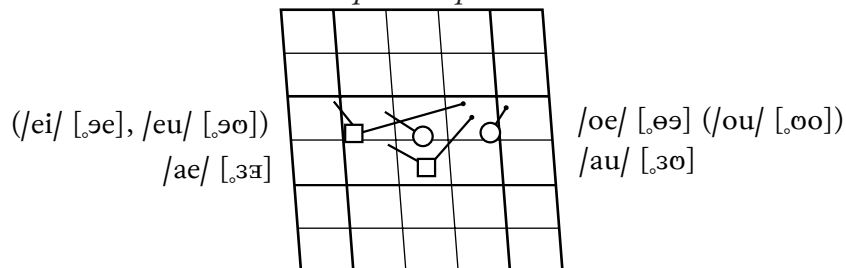


fig 2.3. Classical Latin diphthongs in unstressed syllables (including quicker speech variants).



In quicker speech.



‘sect’ – sōlēm /sollem/ [ˈsoolɛ̃] ‘sun’ – nūcēm /nukem/ [ˈnʊkɛ̃] ‘nut’ – lūcēm /lu:kem/ [ˈluukɛ̃] ‘(a) light’ – rūptūm /ruptum/ [ˈrʊptʊ̃] ‘broken’ – cōctūm

/kɔktum/ [ˈkɔktũ] ‘cooked’ – cŭrsŭm /kursum/ [ˈkʊrsũ] ‘course’ – cōrsŭm /korsum/ [ˈkɔrsũ] ‘Corsican’.

And: praedām/prædām /praedam/ [ˈprædɛ] ‘prey’ – coenām/coenām /koenam/ [ˈkɔenɛ] ‘supper’ - aurŭm /aurum/ [ˈɛʊrũ] ‘gold’.

fig 3. Classical Latin nasalized vowels.

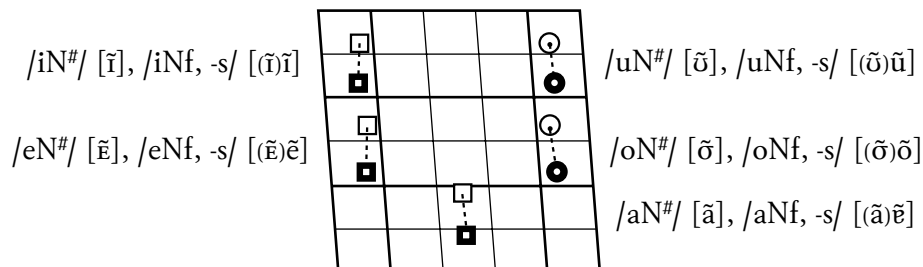
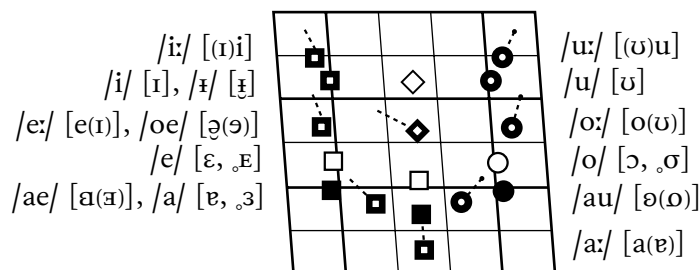


fig 4. Rural/popular Latin vowels & diphthongs (with no /y:, ɣ/, but with /ɥ/ [ɥ]).



¹ There is a phonetic difference in length between stressed ([ː]) and unstressed long vowels ([ː]): *ārā* (abl.) /a:ra:/ [ˈaara], cf *ārā* (nom.) /a:rɛ/ [ˈaare].

² *Audio, peius* (*pejus*), *etiam, iam* (*jam*) /audio:, pejjus, etiam, jəm/ [ˈɛʊdɪo, ˈpɛi-jʊs, ˈɛtiɛ, ˈjɛɛ]. For metrical reasons, certain dictionaries and grammars, unfortunately, mark as ‘long’ the *short vowels* that precede *iV*, which –in reality– are /VjjV/ [ˈVijV], eg *pēiūs*’.

³ *Puer, puella* /puer, puella/ [ˈpʊɛr, pʊˈɛɪɪɛ]. But *quV, nguV* are /kw, ngw/ [kɥ, ŋɥ, kɥ, ɣ̃] (fig 6).

⁴ Rounded, generally used in Greek loans, and appear in the vocogram boxes just to the right of those of /i:, i/ [ii, i].

⁵ There occur various vowel sequences, which are true phonetic diphthongs, even if phonemically we prefer to consider them simply as sequences, just like consonant sequences.

The two more frequent sequences (in lexemes) are: *au* /au/ [ɛʊ] and *ae* (æ) /ae/ [ɛɛ] (which is derived from archaic *ai* /ae/ [ae]; quite frequent as desinential grammeme); *oe* (œ) /oe/ [œ] is rare; while *ei* /ei/ [ɛi], *eu* /eu/ [ɛʊ], *ui* /ui/ [ɔi] are decidedly rarer; even more so are *eī* /ei:/ [ɛi:], *yi* /yi/ [ɣi], and *ou* /ou/ [ɔʊ], which only occurs lexically in the conjunction *prout*, although in phono-texts we also find -o V-, /o:ʰV, oʰV/. We can even find triphthongs formed by -ae + V- /aeʰV/, provided there are neither interruptions, nor stress increases on the initial vowels.

In cases like *aes, aeris* we have /aes, aeris/ [ˈɛs, ˈɛɛris] (æ, æris, short diphthongs), while *aer, aeris* (often indicated as *aër, aëris*), are, instead, /aɛ:r, aɛris/ [ˈaaɛr, ˈaaɛris]

(long diphthongs), from Greek ἀήρ. Also: *poena* /poena/ [ˈpoenɐ] (short diphthongs), but *poema*, *poematis* (or *poëma*, *poëmatis*) /poema, poeːmatis/ [pɔ̃ːeːmɛ, pɔ̃ːeːmɛtɪs] (hiatuses) from Greek ποιήμα. We also have cases like *aunculus* /aunkulus/ [ɛʊŋkulus] (from *avunculus* /ɛwunkulus/ [ɛʊwŋkulus]).

fig 4 includes the possible alternative /ɛ̃/ phoneme, which could occur, before /m, p, b, f/ or after /w/, in words like *optimus*, *manipulus*, *libet*, *pontifex*, *virtus*.

2. Consonants (here shown in alphabetical order, but see fig 5)

<i>b</i>	/b/ [b] ⁶
<i>c, k</i>	/k/ [k] ⁷
<i>ch</i>	/kh/ [kh] ⁷
<i>d</i>	/d/ [d] ⁶
<i>f</i>	/f/ [f]
<i>g</i>	/g/ [g, ɡ], /gN/ [ŋN, ŋN] <i>gn, gm</i> ⁸ , and <i>ngu+V</i> /ngw/ [ŋɡ̃, ŋɡ̃] ¹³
<i>h</i>	/h/ [h/h̃] ⁹
<i>l</i>	/l/ [l], /lV/ [lV] <i>lV</i> , /l#/ [l̥#] <i>l̥#</i> , /lC/ [l̥C] <i>lC</i> , /ll/ [ll̥] <i>ll</i> ^{10, 18}
<i>m</i>	/m/ [m], /Vm#/ [ˈṼṼ, ˈṼ] - <i>Vm</i> (#, V-), /N(#)C/ [N≡C] <i>m</i> (#)C ¹¹
<i>n</i>	/n/ [n], /VnC/ [VN≡C] <i>VnC</i> , but /Vnf, -s/ [ˈṼṼf, ˈṼf, -s] <i>Vnf, Vns</i> ¹²
<i>p</i>	/p/ [p] ⁷
<i>ph</i>	/ph/ [ph] ⁷
<i>qu</i>	/kw/ [k̥, k̃], and <i>ngu+V</i> /gw/ [ŋɡ̃, ŋɡ̃] ¹³
<i>r</i>	/r/ [r], <i>rh</i> /r(h)~(h)r/ ^{14, 18}
<i>s</i>	/s/ [s], [z] + /b, d, g/; <i>b, d, g</i> , but not before /m, n; r; l/ <i>m, n, r, l</i> ^{15, 16}
<i>t</i>	/t/ [t], <i>tiV</i> /tiV/ [tiV] ⁷
<i>th</i>	/th/ [th] ⁷
<i>v</i>	/w/ [w]
<i>x</i>	/ks/ [ks] ¹⁷
<i>z</i>	/z/ [z] ^{18, 19}

⁶ /b, d/ become /p, t/ [p, t] when followed by voiceless consonants: *urbs*, *obtusus*, *adpatruus* /ˈurps, ɔpˈtusʊs, atˈpatruʊs/ [ˈurps, ɔpˈtusʊs, ɛtˈpɛtrʊs], except for insistence. Of course, we have *x* /ks/ [ks], ie ‘cs’, as in *rex* /reks/ [ˈrɛks]. In senten-

fig 5. Classical Latin consonants, with taxophones, & popular/rural variants between ().

	bilabial	labiodental	dental	dentovelar	alveolar	alveovelar	prepalatal	palatal	postpalatal	prevelar	velar	prevelolabial	velolabial	laryngeal
Nasal	m [m]		[n]		n		[ɲ]	[ɲ]	(ɲ)	[ŋ]	[ŋ]			
Stop	p b		t d					(c ɟ)	[k ɡ]	k ɡ	[k̥ ɡ̃]	[k̃ ɡ̃]		[ʔ]
Constrictive	(ɸ β)	f	s [z]-(ð)					(ç)	(ʝ)	(ʝ)				
Approximant					(z)			j					w	h [ɦ]
Tap					r									
Lateral			[l]	[l̥-l̃]	l	[l̥]-(l̃)	[l̃]							

ces, *ab*, *sub*, *ad* assimilate to following consonants, according to usual word formation rules (nowadays, crystalized in the current spelling of Latin texts).

This produces geminates, in fluente speech, with the possibility to keep their place of articulation before other stops or nasals. However, voicing is lost before voiceless consonants: *ad portas* /apportas, atp-/ [ɛp'pɔrtas], *ad quem* /akkwem, atkwem/ [ɛk'kɛ̃ɛ̃], *sub monte* /summonte, subm-/ [sʊm'mɔntɛ], *sub die* /suddie:, subdie:/ [sʊd'die], *sub fine morbi* /suffi:ne morbi:/ [sʊf'fiine 'mɔrbi].

⁷ 'Aspirated' voiceless stop, actually the sequence /kh/ [kh], mainly in Greek loans, as a phonostyleme (for φ, θ, χ). Of two adjoining 'aspirated' stops, the first one loses its 'aspiration': *phthisis* /phthisis/ [p'thɪsɪs].

⁸ In clear and precise pronunciation, /gN/ (ie /g/ + nasal) can be [gN]. The highly controversial matter about [ɲn] and [gn], for *gn*, is simply a tiny realization difference for /gn/. In fact, even in word-initial position in a phrase, we have [ɲn]: *tibi gnarigabo* /tibigna:riga:bo:, tibi:/ [tɪbɪɲnarr'gaabo, tɪbi-]. In addition, any form with *gn-* are mainly archaic: *nosco* /no:sko:/ ['noosko] (← *gnosco*) –including the name *Gnaeus* /gnaeus/ [g'næus]– or, in any case, with variants in *n-*: (*g*)*naritas* /(*g*)narita:s/ [(*g*)'naaritas], thus also [tɪbɪnarr'gaabo, tɪbi-]. We equally have *tegmen* /tegmen/ [tɛɲmɛn], or [tɛgmɛn] for insistence (more systematically so in rural and popular speech). For *ngu* see *g* and *qu*.

⁹ Rather weak, even in preclassical age, and not rarely voiced; between vowels, by then = /θ/: *nihil* /ni:l, niil/ ['niil, 'niɦɦ], *mihi* /mi:i, mii, mi:/ ['mii, 'miɦ, 'mii].

¹⁰ Thus, velarized alveolar lateral, /l/ [ɭ], before a pause or a consonant. But /ll/ [ɭɭ] and /li:, li, li:/ [li(i), li, li]: *famulus* /famulus/ ['fɛmʊlʊs], *simulare* /simulare/ [sɪmʊ'laare] (vs *familia* /familia/ [fɛ'miɦɦ]), *similis* /similis/ ['sɪmiɦɦ]) where, by assimilation, the vowels which preceded [ɭ] had become back ones. Up to the end of the preclassical age, [ɭ] also occurred before non-front vowels (including /a, a:/).

¹¹ *Word-finally*, either before a pause or a vowel beginning a following word, *m* simply nasalizes the vowels, [ĩ, ẽ, ẽ, õ, õ], by lengthening them into narrow closing diphthongs if stressed, [ĩĩ, ẽẽ, ẽẽ, õõ, õõ]. Let observe: *pulchrum est* /pulkrum(e)st/ [pʊɭkhrʊst], *pulchra es* /pulkra(e)s/ [pʊɭkhrɛs].

When final before a consonant, *m* behaves as /n(ʰ)C/: [m] + /p, b, m/; [n] + /t, d, n/; [ɲ] + /k, g; kw, gw/ ([ɭ, ɰ; ɭ, ɰ]). But, *m* is dropped, while nasalizing a preceding vowel, when followed by /j, w, h/ (even [ʔ] by emphasis). When followed by /f, s/, before /r, l/, it is either dropped nasalizing the vowel, or completely assimilated. Let us just consider a couple of exaples: *cum grano salis*, *cum libro* /kʊngrano:salis; kul(ə)libro:, kum(ə)libro:/ [kʊɲgrano'sɛɦɦ; kʊɭ'libro, kʊ'libro].

Word-internal *m* is kept, becoming homorganic to a following consonant: *quamquam* /kwɛnkʷem/ [kʷɛɲkʷɛ̃], *omnis* /'ɔnnis/ ['ɔnnis]. In our phonemic transcriptions, we simplify a bit, using /Vm/ for nasal(ized) vowels, [Ṽ]. The same is done for /kw, gw/ [ɭ, ɰ; ɰ, ɰ].

¹² Alveolar before a vowel, but homorganic to a following consonant, except for *nf* and *ns*, where nasalization (as in the preceding case) and lengthening occur, in stressed syllables: *confero*, *constans*, *constantis*, *mens*, *mentis* /konfero:, konstans, konstantis, 'mens, 'mentis/ [kõõfɛro, kõõstɛs, kõõstɛntis, 'mɛ̃ɛs, 'mɛntis].

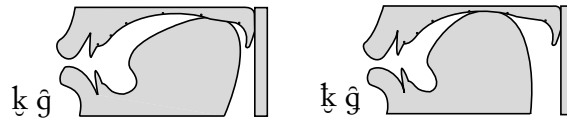
(Traditionally, for metrical reasons –by forcing things, given the very limited written possibilities– this fact is shown as ‘/V:/’, but also keeping *n*: **cōnfērō*, **cōnstāns*, **cōnstāntis*, **mēns*, *mēntis*. This lets people think we may have *[‘koomfɛrɔː, ‘koonstaans, koonstɛntis, ‘meens, ‘mɛntis], where excessively long vowels, in unstressed syllables, are clearly surprising, at least in everyday language.

In word-final position, in phrases with *in*, *non*, we find that *n* /n/ assimilates not only to stops and nasals, but also to /j, w/ [ɲj, ŋw] (including /ni(ː), nɪ, nj/ [ɲi(i), ɲɪ, ɲj], word-internally, in popular and rural speech). However, it does not assimilate before /r, l/, as –on the contrary– it does in word-internal position. Anyway, in popular and rural speech, such assimilations were frequent, if not normal, even before word-internal /r, l/.

Before a vowel, *n* remains /n/ [n], although it is not resyllabified with it, when stress is present: *in agrum* /inθagrum/ [ɪnʰɛgrũ] (not *[ɪʰnɛgrũ]).

¹³ Labio-(pre)velar stops (cf 6): voiceless, *qui* /kwi:/ [‘k̟ii], or voiced, *languor* /langwor/ [lɛŋg̟ɔr]; /gw/ [g̟] occurs only between /n/ and vowels different from /u/. However, in rural and popular speech, /kw, gw/ [k̟, g̟; g, g̟] were practically replaced by /k, g/ [k, g], and even [c, ɟ], before front vowels, in addition to /gm/ [gm, gm̟].

fig 6. Velolabial & prevelolabial stops [k̟, g̟; k̟, g̟] /kw, gw/.



¹⁴ Generally, alveolar tap, [r], both in stressed and unstressed syllables, with the possibility of either ‘aspiration’ [rh], or ‘preaspiration’ [hr], for *rh*, *ρ*, in Greek loans, as a phonostyleme.

¹⁵ *Disgregatio*, *Lesbos* /disgregatioː, lesbos/ [dɪzgrɛˈgaaɪo, ˈlɛzbɔs]; but *disiungo* (*disju-*), *asma* /disjungoː, asma/ [disˈjuŋgo, ˈaasmɐ].

¹⁶ Obviously, *sc* is always /sk/ [sk, sk̟]: *scio* /skioː/ [ˈskɪo]. In rural speech, /s/ before any /C/ tended to become [ʃ, z̥; ʒ, z̥] (prepalatal or laminal alveolar).

¹⁷ The change from /ks/ to /gz/ for *exV-* /ɛksV-/ [ɛksV-] decidedly belongs to periods after the classical age, while the change of (initial) *x-* /ks → s/ happened even later than in classical age, thus, it is equally a non-neutral peculiarity.

¹⁸ It generally occurs in Greek loans, as a phonostyleme (for ζ). Since, in addition to [z], it also had further possible variants, [zz] and [dz] (not [dz], stopstricive), it is hardly surprising that in verse it could ‘lengthen syllables’.

¹⁹ In addition to what already indicated above, in *popular* and *rural* speech, any voiceless simple consonants, between any voiced phones (either vocoids, or contoids), tended to become lenis, [ç], or half-voiced, [ç̣]. Furthermore, again popular and rural speech, between vowels, often had the continuous contoids shown between () in the table of consonants, including [z] for /r/ and [ʃ] for /l/ [ʎ].

Let us observe that /ph, th, kh/ [ph, th, kh, kh/ are phono-stylemes for Greek loans with original φ, θ, χ /ph, th, kh/ [ph, th, kh, kh/. In popular or rural speech

they were replaced by plain /p, t, k/ [p, t, k, k̄, c].

Furthermore, [ʔ] could freely occur before vowels in word-initial position, after pause or in stressed syllable, especially for emphasis. Let us add that words like *sua-vis*, *suesco* and *Suetonius* were generally treated differently in current language and in verse. In fact, /[#]swV-/ [swV-] were often changed into [sʊV-] for metrical reasons.

3. Length & stress

Length is phonemic both for the vowels, as already seen, and for the consonants, also if combined together, especially for the vowels with different timbres: *venit* /we-nit/ [ˈwɛnɪt] ‘he/she/it comes’ vs *venit* /wɛnit/ [ˈwɛnɪt] ‘he/she/it came’, *populum* /populum/ [ˈpɔpʊlũ] ‘people’ vs *populum* /po:populum/ [ˈpoopʊlũ] ‘poplar’, *malum* /malum/ [ˈmɛlũ] ‘bad’ vs *malum* /ma:lum/ [ˈma:lũ] ‘apple’; *male* /male/ [ˈmɛlɛ] ‘badly’ vs *malle* /malle/ [ˈmɛlɛ] ‘to prefer’, *sumus* /sumus/ [ˈsʊmʊs] ‘we are’ vs *summus* /summus/ [ˈsʊmmʊs] ‘supreme’.

The short vowels, either stressed or not, are as shown in the vocogram (let us notice a tiny timbre change for [ɛ, ɔ] → [ɛ̄, ɔ̄]). In stressed syllables, either open (or ‘free’) or closed (or ‘checked’), the long vowels are phonetically narrow monotimbric diphthongs, /^ˈV:/ [ˈVV] [ˈVVC]: *stella* /ste:l̄la:/ [ˈsteeɫla] (even if directly followed by vowels: *aër* /a:er/ [ˈaaer]).

However, in everyday spoken language, unstressed /^ˈV:/ (either in open or closed syllables) are realized as short vocoids, [ˌV] (as just seen): *stella* /ste:l̄la:/ [ˈsteeɫla]. But, let us notice very carefully that they keep their original timbres, [i, e, a, o, u; y], which are different from those of the short vowels: [ɪ; ɛ, ɛ̄; ɐ; ɔ, ɔ̄; ʊ; ʏ].

In classical Latin, *stress* depends on the length of the *penultimate phonic vowel element* of a word of more than two phono-syllables. Naturally, since this is a phonic matter, it must not be hastily (and incompetently) confused with any trivial spelling matter!

So, we can have either /V/ (any *short vowel*) or /V:, VV/ (respectively, a *long vowel*, or a *diphthong*). Thus, for instance, *ae* or *au*, /VV/, counts exactly as /V:/, *ie* as a unitary entity, certainly not as two separate /V/’s.

Therefore, if the vowel is *short* (or *light*) and in a *free* (or *open*) *syllable* (thus corresponding to a single *mora*), *the stress is shifted to the preceding* (either short or long) *vowel or* (phonemic) *diphthong*, belonging to the antepenultimate (or *third last*, or *last but two*) syllable of that (polysyllabic) word.

Thus, we have (where /\$/ means any phonic syllable, either with [V] or [VV, VC]): /(\$)\$V\$/ [((\$)\$V\$), /(\$)\$VV\$/ [((\$)\$VV\$), /(\$)\$VC\$/ [((\$)\$VC\$).

Thus, for instance, we have: *animae* /animae/ [ˈɛnɪmɛ], because /ɛe/ [ɛe] is a diphthong, which functions as a ‘long (tautosyllabic) vowel’, [VV], not as two syllables.

The same goes for *anima* (abl.) /anima:/ [ˈɛnɪma] (although /V:/ it is realized phonetically as a short vowel, in spite of being a phonemic monotimbric diphthong [VV]). However, it is different from *anima* (nom.) /anima/ [ˈɛnɪmɛ], although there is no difference for stress.

Let us, now, consider an interesting (seemingly ambiguous) example like *adaestuo* /adaestuo:/ [ə'dæstuo]. Of course, it has three syllables (certainly not four, or even five), since both *ae* /ae/ [æ] and *uo* /uo:/ [uo] are just one syllable each. For this reason, the penultimate vowel, in *-tuo* /-tuo:/ [-tuo], is /u/ [u], and the stressed syllable is *-daes-* /-daes-/ [-dæes-]. Of course, this last one is nothing like */-daes-/ [-dæ'es-], because *ae* /ae/ [æ] –as just said– is a diphthong, ie the indivisible nucleus of its syllable.

Let us also consider: *sententiae* /sententiae/ [sɛntɛntiæ], with three phono-syllables, the last one being *-tiae* /-tiae/ [-tiæ], with a triphthong. Again, we must be very careful not to consider *-a-* /-a-/ [-ə-] as if it were a 'penultimate (short) vowel', which would bring to an erroneous *[sɛntɛntiæ].

It is also interesting to consider these other examples: *aerius* /aerius/ [a'ɛriʊs], where *ae* is not a (phonemic, nor a phonetic) diphthong. Also *Aëllō* /aello:/ [v'ello] has no diphthong, while *Aelius* /aelius/ [v'ɛliʊs] certainly has it. In addition, we find *tenuitas* /tenuitas/ [tɛ'nʊitas], with a real phono-diphthong (although rather rare) *ui* /ui/ [ui].

Further possible phono-diphthongs (in addition to the two very frequent ones, *ae* /ae/ [æ], *au* /au/ [əʊ]), that we can certainly find, are: *oe* /oe/ [œ], and *ei* /ei/ [ɛi], *eu* /eu/ [ɛʊ], *ui* /ui/ [ui], *oi* /oi/ [ɔi], *ou* /ou/ [ɔʊ], &c, also /Vi/). Some examples: *hei!* /hei/ [hɛi], *heu!* /heu/ [hɛʊ], *mei* /mei:/ [mɛi], *meus* /meus/ [mɛʊs], *tui* /tui:/ [tʊi], *metuo* /metuo:/ [mɛtʊo], *metuere* /metuere/ [mɛtʊɛɛ], *tuitus* /tuitus/ [tʊitʊs], cf *gratuitus* /gratuitus/ [gratu'iitʊs]. Also some triphthongs: *tueor* /tueor/ [tʊɛɔr].

So, when the penultimate *syllable* is long (thus corresponding to two *morae*, or *moras*), it carries (intensive) stress (not a pitch one any longer, as it possibly was in archaic Latin). Examples: *cupido* /kupi:do:/ [kʊ'piido], where the vowel is long 'by nature' (due to /V:/ [pi:]), while in *viginti* /wi:ginti:/ [wi'ginti] the syllable is long 'by position', ie 'by convention', due to /VC/ [gɪn]).

However, below, we will see both double possibilities for stress, and exceptions with stress on the last, or ultimate, syllable, because certain words lost a previous final vowel or syllable. Let us add, here, that, in polysyllabic classical Latin words, the stress cannot fall on any syllable before the antepenultimate syllable (*not vowel* – whether short or long, or a diphthong): *superstites* /superstites/ [sʊ'pɛrstites], *audiamini* /audia:mini:/ [əʊdr'aamini].

Here is an example of a minimal pair for stress: *cupido* 'wishful' (dat./abl.) /kupi:do:/ [kʊ'piido], and *cupido* 'desire' (nom.) /kupi:do:/ [kʊ'piido]. Further useful examples: *democratia* (nom.) 'democracy' (Greek δημοκρατία) /de:mokratia/ [demɔ'krɛtiæ], and *viginti* '20' /wi:ginti:/ [wi'ginti].

Let us also compare: *vidimus* /widimus/ [wi'dimʊs], *videmus* /wi:de:mʊs/ [wi'dee-mʊs], *discere* /diskere/ [dis'kɛɛɛ], *audire* /au'diɛɛ/ [əʊ'diɛɛ]. Let us also consider: *mater* /mater/ [ma'ɛɛɛ], *pater* /pater/ [pɛ'ɛɛɛ], *propator* /propato:r/ [prɔ'pɛtoɾ], *propator* /propator/ [prɔ'pɛtoɾ] (& *proinde* /proθinde/ [prɔθinde, 'prɔθinde], *proin* /proθin/ [prɔθin, prɔθin], for which we will see more below).

Of course, the artistic metrical reading, accompanied by string music, is quite another thing in comparison with *true* language. In fact, it is artificially done in its rather unnatural way, which has its 'deserving' counterpart in the unnaturalness of singing, especially opera singing.

Let us notice well that *iV-* (as already seen above) has a consonantal function, /jV/ [jV]. Thus, we have *iugum* (or, better, *jugum*) [ˈjʊgʊ] /jugum/ (certainly not */iugum/ or */iugum/). Come to think of it, as the use of *u* /u/ [ʊ] and *v* /w/ [w] have already been commonly distinguished, it would be better to also systematically use *j*, instead of *i*, in *iV-* and *ViV* /jV, VjjV/ [jV, VijV] (the famous letters of Petrus Ramus, Pierre de La Ramée, 1515-1572). The examples provided should be carefully considered. Otherwise, we could also opt for plain *u* and *i*, both for /u, w/ [ʊ, w] and /i, j/ [ɪ, j].

Here are some special cases of seeming ‘irregular’ stress patterns. So we have the *dropping of a final vowel*: *educ(e)* /e:du:k/ [eˈdu:k], *illic(e)* /illi:k/ [ɪˈli:k], *addic(e)* /addi:k/ [ədˈdi:k], *adhuc(e)* /adhu:k/ [ədˈhu:k, ədˈh-].

We can also find the *contraction* of some phonemes into just one, through different ways: *Aemil(i)i* /aemilii:/ [æˈmili, -li] (voc. *Aemili* /aemili:/ [ˈæmili, -li]), *Mercur(i)i* /merkurii:/ [mɛrˈkuri, -ri] (different from the vocative *Mercuri* /merkuri:/ [ˈmɛrˈkuri, -ri]), *Valer(i)i* /walerii:/ [wɛˈlɛri, -ri] (voc. *Valeri* /waleri:/ [ˈwɛˈlɛri, -ri]), *Vergil(i)i* /wergilii:/ [wɛrˈgɪli, -li] (voc. *Vergili* /wergili:/ [ˈwɛrˈgɪli, -li]), also: *imper(i)i* /imperii:/ [ɪmˈpɛri, -ri], *consil(i)i* /konsilii:/ [kɔˈsɪli, -li], and *plebe(i)i* /plebeii:/ [plɛˈbeɪi, -eɪi, -eɪi] (even for the place). Let us also notice: *Gaius* /gajus/ [ˈgɛɪjʊs] and *Gai* /gai, gaj:/ [ˈgɛi, ˈgɛɪj].

Also (notice that, here, /-/ means that the string after it has to be considered as a kind of an independent word for stress assignment: *munit* (from *muni(v)it*) /mu:nit/ [muˈni:t], different from *munit* (present) /mu:nit/ [ˈmu:ni:t], *irritat* (from *irrita(v)it*) /irri:tat/ [ɪrriˈta:t], different from *irritat* (present) /irri:tat/ [ɪrriˈtɛt], *disturbat* (from *disturba(v)it*) /distur:bət/ [dɪsturbə:t], different from *disturbat* (present) /disturbat/ [dɪsturbət].

We also find cases of *oscillation*, depending on whether composition or dropping is more or less evident (including the very origin of certain names) as in: *satin* /sa(θ)in/ [səˈtɪn, ˈsɛtɪn] (from *satisne* /satisne/ [səˈtɪsne]), *sicin* /si:(θ)kin/ [siˈkɪn, ˈsiikɪn] (from *sicine* /si:(θ)kine/ [siˈkɪne, ˈsiikɪne]), *viden* /wi(θ)de(ɔ)n/ [wiˈdɛn, -ɛn, ˈwiɔdɛn, -ɛn] (from *videsne* /wide(ɔ)sne/ [wiˈdɛsne, -ɛs-]), *tanton* /tan-to:n/ [tɛnˈto:n, ˈtɛnton] (from *tantone* /tanto:ne/ [tɛnˈto:ne]), *nostra(t)s* /nos(θ)tras/ [nɔsˈtraas, ˈnɔstras], *deinde* /de(θ)inde/ [dɛɪndɛ, dɛɪndɛ], *proinde* /prɔ(θ)inde/ [ˈprɔɪndɛ, ˈprɔɪndɛ] (and *dein* /de(θ)in/ [dɛɪn, dɛɪn], *proin* /pro(θ)in/ [ˈprɔɪn, ˈprɔɪn] – also with [-Vɪn], based on the principle of a dropped final syllable).

Names: *Camillus* /ka(θ)millus/ [kɛˈmiɪlʊs, ˈkɛmiɪlʊs], *Cethegus* /ke(θ)the:gus/ [kɛˈthe:gʊs, ˈkɛthe:gʊs], *Maecenas* (from *Maecena(t)s*) /maeke:(θ)nas/ [mæˈkeenas, ˈmækeˈnaas], &c.

Also Greek words and names oscillate, because they can maintain their original forms: *satrapen* /sa(θ)trape:n/ [sɛtrɛpen, ˈsɛtrɛpen], *Acarnan* /akar(θ)nan/ [ɛˈkɛrnan, ˈɛkɛrˈnaan], *Cleopatra* /kleo(θ)patra/ [klɛˈɔpɛtrɛ, ˈklɛɔˈpɛtrɛ]. Notice that the ‘normal’ syllabication for clusters of a consonant followed by /rC, lC/, is /[#]CC/, while with /mC, nC/, we have /C[#]C/. However, for metrical reasons, things could be forced to also produce [C[#]r, C[#]l], in order to ‘provide’ heavy syllables for stress assignment, [VC[#]rV, VC[#]lV].

Furthermore, we have to consider the effect of the enclitics *-ce*, *-ne*, *-ve*, *-que*, *-dem*, *-met*, *-nam*, *-te*, *-cum* (and *quidem*), which attract stress to the preceding syllable (with possible oscillations): *musaque* /mu:θsakwe/ [ˈmuusəʔkɛ, mu'səʔkɛ], which is not at all confused with *musaque* (abl.) /mu:sakwe/ [mu'saaʔkɛ], not even when stress coincides.

In addition, *utraque* /u:θtrakwe/ [ˈuutrəʔkɛ, u'trəʔkɛ], equally different from *utraque* /u:trakwe/ [u'traaʔkɛ], *illene* /ilθlene/ [ɪˈlɛnɛ, ɪˈlɛnɛ], *loquive tacereve* /loθkwiwe take:θrewe/ [lɔʔkiwe təʔke:rewe, lɔʔkiwe təʔke:rewe], *egomet* /eθgomet/ [ˈɛgɔmet, ɛ'gɔmet], *tu quidem* /tu: θkwidem/ [ˈtuu ʔkɪdɛ, ˈtuuʔkɪdɛ].

The following words are felt to be unitary words (thus, with [(')\$\$\$]): *alicubi*, *sicubi*, *necubi*, *equidem*, *identidem*, *utinam*, *utiquem*, *undique*, *itaque* ‘therefore’.

But we have: *itaque* ‘and so’ (*ie et ita*) /iθtakwe/ [ɪtəʔkɛ, ɪtəʔkɛ], and *pone* ‘behind’ /po:θne/ [ˈpoone, po'ne] (but *pone!* –imperative– /po:ne/ [ˈpoone]).

Also compound verbs with *-do*, *-fit* have two stress possibilities (although the ‘regular’ one is less favored): *circumdo* /kirkumθdo:/ [kɪrkun'doo, -dɔ; kɪr'kundoo, -dɔ], *satisdo* /satisdo:/ [sətɪz'doo, -dɔ; sətɪzdo, -dɔ] (also *satis do*), *pessumdo* /pessumdo:/ [pɛssun'doo, -dɔ; pɛs'sundoo, -dɔ] (also written as *pessundo*, or *pessum do*), *arefit* /areθfit/ [a:re'fit, 'aare'fit], *madefit* /madeθfit/ [mædɛ'fit, 'mædɛ'fit].

Concerning verbs with *-facit*, we only have *arefacit* /are-fakit/ [ære'fɛkɪt], *madefacit* /made-fakit/ [mædɛ'fɛkɪt]. In fact, their ‘normalized’ forms would have been: **arefikit* /arefikit/ [a'refɪkɪt], and **madefikit* /madefikit/ [mæ'dɛfɪkɪt].

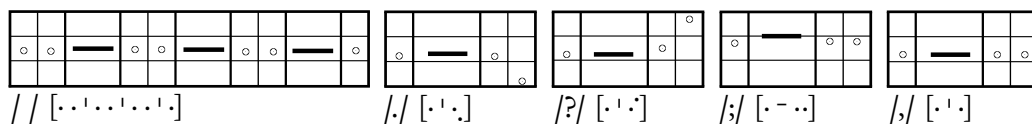
There are further possible oscillations, in sentences, in cases like: *apud me* /apud me:, apudme:/ [ˈɛpud 'mee, ɛ'pudme, ɛ'pum 'mee, ɛ'pumme], *pater mi* /pater mi:/ [ˈpɛtɛr 'mii, pɛ'tɛrmi], *morem gerit* /mo:remθ gerit/ [ˈmo:reŋ 'gɛrɪt, mo'reŋgɛrɪt], *operam dare* /operamθ dare/ [ˈɔpɛrɛθ 'dɛrɛ, ɔpɛ'rɛθdɛrɛ].

For *unicuique suum* ‘may all get their due’, instead of the correct form /u:nikui kwe suum/ [unɪ'kuɪʔkɛ 'suũ], at school, often **u:nikuθikwe suum* is ‘taught’. Let us also add an observation about *exiguitas*, which has to be pronounced /eksiguitas:/ [ɛk'sɪgɪtas], not **eksigwitas:/* [ɛk'sɪgɪtas]; in fact, /gw/ [ɣ] only occurs after /n/ [ŋ].

4. Intonation

The following intonation patterns are based on reliable deductions, going backwards, from Romance results to the original language, and favoring nearby territorial realities. Let us complete this concise outline of Classical Latin pronunciation, by also providing possible intonation patterns. They can safely be accepted as plausible and utilizable, with no real problems, nor strained interpretations.

fig 7. Classical Latin intonation patterns.



5. Text

Here is the Aesopian fable, in Latin. Let us pay particular attention to: *circumdabat* /kirkundabat/ [kɪr'kʊndɛbət].

Olim inter se Aquilo et Sol uter fortior esset certabant, cum viatorem quendam paenula amictum procedentem conspexerunt; atque ipsorum fortiores flatus emittebat, eo artius viator se circumdabat paenula; tandem, viribus destitutus, propositum suum omisit. Tum Sol caelum clarissima luce illustravit; mox vero viator, calore victus, paenulam exiit. Itaque Aquilo, quamvis invite, confessus est solem esse fortiores.

Aquilo autem vehementissime furere coepit; sed, quo fortiores flatus emittebat, eo artius viator se circumdabat paenula; tandem, viribus destitutus, propositum suum omisit. Tum Sol caelum clarissima luce illustravit; mox vero viator, calore victus, paenulam exiit. Itaque Aquilo, quamvis invite, confessus est solem esse fortiores.

Tibi placuit fabula? Libetne eam repetere?

Academic Italian pronunciation

[ɔːlim· ɫinter'sɛ·] 'aːkwilo· et'sɔːl· | 'uːtɛr· 'fɔːrtʃjɔr· ɫ'esːɛt· | tʃɛr'tabantː· | kumviatɔːrem 'kwɛːndam· | ɫ'pɛnula a'miktum· | protʃɛ'dɛːntemː· | kɔnspek'sɛːruntː· | atːkweː | ip'sɔːrum· fɔrtʃjɔːremː· | egzisti'maːndum· ɫ'esːɛ· | kɔnsɛn'sɛːruntː· | 'kwi· λeffɪtʃɛrɛtː· | utːviator· ɫ'ilːɛː· | 'pɛːnulam· dɛ'pɔːneretː· ||

'aːkwilo· ɫ'aːutemː· | vɛemɛn'tisːime· 'fuːrɛrɛ· ɫ'tʃɛːpitː· | 'sɛdː kwɔfɔrtʃjɔːres· 'flatusː· ɛmitːɛbatː· | ɛo'artʃjus· viator· sɛtʃir'kumːdabat· 'pɛːnula· | tɛːndem· ɫ'viribus· dɛstɪːtutus· | prɔ'pɔːzɪtʊm· ɫ'suːm· | o'mizitː· || ɫ'tumː· | sɔːlː· | tʃɛːlum· ɫkla'rissima ɫuːtʃɛ· | ɪlːus'travɪtː· | 'mɔks· ɫ'veiro· | viator· ɫka'lorɛ· ˈvɪktʊs· | λ'pɛːnulam· λ'ɛgzɪwɪtː· || ˈɪtəkwe· 'aːkwiloː | ɫ'kwamvis ɪŋˈvɪtɛ· | kɔŋ'fɛsːsus· ɫ'esːtː· | λ'sɔːlem· ɛsɛfɔrtʃjɔːremː· |||

ɟ'tɪbi 'plakwɪtː· ɟ'fabula· ɟli'betne ɛamrɛ'pɛɪtɛrɛː· |||).

Classical pronunciation

[ooli· ɫinter'see·] 'ɛkɪlo· et'sool· | uːtɛr· 'fɔrtɪɔr· ɫ'esset· | kɛr'taabɛntː· | kɔwɪa'toorɛŋ 'kʃɛndɛ· | ɫ'pɛnula ɛ'mɪktum· | prɔkɛ'dɛntɛː· | kɔspɛk'seɛruntː· | ɛtʃkɛː | ip'soorũ· fɔrti'oorɛː· | ɛkˌsɪstɪ'mɛndũ· ɫ'essee· | kɔsɛ'seɛruntː· | kɪi· λeffɪkɛrɛtː· | utwɪ'aator· ɫ'ilɛː· | 'pɛnula· dɛ'pooɛrɛtː· ||

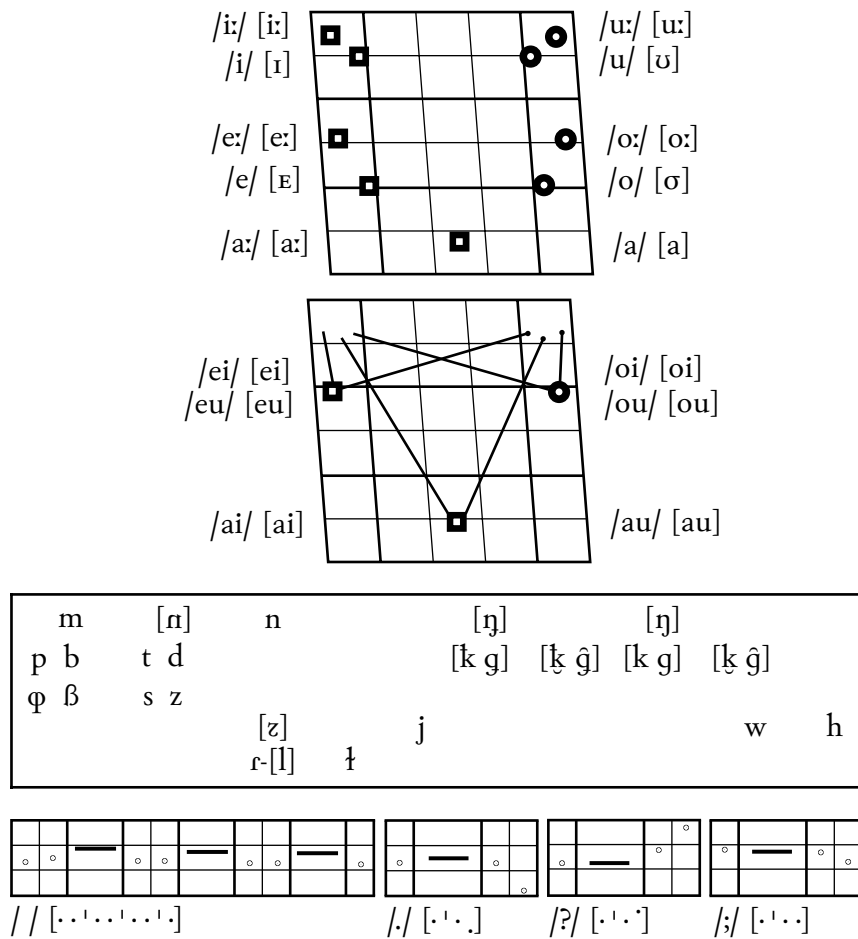
'ɛkɪlo· ɫ'ɛutɛː· | wɛemɛn'tissime· 'fuːrɛrɛ· ɫ'koɛpɪtː· | 'sɛt· kɔfɔrti'oores· 'flaatusː· ɛmitːɛbɛtː· | ɛo'ɛrtɪus· wɪ'aator· sɛkɪr'kʊndɛbɛtː· 'pɛnula· | tɛndɛː ɫ'wiiribus· dɛstɪːtuutus· | prɔ'pɔsɪtũ· ɫ'suũ· | σ'miisɪtː· || ɫ'tũ· 'soolː· | 'kɛɛlɔŋ· ɫkla'rissima ɫuukɛ· | ɫɪlus'traawɪtː· | 'mɔks· ɫ'weero· | wɪ'aator· ɫkɛ'loore· ˈwɪktʊs· | λ'pɛnulɛː· λ'ɛksuɪtː· || ˈɪtɛkɛ· ɛ'ɛkɪloː | ɫ'kɛŋwis ɪŋˈwiite· | kɔfɛssus· ɫ'esːtː· | λ'soolɛː· ɛsɛfɔrti'oorɛː· |||

ɟ'tɪbrɪ'plɛkɪtː· ɟ'faabulɛ· ɟli'betne ɛɛrɛ'pɛtɛrɛː· |||).

6. *Old Latin*, or *Archaic Latin* (Italic, IE), had five vowels, both short and long, which were phonetically nasalized before /NC, N#/ (where N is a nasal), their timbres remaining unaffected and the nasal being preserved, even before constrictives, with [n≡C]. It also had six diphthongs and length opposition for the consonants.

There were no Greek phonostylemes yet, but there was *z* /VzV/ [VzV], which later became *r* /r/ [r, z], or *Vs#* /Vh/ [Vh], eg *flozis* [ˈfɫozih] (later *floris*); also, *gn* /gn/ [gn]. The phoneme /l/ was [ɫ] before pauses, or consonants (including heterosyllabic /j/, /C#j/), or before back V (including /a, a:/), but [l] before tautosyllabic /j/, /#Cj/), or before front V; in addition, /kw, gw/ [k̥, ɡ̥, ḳ, ɡ̣].

fig 8. Old/Archaic Latin.



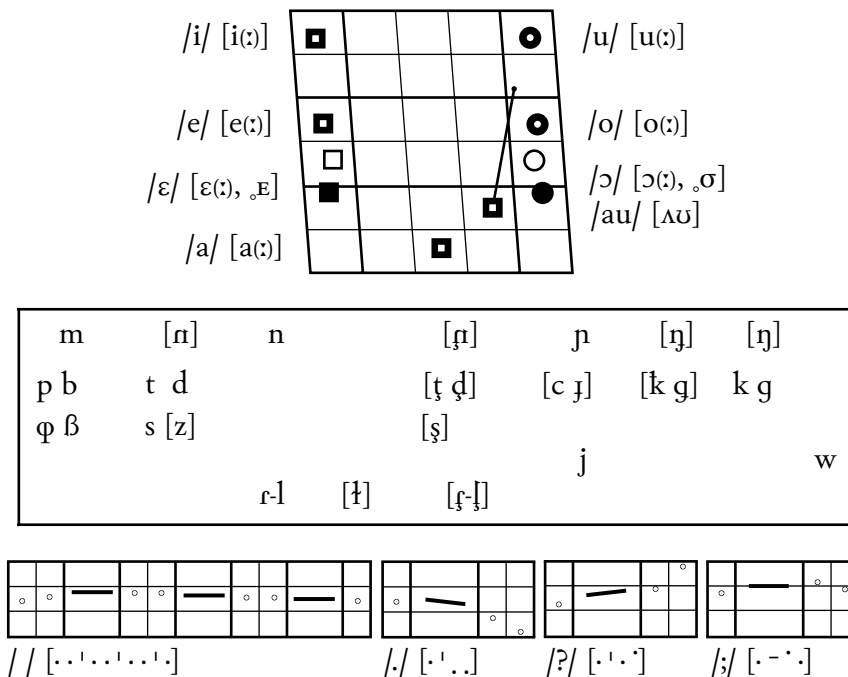
7. *Vulgar Latin*, or *Empire Latin* (Italic, IE), in its *neutral* form stemming from the central area of Italy, had seven short vowels and only one traditional diphthong, /au/ [aʊ]; all vowels were phonemically short, being phonetically lengthened in stressed free syllables. Consonant gemination was distinctive.

Many words had different stress-patterns from those they had in Classical Latin, eg *filiolum* /fiˈliolum/ → /fiˈljɔlum/ (and unstressed e, u/o followed by a vowel became /j, w/, as well), *integrum* /ˈintegrum/ → /inˈtɛɡrum/, *decadit* /ˈdeːkadit/ → /deːˈkadit/. It had /VnC/ [Ṽn≡C]), but /VN/ [Ṽ] + /f, s/, and /V#/ [V] (for vowel + final -m, where vowel timbres were unaffected); h had gone to 'zero' by this stage, even

in *ch*, *th*, *rh* (while *ph* had become /f/).

Also notice: *f*, *v*, *z*, *gn* /f, v, z, gn/ [ϕ, β, z, gn]. In central Italy, /n, t, d, s, r, l, k, g/ + /j, i, e, ε/ developed to [ɲ, tʃ, dʒ, sʃ, c, ʝ] (without absorbing the [j]) by gradual adjustments, like [tʃj, dʒj, cʝ, ʝj] → [tʃj, dʒj, kçj, gçj] → [tʃ, dʒ, kç, gç] → [ts, dz, tʃ, dʒ].

fig 9. Vulgar/Emperial Latin.



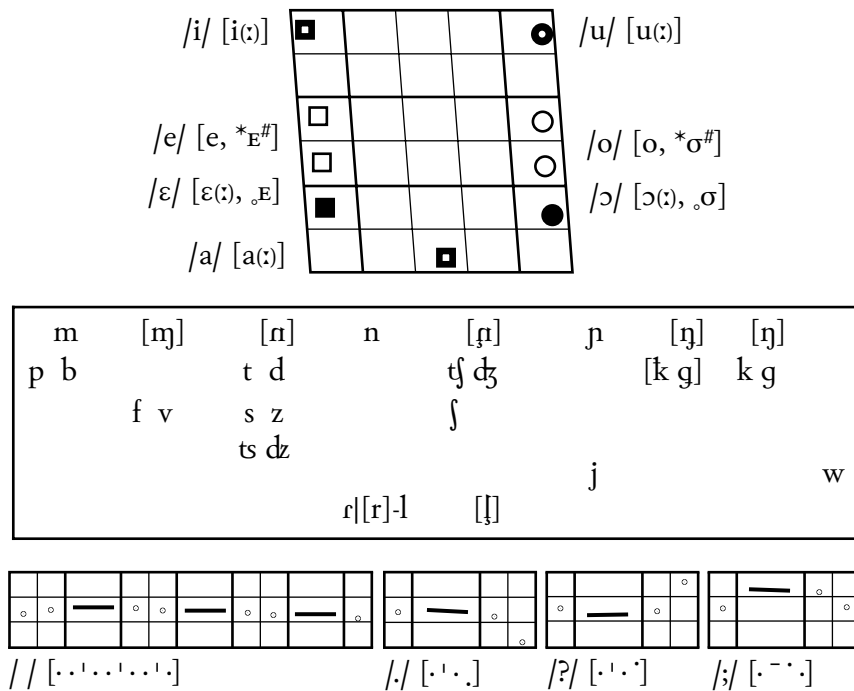
8. *Italian Academic Latin* (Italic, IE) came to have only five vowels in stressed position, /i, ε, a, ɔ, u/, *eg* even *habēre* /a'berre/ or *Rōma* /'ro:ma/ became /a'bɛre, 'rɔma/ [a'bɛ:re, 'rɔ:ma] (in spite of Italian *avere* [a've:re], *Roma* ['rɔ:ma]). Similarly to Italian, in unstressed syllables only /e, o/ [e, o] occurred, with intermediate timbres, [ɛ, ɔ], as a result of vowel adjustments of either half-opening (for final unstressed /e/, o/) or half-closing (for de-stressed /ε, ɔ/), which is typical of neutral Italian pronunciation.

Length and the various vowel sequences also correspond to those found in neutral Italian, although with *ae, oe* /'ɛ, °ɛ, °e/. It preserves CC, [n≡C], but /mC/ [mC]; it rigorously has V_sV /V_zV/; z is /dz/, and *tiV* (with unstressed *i*) is /tʃjV/, *eg* *ōtium* ['ɔts:tʃjum*] (the example shows both self-gemination, shared by /dz/, /ʃ/, *piscem* ['pi:ʃɛm*], and /ɲ/, *lignum* ['li:ɲum*], and audible release, even for /m[#]/, as can be seen). For c, g, before front vowels, we have /tʃ, dʒ/: *Cyrus* ['tʃi:rus], different from *Chiron* ['ki:rɔn].

Let us observe that the transcription given in § 5, accurately and clearly follows what we have just said, in spite of cases like *habēre* and *Rōma* seen above. Unfortunately, however, Italian speakers, even university Latin teachers, too often, pronounce Latin not exactly as it should be, according to what we have just said. In fact, they mortify its pronunciation with regional habits, both for the phonemes and intonation (including, often, stress and intonation patterns).

On the other hand, instead of (or in addition to) regional ‘deviations’, too many Italian speakers also introduce, more or less frequently, even ‘neutral Italian deviations’, which are clearly contrary to the criterion accurately established above. Of course, it might be surprising to actually say [aʰbɛːrɛ, ʰɔːmɑ], but Italian Academic Latin *is* another language, clearly different from both Classical Latin (cf § 1-5) and its most direct ‘offspring’, *ie* the current Italian language.

fig 10. Italian Academic Latin.



9. *Church Latin* or *International Latin* (Italic, IE), is similar to Italian Academic Latin, and in fact it should be pronounced exactly like it. However, in Vatican City, it is used by both Italian and foreign clergy. So, it undergoes several different interferences, not only by regional Italian accents, but also by different languages and their several regional accents, also including many different habits in speaking more or less different Academic Latins for each foreign language. Thus, the ideally expected ‘pure’ pronunciation is very rarely heard, as for Italian Academic Latin, too, as just seen.

fig 11 shows a more ‘international’ version of the vowel situation, especially as far as the e, o vowels are concerned, with less different timbres. Of course, the consonants should be realized as shown, for Italian Academic Latin, given in fig 10, but, in reality, more or less systematically, the following (and other) ‘deviations’ certainly occur, unfortunately.

As for the *vowels*, of course, the exact timbres for *i*, *e* (including *ae*, *oe*), *a*, *o*, *u*, correspond to those used in the different languages, with more or less different results. Thus, Romance and Slavic languages usually have (excepting greater and even worse differences): /i/ [i, ɪ], /ɛ/ [ɛ, ɛ, e], /a/ [a, ɐ, A], /ɔ/ [ɔ, ɔ, o], /u/ [u, ʊ]. G(erm.)

generally has /i/ [i(ː), i], /ɛ/ [ɛ(ː), ɛ(ː), e(ː)], /a/ [a(ː), A(ː), a(ː)] (even ɒ(ː)), /ɔ/ [ɔ(ː), ɔ(ː), o(ː)], /u/ [u(ː), u] (adding oe [ø:, œ] G.).

Not surprisingly, English can have the strangest possible realizations: /i/ [ii, iɪ, i; aə, əə, eə], /ɛ/ [ɛ, ɛ, e, eɪ; ii, iɪ], /a/ [a(ː), a(ː), ɐ, ʌ; æ, eɪ], /ɔ/ [ɔ(ː), ɔ(ː), o(ː), ɒ; ɑ, ɒ, ɔ, ɔɒ], /u/ [uu, uu, u; ɐ, ʌ, juu, juu].

As for the *consonants*, let start with *c* before front vowels (including *ae*, *oe*): [tʃ, tʃ̥] I., R(oum.), [s, ʃ] F., P., C(atal.), also [θ] S(pan)., [ts] G. & Sl., [s] E.; *ch*: [k], including E., but [x] G. & Slav; *g*: before front vowels (including *ae*, *oe*): [dʒ, dʒ̥] I., R. (& E.), [ʒ, ʒ, ʒ̥, dʒ, dʒ̥] F., P., C., [x, χ, h] S., [g, ɡ] G., Slav; *gn*: [ɲ(ɲ)] I., [ɲ] C., [ɲ, ɲ] P., F, [ɲ] R., E., [χɲ] S., [ɲ] Slav, [ɲ, ɲɲ] G.; *h*: [θ] 'zero' I., R., S., P., F., C., [x, h] Slav, [h] G., [h, θ] E.; *j/i*: [j] I., R., Slav, G., [ʒ, ʒ, ʒ̥] F., P., [dʒ] E., [j, j̥] Slav, G., [x, χ] S.; *qu*: [kw] I., E., [kw, k] P., S., [k] C., [kw, kv] R., [k, kw, ɥ] F., [kv] Slav, G.; *sc* before front vowels (including *ae*, *oe*): [ʃ(ʃ)] I., [stʃ̥] R., [s, ʃ] P., [s] F., E., [s, ʃ, sθ] S., [sts] Slav, G.; *ti* + unstressed vowel: [tsj] I., [tsj, sj] R., [sj] P., F., C., [sj, θj] S., [tsi] G., [ʃi] E.; *v*: [v] I., R., P., F., [β, b] S., C., Slav, G., [v, w] E.; *x*: [kstʃ̥, kstʃ̥] I., R., [ks] C., E., [ksts] Slav, G., [gz, ks] F., [s, sθ] S., [s, ʃ, ʃ̥] P.

Of course, also intonation patterns vary a lot, as even stress patterns, although trying to follow 'known' instructions.

fig 11. Church/International Latin.

