

Greek (from ancient to modern)

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1.1. *Ancient Greek* (Hellenic, IE), or *Classical Greek*, had five vowels, both short and long (actually monotimbric diphthongs), with different qualities, as well as the thirteen phonemic diphthongs given in the second vocogram. Their nature and quality result from comparisons between the different (often conflicting) opinions of present-day and past scholars, as also from loanwords in Greek (and from Greek), including those from central and eastern Asia languages.

1.2. Considering the importance the Greek language has had for Western culture, we present here a list of the graphemic correspondences (including their transliteration), which should be of help to those who do not know (yet) the Greek alphabet. Some numbered notes follow, with explanations and some useful examples, although these phonosyntheses are quite concise.

α	<i>a</i>	[ɐ] /a/	ν	<i>n</i>	[n] /n/
	<i>a/ā</i>	[a(a)] /aa/ ¹	ξ	<i>ks</i>	[ks] /k+/s/
ε	<i>e</i>	[e] /e/	π	<i>p</i>	[p] /p/
η	<i>ē</i>	[ɛ(ɛ)] /εε/ ¹	ρ	<i>r</i>	[r] /r/
ι	<i>i</i>	[ɪ] /i/	ρ̣	<i>hr</i>	[hr] /h+/r/ (<i>rh</i>)
	<i>i/ī</i>	[i(i)] /ii/ ¹	σ/ς	<i>s</i>	[s] /s/ (word-finally, ς)
ο	<i>o</i>	[o] /o/		<i>s</i>	[z] /s/ + β, γ, δ;
ω	<i>ō</i>	[ɔ(ɔ)] /ɔɔ/ ¹		<i>s</i>	[z] /s/ + λ, μ, ν, ρ
υ	<i>y</i>	[ɥ] /ɥ/ (←[u]) ²	τ	<i>t</i>	[t] /t/
	<i>y/ȳ</i>	[ɥ(ɥ)] /ɥɥ/ ⁰ (←[uu]) ²	φ	<i>ph</i>	[ph] /p+/h/
β	<i>b</i>	[b] /b/	χ	<i>kh</i>	[kh] /k+/h/
γ	<i>g</i>	[g] /g/; <i>g</i> [ŋ] /n/ + μ, ν (but γν-, <i>gn</i> - [gn] /gn/);	ψ	<i>ps</i>	[ps] /p+/s/
	<i>n</i>	[ŋ] /n/ + γ, κ, ξ, χ;	⸰		[∅] / / 'zero'
δ	<i>d</i>	[d] /d/	⸱	<i>h</i>	[h] /h/
ζ	<i>z</i>	[z, VzzV] /z, zz/ (←[dz]←[zd]) ²	ˊ	ˊ	[ˊ] /ˊ/ (mid level tone)
θ	<i>th</i>	[th] /t/ + /h/	ˋ	ˋ	[ˋ] /ˋ/ (low level tone)
κ	<i>k</i>	[k] /k/	ˋ	ˆ	[ˋ] /ˋ/ (mid-to-low falling tone)
λ	<i>l</i>	[l] /l/	ˋ	ˆ	[ˋ] /ˋ/ (low level tone).
μ	<i>m</i>	[m] /m/			
Υ	<i>Vi</i>	[VV] ³ : α, ā (<i>āi</i>) [aai] /aai/ (→[aa]); η, ē (<i>ēi</i>) [ɛɛi] /εεi/ (→[εε]); ω, ō (<i>ōi</i>) [ɔɔi] /ɔɔi/ (→[ɔɔ])			
Υι	<i>Vi</i>	[Vi] /Vi/: αι, <i>ai</i> [ɛi] /ai/; οι, <i>oi</i> [oi] /oi/; υι, <i>yi</i> [ɥi] /ɥi/; but ει, <i>ei</i> [ɛi] /ei/ ²			
Υυ	<i>Vu</i>	[Vu] /Vu/: αυ, <i>au</i> [ɛu] /ɛu/; ευ, <i>eu</i> [eu] /eu/; ᾠυ, <i>āu</i> [aau] /aau/; ηυ, <i>ēu</i> [ɛɛu] /εεu/; ωυ, <i>ōu</i> [ɔɔu] /ɔɔu/; but ου, <i>ou</i> [ɔu] /ɔu/, which is the natural phonetic way of showing what different scholars describe as corresponding to /oo, ou, uu/, by optimizing the articulatory space in the vocogram) ²			

gram) were: [ij, uw], ie V_iV V_iV [VijV]: [eijV, oijV, ɛijV]; with εiV eiV [eijV]: πλειός *pléios* [ˌplɛi.jos]. Also: VuV VuV [VuwV]: [ɛuwV, euwV, εεuwV, ɔuwV]; with ouV ouV [ɔuwV]: βουλεύω *bouléuō* [ˌbuuˈleu.wɔ].

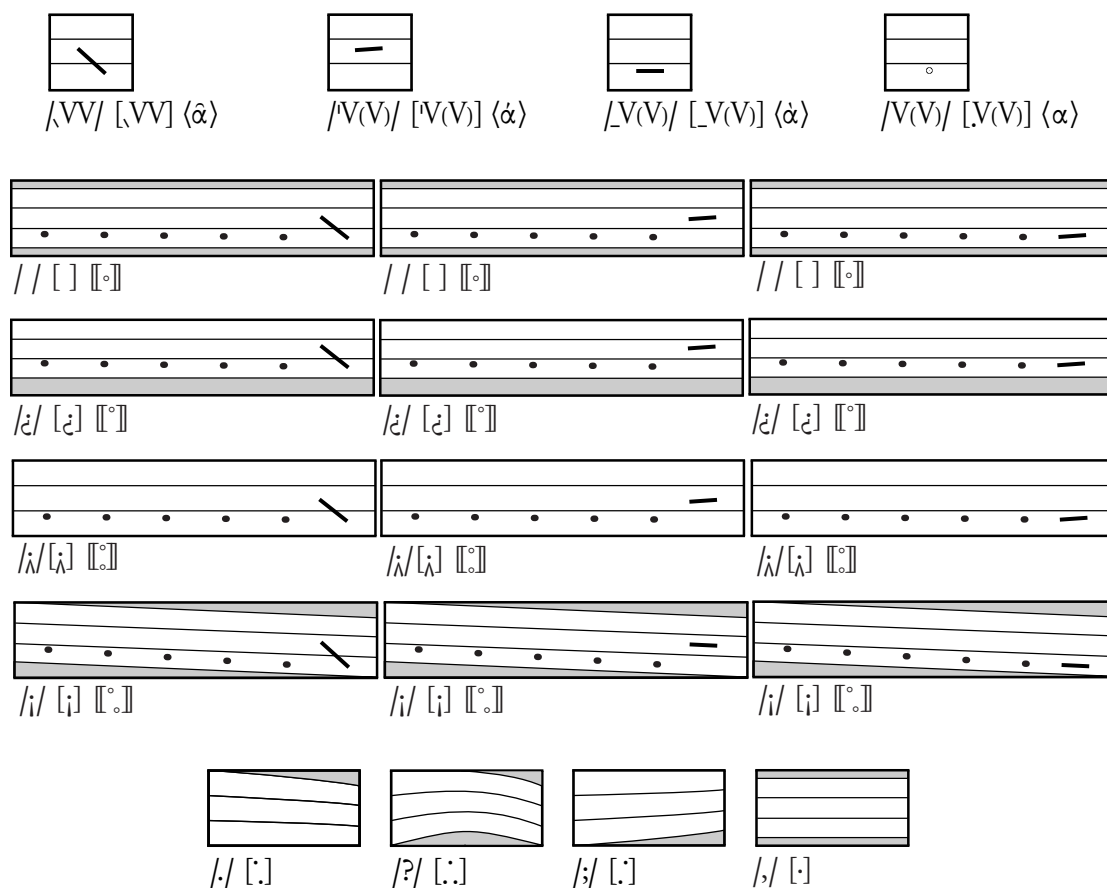
Whereas, word-initially or after consonants, consonantal ι, υ, ου were: (C)ιV, (C)υV, (C)ουV (C)iV, (C)ɣV, (C)ouV [(C)jV, (C)ɰV, (C)wV]: βιός *biós* [ˈbjos] ‘life’ – cf βίος *bíos* [ˈbrios] ‘bow (the weapon)’.

In *diphthongs* the accent mark –much like the possible *breathing* (either ‘rough’, ‘h [h] /h/, or ‘smooth’, ‘ [∅] / /)– is marked on the second element, even though it goes without saying that phono-tonetically (as also in its transliterated form) it is on the first one: αἶμα *hâima* [ˌhɛi.mɛ]. Usual spelling does not distinguish between short ([ɐ, ɪ, ɛ]) and long ([aa, ii, ɰɰ]): α, ι, υ.

To end with, θ, φ, χ are voiceless ‘aspirated’ stops; but when in sequence, only the second is ‘aspirated’: διφθογγος *díphthongos* [ˈdip.tʰon̩.gos, ˈdip.tʰon̩.gos] (colloquially, most probably, they often became [φ, θ, x]). Notice also that, except for γγ *ng* [ŋg], doubled consonants were truly geminated (as ζ also was [zz], between vowels): βάλλω *bállō* [ˈbɛl.lɔ], ἵππος *híppos* [ˈhip.pos], περιζῶμα *perízōma* [ˌpeˈɾiz.zɔ.mɛ].

1.4. The tonetic illustrations which follow explain the nature of the Greek *accent*. It combined stress (ie intensity) and pitch (ie tonality). Words with a circumflex written accent had a falling movement from a mid pitch to a low one, as shown. Those with an acute written accent had a mid pitch, very slightly ascending. The words with a grave written accent had a low pitch.

All these tonetic movements were superimposed on the dotted lines shown in



the (larger) tonograms, giving the unmarked four protunes, with theoretically all unaccented syllables. Of course, they modified those overall structures, by partially raising their pitch on their last syllable.

The first four tonograms show this change with the circumflex accent, [] /| ^, while the middle four ones show it with the acute accent, [] /| ' ; the last four ones show it with the grave accent, [] /| `.

The four tonograms at the bottom of the tonetic illustration show the realizations of the four tunes, with their clear movements, which further modify the tonetic structures just seen.

Some considerations about spelling, pitch, music, verse, other literary dialects, and numerals.

1.5. Since we live and do phonetics in the third millennium, what will follow is thought to be necessary, in order to solve and resolve scientifically the problem of spelling and pronunciation.

Unfortunately, the Middle Ages are famous both for their serious studies and absurd rigmaroles, with incredible officialdom and many useless productions.

Sadly enough, in Grece nothing happened similar to what *Pāṇini* did, in ancient India, in earlier times, for rather scientific phonetics. The Greeks did know an ancient letter, which was quite suitable for an adequate representation of their phoneme /h/: Ϝ, ϝ.

But it seems that they were not sufficiently smart as to use that letter conveniently: as a normal consonantal letter. Instead, they 'preferred' not to indicate their phoneme, which –it is true– was rather marginal, almost a second-hand consonant.

When /h/ definitely disappeared from the Greek language, and its spelling was fixed by people who did not have it in their language, nor had a clear idea of what it actually could be, it was again considered as something less important than a real consonant, either phonically or graphically.

As a matter of fact, in verse, both Ϝ and ϝ, Ϝ, ϝ, χ had no legitimate place as real phonemic segments, as on the contrary they certainly are: [h], [ph, th, kh]! So, absurdly, initial /h/ was not considered to be a true consonant (both phonically and graphically), but some kind of unfortunate feature belonging to the vowels, calling it *rough breathing*. In fact, in compounds, when /h/ was at the beginning of the second element, it was dropped: ἔξοδος [ek.so.dos], from ὁδός [h.o.dos].

1.6. Thus, instead of using a convenient and economical consonant (like Ϝ, ϝ, or any other), a highly inconvenient diacritic was put over lower-case vowels: Ϝ (for all seven vowels). Of course, it was also to be combined with the three kinds of accent, giving Ϝ, Ϝ, Ϝ – again, for all vowels, including the three ones with the *iota subscript*: Ϝ.

As already hinted at above, although ϝ, Ϝ, ϝ were certainly [ph, th, kh], however, in verse, they were degraded to something like simple [p, t, k], and written with simple letters, instead of: πϝ, τϝ, κϝ (more scientifically, indeed).

And what is more, as if not enough damage had already been done, they also

‘invented’ the extremely useless *smooth breathing*, meant to indicate the absence of the *rough* one. But, in case, to indicate a phonic ‘zero’, [∅] (or simply [], certainly not [ʔ], which might have required a true consonantal phonic –and perhaps also graphic– segment), they should have used Ͱ, ͱ, which they already had in previous times.

So the number of combinations of vowels and diacritics was doubled, quite unnecessarily. Luckily, upper-case vowels were not ‘sentenced’ the same way. In any case, there are 112 useless combinations of vowels and inconvenient diacritics!

1.7. However, the unfortunate and unhappy story of the Greek spelling is not ended. In fact, although phonic diphthongs are quite clearly stressed on their first vowel element, like [ai] (*ie ái*), they are ‘ingenuously’ written like *ái*, as if they were actually [aí]!

In modern Greek, although now only the acute accent is written, the current spelling still uses such an inconvenient way of showing the stress. Let us consider a simple example, in modern Greek, where a word like [kaθaˈrɛvʊsa] is still amazingly written *καθαρεύουσα* (with an accent over what is now a consonant).

1.8. The medieval bureaucratic obsession also brought scholars to put a grave accent on any unaccented syllable, thus, producing sequences of such grave accents. Later on, however, the grave accent was only put on the final syllable in given known cases.

Of course, in accurate phonotonic transcriptions, any unstressed syllable must be indicated by means of a low dot, because they are uttered on a low pitch. This tonetic structure is somehow similar to that of Japanese, where (in addition to pro-tune and tune modifications, as in Greek, too) two essential pitches are used: *low* and ‘non-low’, which is *mid*, not ‘high’ as it is still called and described.

So, a tone mark like [˘] is certainly excessively too high, while [˙] (*ie* [˘-]), not to be confused with ‘-’, *ie* a normal hyphen) is the one to be used.

When the Greek acute accent is described as the movement from a low pitch to a ‘high’ one, it has to be interpreted as a movement from low to *mid*, but not on the same syllable, even if long, so certainly neither [˙] nor [˘].

Instead, it means that from a low-pitched unstressed syllable [˘] the voice raises to the mid-pitched stressed syllable [˙] (*ie* [˘-]), again) for the acute accent, [˙˙] (*ie* [˘-˙]). On the other hand, for the circumflex accent the movement is from the mid pitch falling to the low one, within the same syllable, [˘˘].

Arguably, it would be extremely ridiculous to pass to a true high pitch in Japanese. So, even in Greek, the real pattern must be within the unmarked low pitch band to the marked mid one (as shown in our tonograms), either steady, [˙] (*ie* [˘-]), or falling [˘˘].

1.9. As a matter of fact, those ‘experts’ who made Greek recordings using high pitches, believing to be actually reproducing what it was, in reality, made fools of themselves. It is sufficient to quickly listen to some of the cartoon-like recordings made by Stephen G. Daitz, who passed for a renowned celebrated model to be followed.

In Greek, as in Japanese, the high pitch band is exclusively used for *intonation*, which is superimposed to pitch accents, for the interrogative and suspensive tunes, or for some paraphonic reasons.

Arguably, as Greek verse was generally accompanied by *music*, certainly with wider tonal movements than in real spoken language (otherwise it would be almost useless), we may consider ‘normal’ to deform and distort utterances in order to follow the musical pattern.

It is the same even in modern contemporary songs, with (even considerable) segmental lengthenings, to say nothing about opera, where some phonemes may be completely ignored, as the distinction between Italian /e, ε/ and /o, ο/.

But, to insist in believing that real ancient Greek had to be practically ‘sung’ is something which nobody can actually trust.

1.10. Passing to some requirements (very queer, indeed) that *verse* demand, in order to ‘satisfy’ metrical patterns (although completely unfamiliar in comparison with actual true language), let us consider, now, some of the forced deviations from normality.

Of course, they were accurately classified and named, otherwise –certainly– they could not be imposed, as if they were actually necessary.

So, when true language did not match with *metrical structures* (real superstructures, indeed), *dieresis* was introduced, as when normal παίς [ˈpɛis], had to be deformed into πάϊς [ˈpɛːis].

On the contrary, when there were too many ‘syllables’, while just one could be accepted, *synizesis* had to be invented, as when μῆ οὐ [ˈmɛu], had to be made to seem monosyllabic (as if it was not already such).

Let us end with *syneresis*, when words like θεοί [ˈthɛoi] or πόλεως [ˈpɔlɛɔs] had to be passed off as monosyllabic or bisyllabic, respectively, having to introduce new consonantal taxophones, as in [ˈtʰɔi, ˈpɔlɔs] (and [ɣ, ω] for ‘consonantalized’ [a, o], α, ο: [ɣi, ωi]).

Of course, in Natural Phonetics, πόλεως [ˈpɔlɛɔs] is already bisyllabic. As in θεοί [ˈthɛoi], the -αι and -οι endings of the imperative (τίμησαι [ˈtɪmɛsɛi]) and infinitive (τιμῆσαι [ˈtɪmɛsɛi]) forms had to be considered as short (with [ɣi]), while the optative form (τιμήσαι [ˈtɪmɛsɛi]) ‘remained normal’.

Frankly, it must be said that, if those endings were really different, in the long history of grammatical Greek treatises, a way to show that fact would certainly have been devised (however crazy, as so many others).

1.11. However, it is true that, in singing verse with music, as a form of art in the ancient world, long vowels were certainly pronounced as diphonic diphthongs even when unstressed, [ii, εε, aa, oo, uu], not as [i, ε, a, o, u] (as in real spoken language, where they still remained different from their short counterparts, [ɪ, e, ɐ, ɔ, ʊ]).

We must add that a language like ancient Greek certainly *syllabified* its words in a more natural way than the verse ‘rules’ would make us believe, including in word formation.

Thus: πόνος [ˈpɔnos], τιμάω [ˈtɪmaɔ], ἀπ’ ἐμοῦ [ˌɛ.pɛ.mɔu], ἀγγέλλω [ˌɛŋˈgɛl.lɔ],

πένθος [ˈpe̞n̩.θos], πότμος [ˈpot̩.mos], ἀκτίς [ˈek̩.t̩is], πέφασμαι [ˈpe̞.φhez̩.m̩ei], βλάπτω [ˈbl̩ep̩.t̩ɔ], δάκνω [ˈd̩ek̩.nɔ], μιμνέσκω [ˌmim̩ˈnes̩.kɔ], ἄρκτος [ˈer̩k̩.t̩os], Βάκχος [ˈb̩ek̩.k̩hos], Σαπφώ [ˌs̩ep̩ˈphɔɔ], συνέρχομαι [ˌs̩ɐ̞ˈner̩.k̩hos̩.m̩ei], ἐξετάζω [ˌek̩.s̩et̩ez̩.zɔ], ἐπράχθη [ˌe̞ˈpr̩ek̩.the̞, ˌe̞ˈpr̩ex̩.the̞], ἐθρέψασθε [ˌeth̩ˈrep̩.ɐs̩.the̞], γέγραφε [ˈge̞ˌgr̩ep̩.the̞, ˈge̞ˌgr̩ep̩.the̞], τεθνέξω [ˌt̩eth̩ˈnek̩.sɔ], ἐσθλός [ˌest̩h̩los̩].

1.12. The *Greek literary dialects* had always been a kind of artificial languages. In fact, the ‘dialects’ used by all authors did not depend on their ethnic origin, but on the literary genres they chose.

Therefore, the *Attic dialect* was used for *prose, philosophy, oratory, historiography, and theatrical dialog*. The *Ionic dialect* in *elegy, epigram*, and (together with the *Aeolic dialect*) in *monodic lyric*. The *Doric dialect* in *choral lyric* and lyrical parts of *tragedy and comedy*. Here are some of the most peculiar phonic differences between these literary dialects.

While *Attic* changed former /uu, u/ into /u̯u̯, u̯/ (where /uu, u/ derived both from /ou/ and contracted or compensatory lengthened /oo/, but were still different from /ɔɔ/), other dialects kept /uu, u/. In addition, Attic maintained /h/, while, for former /VssV/ it had three possibilities: /VssV, VsV, VttV/.

Generally, *Ionic* changed /uu, u/ into /u̯u̯, u̯/, /o/ into /ou/, but /ei/ into /e/; it often lost /h/, while, for former /VssV/ it had two possibilities: /VssV, VttV/, and geminated /m, n, l, p, t, s/ for metrical reasons.

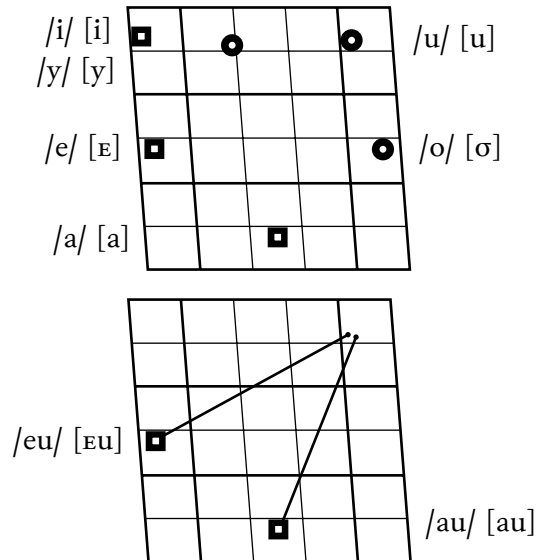
Aeolic changed /ei/ into /εε/ (sometimes into /ii/); contracted /ee/ and /oo/ became /εε, ɔɔ/, while original /εε/ was generally replaced by /aa/ and /ou/ by /uu/. It completely lost /h/, while keeping former word-internal [zd].

Doric changed original /ei, ou/ into /ee, oo/; it often had /aa/ instead of /εε/, and sometimes [j̥, j̥o] instead of /ea, eo/ for metrical reasons. Besides, it kept [zd, ss].

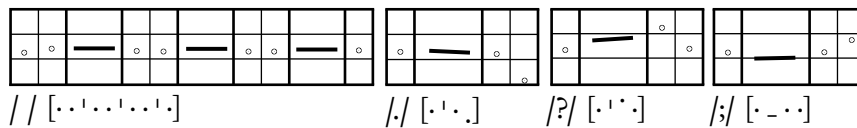
1.13. Now, a note about the way of representing *numerals* in ancient Grece is thought to be necessary. Philosophy, astronomy, and all possible arts (except cinema and music recording, of course) were certainly treated deeply, even mathematics and geometry.

But, let us state frankly that the way in which numbers were written is decidedly far from ideal. It is also undeniably true that, in the Roman world, numbers were shown in an even worse way...

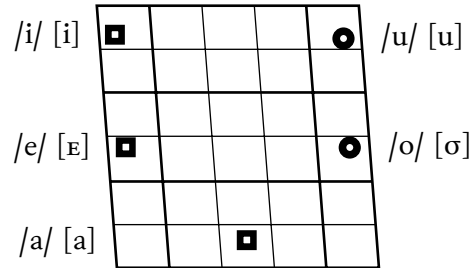
2. *Hellenistic Greek* (Hellenic, 1E) had six short vowels and two diphthongs (which had not become /af, av; ef, ev/ yet). It had the given xenophonemes (in round brackets) for loanwords, the sequences /ps, ts, dz, ks/, and [n≡C]. There was no prenasal voicing yet, and the (ancient) tonemes had disappeared, but the opposition C ≠ CC was preserved.



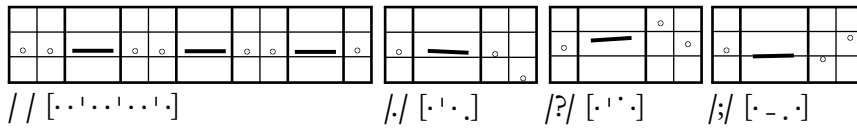
m	[m̥]	[n]	n	[ŋ]	[ŋ]
p (b)		t (d)		[k̥ (g)]	k (g)
	f v	θ s̥ z̥		[x̥ ʃ̥]	x ʃ
		[l]	r-l	j	



3. *Byzantine Greek* (Hellenic, 1E) only had the five short vowels typical of present-day Greek. It preserved three xenophonemes and presented some palatalized consonant taxophones. After nasals, diphonic consonants were already voiced /NÇ/ [NÇ], with [n≡C]. Consonant gemination had been lost, and αυ, ευ were already like they are in present-day Greek, ie sequences of /VC/ [Vf, Vv].



m	[m]	[ɱ]	n	[n]	[ɲ]	[ŋ]
p (b)		t (d)			[ç ʝ]	k (g)
	f v	θ s	ð z		[ç ʝ]	x ɣ
		[l]	r-l	[ʎ]	j	



4. *Italian 'Academic' Greek* (Hellenic, IE) came to have six vowels in stressed position, /i, ε, a, ɔ, u, y/ (invariably with /ε, ɔ/, even in /εi, εu, ɔi/). Apart from ou /u/, all other graphic diphthongs (and vowel sequences) are also phonic diphthongs, by juxtaposition: /ai, au, yi/; η, α, ω are simply /ε, a, ɔ/. But, much like in Italian, we find [e, o] in unstressed syllables, with intermediate timbres, [ɛ, σ], because of the vocalic adjustments of half-opening (for /e|, .o|/) or half-closing (for /°ε, °ɔ/, cf *HPr* § 3.1.1).

Length and vocalic sequences also correspond to those found in neutral Italian; CC are rendered as /CC/, and [n≡C]. The grapheme σ is invariably /VzV/, eg βασιλεύς [bazi'lɛus]; ζ is (self-geminating) /dz/ and γ is always /g/ [g, ɣ]; φ, θ, χ are /f, θ, x/ (with [ç] before front vowels, and self-geminating [tʃ], as a common 'easier' variant for /θ/ [θ]); ψ, ξ /ps, ks/ are preserved. A phonic zero corresponds to 'rough breathing' (´), but some people may choose to insert /h/ (or, less well, [ʔ]).

/i/ [i]	■	●					/u/ [u]
/y/ [y]							
/e/ [e]	□						/o/ [o]
/°ε, .e */ [ɛ]	□						/°ɔ, .o */ [σ]
/ε/ [ɛ]	■						/ɔ/ [ɔ]
/a/ [a]				■			

m	[m]	[n]	n	[ŋ]	[ŋ]
p	b	t	d	[k (g)]	k g
			dz		
	f	θ s z		[x ɣ]	x
				j	w
		[l]	r [r]-l		

◦ ◦ — ◦ ◦ — ◦ ◦ — ◦	◦ — ◦ ◦	◦ — ◦ ◦ ◦	◦ — ◦ ◦ ◦
/ / [· · · · · · · · · ·]	/ / [· · · ·]	/ʔ/ [· · · ·]	/:/ [· · · ·]

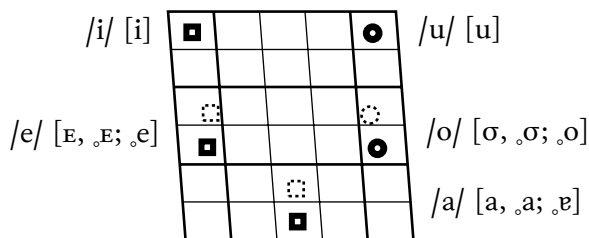
6. *Modern Greek* (Hellenic, IΕ) has only five vowels, with no length opposition; non-high vowels may be more raised when unstressed; whilst, unstressed /i, u/ tend to be voiceless when final or between voiceless consonants. Phonetic length has a semichrone in internal unchecked syllables, [V[#]]. There can be diphthongs, as in τσαι /'tsai/ [tʃai]. It has voicing assimilation for /N/ + voiceless stops or stop-strictives, which become voiced, as can be seen below, in the grapheme section. In loanwords, internal NC sequences are /C̣/ or /NC̣/, according to their original forms; besides, [n≡C]; /mj/ [mj; mɲ]; /C̣j/ [C̣j].

Those who studied Ancient Greek in Europe, with their ‘academic’ pronunciations, in passing to modern Greek, will find only scanty similarities for vowels and consonants; had they studied it following a ‘classical’ pronunciation, they would have had further problems. It would be interesting to compare the types of pronunciation given above: ancient, hellenistic, byzantine and Italian or English academic.

Spelling: *vowels* – α /a/ [a], αυ /av, af[#], afC̣/, αι and ε /e/ [ɛ], ευ /ev, ef[#], efC̣/ (ευ-ρω /ev'ro/ [EV'rɔ]), ει and η and ι and οι and υ and υι /i/ [i], ο and ω /o/ [ɔ], ου /u/ [u]; *consonants* – μ /m/, ν /n/, υιV /njV/ [ɲV] (not in υιC, υι# = /ni/ [ni]; while [ɲi] is a regional pronunciation); π /p/, τ /t/, κ /k/ [k] ([c] + /i, e/ and in /kj/); μπ /[#]b, -mb-/, ντ /[#]d, -nd-/, γκ (and γγ) /[#]g, -ng-/ [g, ŋg] ([ɣ, ɲɣ] + /i, e/ and in /gj, ngj/); φ /f/, θ /θ/, σ (ς#) /s/ [s] ([z] + voiced C), χ /x/ [x] ([ç] + /i, e/ and in /xj/); β /v/, δ /ð/, ζ /z/ [z], γ /ɣ/ [ɣ] ([j] + /i, e/ and in /ɣj/ [j], γιV).

Besides: τσ /ts/ [ts], τζ /dz/ [dz]; ρ /r/ [r], λ /l/ [l], λιV /ljV/ [lV] (not in λιC, λι# = /li/ [li]; while [li] is regional); ψ /ps/ [ps], ξ /ks/ [ks]; μφ, ν#φ /nf/ [ɲf], μβ, ν#β /nv/ [ɲv], ν(#)δ /nð/ [nð], ν(#)θ /nθ/ [nθ], ν(#)χ /nx/ [ɲx] ([ɲç] + /i, e/ and in /nxj/); ν#π /mb/, ν(#)τ /nd/, ν(#)κ /ng/ [ɲg]; ν#τσ /ndz/ [ndz]; ν#ψ /mbz/ [mbz], ν#ξ /ngz/ [ngz].

CιV /CjV/ [CjV, C̣jV]; VιV /VɣjV/ [VjV]; #ιV /#jV/ [#jV]; as already said, γ + /i, e/ is invariably /ɣ/ [j]; in addition, γι + /a, o, u/ is /ɣj/ [j] (coinciding phonetically, by assimilation, as for all velars + /j/; positing a phoneme ‘j’ is not appropriate: άγιος /'aɣjos/ [a'jɔs]). Single /C/ [C] correspond to written geminates.



m	[m]	[ɲ]	n	[ɲ]	[ɲ]
p b		t d	τς dz	[c ɟ]	k g
	f v	θ ð	ς z	[ç j]	x ɣ
		[l]	r-l	j	[ʎ]

