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**Ancient Greek Pronunciation & ‘Modern’ Accents**  
*Applications of the Natural Phonetics & Tonetics Method*

With counseling by Fernando Maggi

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0. Preliminary observation on Ancient Greek pronunciation

0.1. Ancient or ‘neutral’ Classical Greek (5-4th c. BC, used by Plato & Aristotle), 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-Asian languages.

The Greek alphabet

0.2. Here, a transliteration is added to simplify things, especially for beginners. Some numbered notes follow, with explanations and some useful examples, although rather concisely.

<table>
<thead>
<tr>
<th>Greek</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>α a</td>
<td>[v] /v/</td>
</tr>
<tr>
<td>α/ă</td>
<td>[a(ă)] /aa/</td>
</tr>
<tr>
<td>ε e</td>
<td>[e] /e/</td>
</tr>
<tr>
<td>η ē</td>
<td>[ε(ē)] /ε/</td>
</tr>
<tr>
<td>ι i</td>
<td>[i] /i/</td>
</tr>
<tr>
<td>i/i</td>
<td>[i(i)] /ii/</td>
</tr>
<tr>
<td>ο o</td>
<td>[o] /o/</td>
</tr>
<tr>
<td>ο/ȯ</td>
<td>[ɔ(ɔ)] /ɔ/</td>
</tr>
<tr>
<td>υ/υ</td>
<td>[u(u)] /uu/ (-[uu])²</td>
</tr>
<tr>
<td>β b</td>
<td>[b] /b/</td>
</tr>
<tr>
<td>γ g</td>
<td>[g] /g/</td>
</tr>
<tr>
<td>δ d</td>
<td>[d] /d/</td>
</tr>
<tr>
<td>ζ z</td>
<td>[dz, Vdz] /dz/ (-[zd, zδ])²</td>
</tr>
<tr>
<td>θ th</td>
<td>[th] /t/ + /h/</td>
</tr>
<tr>
<td>κ k</td>
<td>[k] /k/</td>
</tr>
<tr>
<td>λ l</td>
<td>[l] /l/</td>
</tr>
<tr>
<td>μ m</td>
<td>[m] /m/</td>
</tr>
<tr>
<td>Ν n</td>
<td>[n] /n/</td>
</tr>
<tr>
<td>ξ ks</td>
<td>[ks] /k/ + /s/</td>
</tr>
<tr>
<td>π p</td>
<td>[p] /p/</td>
</tr>
<tr>
<td>ρ r</td>
<td>[r] /r/</td>
</tr>
<tr>
<td>φ rh</td>
<td>[r] /r/</td>
</tr>
<tr>
<td>ρρ rrh</td>
<td>[rr] /rr/</td>
</tr>
<tr>
<td>σ, -ς s</td>
<td>[s] /s/ (word-finally, ζ)</td>
</tr>
<tr>
<td>τ t</td>
<td>[t] /t/</td>
</tr>
<tr>
<td>φ ph</td>
<td>[ph] /p/+ /h/</td>
</tr>
<tr>
<td>χ kh</td>
<td>[kh] /k/+ /h/</td>
</tr>
<tr>
<td>ψ ps</td>
<td>[ps] /p/+ /s/</td>
</tr>
<tr>
<td>n [n] /n/ + γ, χ, ξ, χ</td>
<td></td>
</tr>
<tr>
<td>h [h, VfiV] /h/</td>
<td></td>
</tr>
<tr>
<td>[0] / / ‘zero’</td>
<td></td>
</tr>
<tr>
<td>[] / / (mid level tone)</td>
<td></td>
</tr>
<tr>
<td>[] / / (low level tone)</td>
<td></td>
</tr>
<tr>
<td>[.] / / (mid-to-low falling tone)</td>
<td></td>
</tr>
<tr>
<td>[.] / / (low level weak tone)</td>
<td></td>
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Ancient Greek Pronunciation

8 Ancient Greek Pronunciation

timbres, liable traces or records of it have been found). ed after ‘less sequence, nated by metathesis. In spite of its being ‘intrinsically’ voiced (structurally, a voice-

also (even pedantic, indeed): ‘wrongly considered as being unitary phonemes because of their di‡erent spelling.

1 Unstressed ‘long’ vowels become short monophthongs, keeping their normal

2 At earlier times these vowel timbres and the articulation of ζ as were indicated after ‘←’, [dz] /dz/ (not a stopstricitive, [dz]), from a former [zd, zð] /zd/, origi-
nated by metathesis. In spite of its being ‘intrinsically’ voiced (structurally, a voice-

3 On the other hand we get: ˘Α (for ˘Α; different from Α, α’, but worse than a more desirable ˘Α, together with ˘Η, ˘Ω, &c)... In fact, η-η, ϑ-ϑ, ζ-ζ, ω-ω, were still ‘long’ diphthongs, as shown: [a(α)j, ε(ε)j, ϑ(ϑ)j]; but, if followed by a vowel, ( ) stood for ( ) [j, j], as in: ραξον hrαiον [raaɔon], κληω klεjо [kleεjɔ], πατριως patrιoς [pe,trɔς], τω ριτι τοι ριτи [tɔjɔn ti]. For [j, j, ϑ], see § 3.9-10. Also see § 3.15 for [j, j, ϑ], and their succeeding developments.

0.3. Arguably (and with reference to what is said under note 3, too), a language alphabet is one thing, but its phonology (& phonotronics) is another quite different thing. So, it would be clearly absurd to insert, among the true phonemes, something like ‘unitary phonemes /ps, ks, dz/’.

The same is true of θ, φ, χ, which are defined as voiceless ‘aspirated’ stops, and wrongly considered as being unitary phonemes because of their different spelling.

When in sequence, both can be ‘aspirated’, mostly in (excessively) careful speech (even pedantic, indeed): διφθωγγος διφθωγγος [dipth,thonj,os, ‘diph-] (colloquially, also [φ, θ, χ] were possible, and better: [dipth,thonj,os]), with ‘normal’ (intermediate) [dipth,thonj,os], and so on.

Thus, in our consonant table, we certainly prefer not to place either /dz, ps, ks/, or /ph, th, kh/ (or /p(h)/ &c), any more. In fact, all these clusters are simple consonant sequences, not any ‘divine revelation’. They are not different from, for instance, /pr, pl, pn, kt, st/ &c.

Notice also that, except for γγ ng [ŋŋ], doubled consonants are truly geminated: βάλλω bállo [bel,lɔ], ἵππος hippos [hir,p,os] (or περίζωμα perίzōma [pe,ridzɔ,me], in colloquial pronunciation, instead of neutral [pe,ridzɔ,me]).
0.4. Besides, we had Vi, Vi [Vi] and Vu, Vu [Vu] with independent i, u (also stressable, áκοσω aissò [ristis]): ἵππον hirēion [hi'reei'ion], ἀντίμη aymē [naut'mee].

In addition, intervocalic /i, u/, ie ViV ViV (in /Vi, Vu/ + /V/ sequences, as we will see in the vocograms of (3) were: [ViV, VuωV] ie [eiV, eiV, oiV, eiV]: πλείος plesios, [plei¬
os]. Also: VuV, VuV [VuωV]: [uuωV, euωV, eeωωV, oωωV] (with ouV, ouV [uuωV], too): βουλεῖον bouleuo [bu'leuω].

In diphthongs the accent mark –much like the possible breathing (either ‘rough’, (疗程 h [hiV, #hiV] /h/, or ‘smooth’, (疗程 [θ] /)– 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: αίμα haima [haima].

As we know, unfortunately, usual spelling does not distinguish between short ([v, i, u]) and long ([aa, ii, uu]): α, i, u.

0.5. Of course, in the appropriate chapters, everything will be explained and illustrated about vowels, consonants, stress, tonemes, intonation, with complete phono-tonetic transcriptions.

0.6. 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.

Of course, some classicists, or classical philologists, ‘classically’ tied to century-old traditions (if not even thousand-year-old ones), might surely turn up their learned noses at our beliefs.

Too often, ‘specialists’ keep on trying to describe traditionally ‘inherited things’, without resorting to newer and –allow us to say– more scientific methods, as Natural Phonotonetics. Unfortunately, ‘traditions’ are hard to die, or even be simply modified following more recent and scientific criteria.

But it must be completely clear that we refer to the (now) highly consolidated spelling usage, after the classical period, even if –obviously– related to that very epoch. Nobody sane of mind would assume that Plato or Aristotle actually already used such way of writing.

Of course, (ancient) tablets were a bit different from (graphic) tablets, but we must not confuse them. It is useless to remain bound to clearly outdated past ‘things’.

0.7. As we have already said, too often, even ‘modern phoneticians’ describe obviously unquestionable diphthongs as if the were ‘long vowels’. Thus, it is not at all hard to imagine how phonetic realities could be treated in ancient times (and still believed to be like that, nowadays!)

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

Sadly enough, in Greece nothing happened similar to what Pānini did, in ancient India, for rather (almost modern) scientific phonotonetics. The Greeks did know some kind of an ancient ‘letter’, derived by cutting H, which was quite suitable for an adequate representation of their phoneme /h/: ι, ι. In fact, ι had also been used to
represent drachma, as a silver coin. In Argolis, τ (or its variant τ) was used for λ, too.

In the late Hellenistic period and later on, when diacritics were systematically introduced in writing, this sign became the rough breathing, (',) while the other part, \( \lambda \), became the smooth breathing, (').

But it seems that some post-classical scholiasts and grammarians were not sufficiently smart as to follow the example found even in certain Greek colonies, where that ‘letter’ was conveniently used as a full-fledged consonantal grapheme. Instead, they ‘preferred’ not to indicate their phoneme, which –it is true– was rather marginal, almost a second-hand consonant. On the other hand, communications was certainly not as easy as it is today: they did not have \( \text{ιντερνετ} \) (nor \( \text{ιντερνετ} \)).

When pre-vocalic /h/ eventually disappeared from Koiné Greek, and its spelling was fixed by people who no longer had it in their own spoken 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.

Even when /h/ was really present, it must have been considered as something belonging more to the realization of vowels in certain initial positions, rather than actually being a real consonantal segment.

0.8. As a matter of fact, in verse, neither (') /h/, nor the /h/ element of φ, θ, χ, were perceived as independent phonemic segments, while, on the contrary, they certainly were: [h], [ph; th; kh, kh]! So, absurdly, initial /h/ was not considered to be a true consonant, but some kind of unfortunate feature belonging to the vowels, calling it rough breathing.

As in Italian, what is not clearly shown graphically, like the real (phonemic) timbres of the vowels written e and o, /e, ε; o, ο/, is currently undervalued, and even not perceived, not only by common people, but also by ‘learned’ people, as well, like too many university teachers.

0.9. Thus, instead of using a convenient and economical consonant (like \( \eta \), \( \tau \), or any other, possibly better), a highly inconvenient diacritic was put over lower-case vowels: (') (for all seven vowels). Of course, it was also to be combined with the three kinds of accent, giving (",", "") – again, for all vowels, including the three ones with iota subscript: (\( \epsilon \)).

As already hinted at above, although φ, θ, χ 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: π, τ, κ (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 (especially in texts as we have today).

But, in case, to indicate a phonic ‘zero’, [\( \emptyset \)] (or simply [], certainly not [\( \tilde{\emptyset} \)], which might have required a true consonantal phonic –and perhaps also graphic– segment), they should have used \( \lambda \), \( \tau \), which they already had in previous times.

So the number of combinations of vowels and diacritics was doubled, quite unnecessarily. Of course, it is true that the adoption and insertion of the diacritics, over
(or under) letters, was somehow imposed by the unlucky \textit{scriptio continua} (with no spaces between words) and in capital letters.

Obviously their introduction was certainly not a perfidious invention. And even the smooth breathing had a justification; in fact, it helped to identify words beginning with a vowel, as the rough breathing also did. But such ‘clever expedients’ were due to the technical limits of those times.

0.10. 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] (\textit{ie äi}), they are ‘ingeniously’ written like \textit{ai}, as if they were actually [a'i]!

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 [kaða'renuša] is still amazingly written \textit{kaða'renuša} (with an accent over what is now a consonant).

0.11. The medieval bureaucratic obsession also brought scholars to put a grave accent on any unaccented syllable, thus, producing full 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 phonotonetic 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 protune and tune modifications, as in Greek, too) two essential pitches are used: low and ‘non-low’, which is \textit{mid}, not ‘high’ as it is still called and described.

So, a tone mark like \(\acute{\text{\text{}}}\) is certainly excessively too high, while \(\acute{}\) (\textit{ie [-]}, not to be confused with [\text{\text{}}], \textit{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 \textit{mid}, but not on the same syllable, even if long, so certainly neither [\text{\text{}}] nor [\('.\).

Instead, it means that from a low-pitched unstressed syllable [.\text{\text{}}] the voice rises to the mid-pitched stressed syllable [.\text{\text{}}] (\textit{ie [-]}, again) for the acute accent, [.\text{\text{}}] (\textit{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, [.]. The change from [.\text{\text{}}] to [.\text{\text{}}], is too often interpreted (and described) as an actual tonetic movement to which the real [.\text{\text{}}] tone is added, giving something misleading like [.\text{\text{}}], or even worse [.\text{\text{}}]!

Arguably, it would be extremely ridiculous to pass to a true high pitch even in Japanese, which has very similar tone patterns, as already said. 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, [.\text{\text{}}] (\textit{ie [-]}), or falling [.\text{\text{}}] (cf fig 5.1).

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

0.13. Now, a short note about the way of representing numerals in ancient Greece 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.

Thus we find numbers like: α, β, γ, δ, ε, ζ, η, θ, ι (ie 1-10), ια, ιβ, ιγ, ιδ, ιε, ιζ, ιη, ιθ (ie 11-19), κ, λ, μ, ν, ζ, ο, π, ρ’ (ie tens from 20 to 90), ρ, σ, τ, υ, ψ, χ, ψ, ω, γ (ie hundreds from 100 to 900), α, β, γ (ie thousands from 1000 to 3000), ι, χ (ie tens of thousands from 10,000 to 20,000), ρ (100,000). Let us see some examples: ιβ (ie 12), ιξη (ie 968), γγπγ’ (ie 3683).

Certainly, ‘creations’ like ι, ≥ (⁄), Ω, ∑, ≈ (), ∞ (∫), ∆, ≠ (≠), ∂ (Ä), ¯ (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) would be much better, and with ‘normal’ combinations of these simple ten elements, without ignoring the fundamental zero, in fact, only nothing is flawless, instead of introducing cerebral pseudo-numerical values, detrimentally based on less motivated letters.

Before Archimedes, scientific precision seemed to be less important than philosophy or the fine arts. In fact, πολύπους (polypus /polípos/, ‘many’ & πούς ‘foot’) is certainly not as precise as οκτώπους (octopus /oktopos/, ‘eight’).

So, 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 a possible even worse way, as we all know rather well. For instance, xl, or XL, means ‘40’, certainly not ‘extra-large’!

0.14. 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 /wv, w/ (where /uu, u/ derived both from /ou/ and contracted or compensatory lengthened /oo/, but were still different from ‘oo: [ɔɔ]”), other dialects kept /uu, u/. In addition, Attic maintained /h/, while, for former /Vsv/ it had three possibilities: /Vsv, VsV, VttV/.

Generally, Ionic changed /uu, u/ into /wv, w/, /o/ into /ou/, but /ei/ into /e/ (although apparently irregular); it often lost /h/, while, for former /Vsv/ it had two possibilities: /Vsv, VttV/, and geminated /m, l, p, t, s/ for metrical reasons.

Aeolic changed /ei/ into /e/ [εε] (sometimes into /ii/); contracted /ee/ and /oo/ became /e, e/ [εε, οο], 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 [je, jo] instead of /ea, eo/ for metrical reasons. Besides, it kept [zd] and [ss].

**Older graphic variants in Ancient Greek**

0.15. Here is the typical Greek alphabet, with some possible older variants.

A (A, A, A, A, A, A, α) α (α, α, α, α),
B (B, B, B, β) β (β, β, β, β),
Γ (Γ, Γ, Γ, Γ, Γ, γ) γ (γ, γ, γ, γ, γ),
Δ (Δ, Δ, Δ, Δ, δ) δ (δ, δ, δ, δ),
E (Ε, Ε, Ε, Ε, ε) ε (ε, ε, ε),
Z (Ζ, Ζ, Ζ, Ζ, ζ) ζ (ζ, ζ, ζ, ζ),
H (Η, Η, Η) η (η, η),
Θ (Θ, Θ) θ (θ, θ, θ, θ),
I (Ι) ι (ι, ι, ι, ι),
K (Κ, Κ, Κ, Κ, κ) κ (κ, κ, κ, κ),
Λ (Λ) λ (λ, λ, λ, λ, λ),
M (Μ, Μ, Μ, Μ, μ) μ (μ, μ),
N (Ν, Ν, Ν, Ν) ν (ν, ν, ν, ν),
Ξ (Ξ, Ξ, Ξ, Ξ, ξ) ξ (ξ, ξ),
O (Ο, Ο) o (ο, ο),
P (Π, Π, Π, Π) π (π, π, π, π, π),
Ρ (Ρ, Ρ, Ρ, ρ) ρ (ρ, ρ, ρ, ρ, ρ),
Σ (Σ, Σ, Σ, Σ, σ) σ-ς (σ, σ, σ, σ, σ, -ς, -ς, -ς, -ς, -ς, -ς),
Τ (Τ, Τ) τ (τ, τ, τ, τ),
Υ (Υ, Υ, Υ, υ) υ (υ, υ, υ, υ),
Φ (Φ) ϕ (ϕ, ϕ, ϕ, ϕ, ϕ),
Χ (Χ, Χ, Χ, Χ) χ (χ, χ, χ),
Ψ (Ψ) ψ (ψ, ψ, ψ),
Ω (Ω, Ω, Ω, Ω) ω (ω, ω, ω).
0.16. Certainly, the phonic consonants of ancient Greek (as those of any other language, dead or alive) must not be presented in alphabetical order. In fact, spelling is only an accidental poor device to try to represent a language. English (and even French) is quite a ‘good’ case of scientific absurd, which we have to cope with continually.

However, we have to recognize that ancient Greek spelling is not so bad, while the same heap of ‘signs’ is much less fit for modern Greek.

Clearly, languages evolve and change much, while keeping more or less unchanged their alphabets. This is not the best thing for the connection between their sounds and the way to ‘represent’ them in writing. Of course, for etymological reasons, it is better like that, although semantically things may certainly change even more than sounds.

For a (possibly good) connection between the pronunciation of a language and its writing ‘system’, there are even worse situations, as with Chinese and Japanese. In fact, those two languages do not represent their sounds, but (somehow) try to ‘draw’ the meaning of their words, or semantic concepts. It is true that, especially in Chinese, all their ‘pretty drawings’ are somehow different even when they have the same pronunciation, with the ‘helpful’ addition of different tonemes, to ‘simplify’ things for foreigners…

Further considerations and some proposals about Greek spelling

0.17. Unfortunately, the clever scholar (Aristophanes of Byzantium) who definitely elaborated the alphabet and spelling of classical Greek, as we use it today, did not consider important to provide further glyphs even for long i, α, u /iː, ɑː, ūː/ [ii, aa, uu] (here, listed in phonic manner, not alphabetic).

It was around 200 BC, and probably he did not distinguish short and long i, α, u any longer, as he certainly did not pronounce ‘iota subscript’, that he hid under the small-case vowels (but not under the upper-case ones)!

Besides, for Η, Α, Ω, he put accents and breathings in front of them, instead of above, as for η, α, ω…

Of course, such glyphs would have been very useful, indeed, since all other things in the Greek alphabet are, substantially, ‘phonemic’. Frankly, writing texts with a space between words, would have been much more useful, avoiding the, practically, useless ‘smooth’ breathing.

All the elaborate and intricate combinations with the tonemic marks, with the ‘smooth’ and ‘rough’ breathings complicate incredibly both reading and writing.

0.18. Back to the three ancipital letters, we are convinced that, thinking about a clear differentiation in writing should be more useful and important than all those ‘unscientific’ combinations of diacritics.

For instance, in addition to i, ι: /i/ [ɪ], α, Α: /a/ [æ], ι, ι: /u/ [ʊ], why not to use also ι, ι: /ii/ [ii] (quite similar to the first part of η, or, in case, ɪ, i), α, Α: /aː/ [aa]
Thus, instead of (') for /h/, the ancient (and sadly ignored) h (also with its legitimate and useful capital variant, H) would decidedly be more advisable and convenient (and even more scientific and typographically more worthy, instead of degrading).

Passing to the toneme marks, again, there are the six ‘inherited’ combinations (or rather ‘jumbles’): {Ö á Ü « â ä}, in addition to the simple ones: {’ ’ ‘ ‘ ‘ ‘} (or {’ ’ ’}), for the last one, although less pleasing). Thus, we should be happy with: å, &, (and â), or í å, íâ, rather than ã, â (å), or ë, ã; in addition to Å, Â, Î â, Îâ (rather than Å, Â, 'Å, 'Â) &c.

The ‘damned’ iota subscript, in ‘true’ classical ancient Greek was still pronounced, producing real diphthongs, so a simpler and more functional way of writing it would be to use the usual letter for iota, after the vowel: ηι, ηλ, ολ (rather than η, ι, ω), as Hi, At, Ωt).

0.19. Let us, now, think about the incredibly peculiar way of writing the accents (and breathings!) over the two vowels of a diphthong, ‘officially’. For instance: ει, εί, ει (to say nothing of ει, ει, ει, ει, ει, ει, ει, ει, ει, ει, ει, certainly unbearable even to ‘Mighty Jove’!). Arguably, ει, εί, ει, ει, ει, ει, ει, ει, ει, ει, ει, ει would be much better, although none of us is accustomed to, yet, because ‘slave’ of traditions...

Besides, why should sensible people think of writing phonic realities like /ei/ [e1], as if it were /ei/ [e1]?! And so on... Thus, words like βοι, Λαιζ /boi, lais/ [boi, lais] would ‘legitimately’ be written βοι, Λαιζ (as all ‘gods’ would command).

Often, further vocalic clusters, which phonically are obvious diphthongs, for ‘damned’ grammatical and lexical ‘reasons’ are presented in an astonishing circus-like way.

A few words, now, about Greek punctuation. It is a well-known fact that instead of Latin (?) we find (;). On the contrary, instead of Latin (;) we find (;). No difference is found for (,) and (,). While modern Greek adopts (!), ancient Greek did not use it. Anyway, we will certainly use it, thogther with capital letters at the beginning of new sentences, althoug ancient Greek rarely did so.

However, a few ‘good words’ can be said about the puzzling choice of (,), (‘), (‘), (‘). In fact, (,) indicates an intonation fall, reaching a low tone, [\], while (‘) indicates an intonation rise, [\].

In addition, (,) indicates an unmarked middle tone, [\], while the interrogative (‘) indicates a rising-falling movement (to a middle tone), althoug represented by means of ‘extreme’ levels, [\,]. At first sight, [\,] would seem to be more appropriate, but our notation for intonation simply wants to hint at general movements, since the tonograms show what actually occurs better.

0.20. Thus, we will deal with the sounds of ancient Greek according to the principles of Natural Phonetics, presenting its phonemes (and phones), including stress, tonemes, and intonation. All this will be accompanied by the ‘official’ spelling, which has at least the advantage of clearly showing the stress and tonemes of this language, in spite of its undeniable drawbacks.
0.21. Acknowledgments. Special thanks are sincerely due to Fernando Maggi for his constant and highly qualified assistance and counseling. Besides: Luca Bomboi, Marco Cerini, David Goldstein, and Marco Sartori.

2020/10/10

Luciano Canepari [lu'tʃa:no ,kane'pəri]
University of Venice (Italy)
Natural Phonotonetics
natural.phonetics@gmail.com
3. Vowels

Vowels & diphongs

3.1. In a phonemic transcription of Greek, we may use some more general (less precise: offIPA) symbols, especially for the vowels, wanting to represent the phonemes, with their substantial 'durational' peculiarities, certainly followed by their real phones (with necessary clear timbres).

As § 3.1 shows, ancient Greek had 5 short: i, e, a, o, u /i, e, a, o, u/, and 5 long vowels: τ (i), η, α (ã), ω, υ (ǔ) /iː, eː, aː, oː, uː/, with the addition of the narrow diphthong /uu/ [ʊ(ʊ)], which behaves as a long vowel, although it actually has two partially different components. The brackets indicate their shortened taxophones, which occur in unstressed syllables.

Besides, the brackets also show that the ‘long’ vowels, /Vː/, in fact, are monotimbric diphthongs, [VV], rather than real long vocoids, [VV]. Unfortunately, i, ã, ù for /iː, aː, uː/, are only used in specialized publications, such as good dictionaries, grammars, and texts, but unsystematically and usually written as simple i, a, u (however, see § 0.17-9).

Examples: ἵστι /'isti/ ('Is3tI), κρινω /'kri:nø:/ ('krii3nO), λέγε /lege/ [le:ge], λήθη /le:the/, θάλασσα /thalassa/ ['θælæs,se], πᾶς /paə/ [.paas], ὀ μικρόν /o mikron/ [ɔ,mikron], πῶλος /pɔ:lɔs/ [pɔlɔs], γλυκύς /'glukús/ [gl'kus], δεικνύς /deiknus/ [deik'nu:s].

fig 3.1. Ancient Greek short & ‘long’ vowels, including ou /uu/ [ʊ(ʊ)].
3.2. It is important to know exactly that each vocalic element, in our phone-
mic transcriptions, represents a corresponding mora. 
A single mora corresponds to a unitary short vocalic entity, which is paramount 
for stress assignment, depending on the weight of the various syllables that form 
given words. Of course not every single mora forms a syllable. 
In fact, two contiguous moras form a ‘long’ (or heavy) vowel, or a plain (or simple, 
or normal, or ‘short’) diphthong, while three moras form a ‘hyper-long’ (or ‘hyper-
heavy’) syllable, or ‘long’ diphthong, as fig 3.2 will show (but see also § 3.16-18!).

3.3. Thus, the first vocogram in fig 3.2 shows 6 ‘short’ diphthongs (/iu/ [ui]), 
while the second one shows 6 ‘long’ diphthongs (/V/v [Vv]). Our examples 
will show both these 12 diphthongs and many others (including triphthongs), 
which, traditional grammar, ‘unphonically’ because enslaved by morphology and 
lexicon, scatters around in different ‘syllables’. 
The examples appear dispersedly, ‘in twos and threes’, in order not to make any 
distinction among them, while avoiding monotonous reading, too.

3.4. Examples: ταυτό /tauto/ [taa.to], ηφέσην /hefêsê.in/ [heifêsê.in], πρω-
δάν /proû.dan/ [proû.dan], ἐκλώ /eklô/ [eklô], πατρός /pa.trô.s/ [pa.trô.s], 
σωματός /sômâ.tô.s/ [sômâ.tô.s], τραγῳδός /trâ.goî.dô.s/ [trâ.goî.dô.s], Θράξ 
/thraîks/ [thraîks], βοῦκα /boû.kâ/ [boû.kâ], Ἄιδης /âî.dês/ [âî.dês], ἔκλυον /é-
klyô.n/ [éklî.yô.n], κλάω /klaô/ [klaô], οἰκίων /oi.kî.ô.n/ [oi.kî.ô.n], αἰστος /aisî.os/ 
[aisî.os], αἰστος (αίστος) /ai.stô.s/ [ai.stô.s], ἀίδιος (ἀίδιος) /âî.dî.ô.s/ [âî.dî.ô.s], 
αἰστος /aisî.stos/ [aisî.stos], αἰκώς /ai.kô.s/ [ai.kô.s], αἰκή /ai.kê/ [ai.kê].

And: ἐμενοὶ ἔγαμος /elenî.ô.i êgâmôs/ [ême.nei ège.mos], τιμησόν μοι νῦν 
/time:son moî.nû.nû/ [ti.me.sô.mô.i.nû], ὀπωφινῷ ἐναλλικοί /opô.fî.nô.i 
enalî.kî.ô.i/ [ôpô.fî.nô.i.nô.i], σκοτᾶ ἔγχος /skô.ta.eî.ênkhôs/ [skei.jêei
3. Ancient Greek vowels & diphthongs

And:

3.5. Other examples:

3.6. Further examples:

3.7. Here are some examples taken from Homer:

fig 3.3. Ancient Greek short & ‘long’ vowels possible in unstressed syllable in very fast speech.
3.8. Fig 3.3 shows the short vowels (first vocogram) and the ‘long’ ones (second vocogram) as they might be realized in unstressed syllables, in very quick speech, to give real authenticity to the language, in direct contrast with the ‘language’ of artists.

So, Fig 3.4 shows the short diphthongs (first vocogram) and the ‘long’ ones (second vocogram) as they are realized in unstressed syllables, in very quick speech. As an example, let us compare the initial part of the story transcribed in § 6.3.

Borēas kai Ἡλιος περὶ δυνάμεως ἡρῴζεν· ἐδοξεὶ δὲ αὐτοῖς ἐκεῖνω τὴν νίκην ἀπονείμαι, ὡς ἂν αὐτῶν ἀνύρωπον ὀδούπορον ἐκδύσῃ. Καὶ ὁ Βορέας ἀρξάμενος σφοδρὸς ἦν· τοὺ δὲ ἀνύρωπον ἀντεχομένου τῆς ἐσθητοῦ μᾶλλον ἐπέκειτο.

Neutral: [bo'reas, karif'ie, lhos, pe, ri, de'ne, me, 'se, ri, zon, 'e, dok, se, de'bu, tois, kei, ni, ke, ne, po, nei, mai, 'i, ho, se, neu'to, ne, thra, pon, ho, do'po, ro, nek'du, se'i, kei, ho, bo'rea, ser, ke, me, nos, pho, dro, sen, 'i, tu, de', arth'c, po, o'men, te, kho, me, nu, te, ses, the, eto, 'z, ma, al, lo, ne, pe, kei, to].

Fast colloquial: [bo'rees, karif'ie, lhos, pe, ri, de'ne, ma, 'se, ri, zon, 'e, dok, se, de'zo, tois, kei, ni, ke, ne, po, nei, mai, 'i, ho, su, no, to, ne, thra, pon, ho, do'po, ro, nek'du, se'i, kei, ho, bo'rees, ser, ke, me, nos, pho, dro, sen, 'i, tu, de', arth'c, po, o'men, te, xo, me, no, ta, ses, the, eto, 'z, ma, al, lo, ne, pe, kei, to].

Additional views

3.9. The following figures present the vocoids seen so far, under different perspectives, which will complete their precise nature. So, we have: dorsograms, palatograms, and labiograms.
fig 3.4.1. Ancient Greek: orograms (cf fig 3.1.4).

fig 3.4.2. Ancient Greek: palatograms (cf fig 3.1.4).
Additional information

3.10. There is something more to say about the diphthongs of ancient Greek. In fact, fig 3.5 gives the three very common ‘short’ diphthongs (first vocogram) ει, αι, ωι /ei, ai, oi/ [ει, αι, ωι], in comparison with the corresponding three ‘long’ ones (second vocogram), η-η, α-α, ω-ω /ει, αι, ωι/ [ε(ε)ι, α(α)ι, ω(ω)ι] (cf § 3.16-18).

In addition, the fourth vocogram provides a common variation of the ‘long’ diphthongs, realized as triphthongs: [ε(ε)ι, α(α)ι, ω(ω)ι].

Again, the vocoids in brackets disappear in fully unstressed syllables, but their timbres remain distinct from ει, αι, ωι /ei, ai, oi/ [ει, αι, ωι], as the third vocogram shows. Besides, the third vocogram shows the three ‘long’ diphthongs in unstressed syllable.

3.11. Let us also look at fig 3.6, which shows a fascinating hypothesis (more likely than not, indeed), which leads us to consider the Hellenistic-Byzantine intro-
duction of iota subscript (η, α, ω) as a kind of diagraphemic way to hint at a possible sociophonic diaphonemic reality.

This deals with the change from η, α, ω /ei, ai, oi/ [εει, ααι, ωοι] (first vocogram) to their succeeding actual reality, during the Classical period: η, α, ω /e, a, o/ [εε, αα, ωω] (third vocogram). They coincide with the corresponding previous long phonemes η, α, ω /e, a, o/ [εε, αα, ωω] (already seen in the second vocogram of fig 3.1).

fig 3.6. Ancient Greek: evolution to /e, a, o/ [εε, αα, ωω] in certain words.

fig 3.7. Ancient Greek: further 'unofficial' diphthongs & triphthongs.
In fact, different people in different periods (within the 5-4th c.) might certainly have anticipated that change, through stages like those illustrated here.

The first vocogram of fig 3.6 also helps to show the difference between the existing ‘short’ diphthongs ει, αι, οι /ei, ai, oi/ ([eɪ, aɪ, oɪ]) (given in the first vocogram of fig 3.5).

Let us notice that the second vocogram (in fig 3.6) shows an ‘intermediate’ situation possibly used by some different speakers (or by the same ones, with oscillating usages), ie the very likely sociophonic stage of narrowed (‘long’) diphthongs, [εε, αα, οο]. Their second elements are simply pointing to /i/ [ɪ], without actually reaching it. Instead, the third vocogram shows the three monophthongized ‘long’ vowels.

3.12. In addition to more or less ‘official’ diphtongs (and triphthongs), in connected texts, further such vowel clusters occur, certain of them not rarely at all. fig 3.7 shows some of the most frequent ones.

**Grammatical and metrical ‘solutions’**

3.13. Passing to some requirements (very queer, indeed) that grammar and verse demand, in order to ‘satisfy’ stress and mainly 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), diereisis was introduced, as when normal ποιεσ /pæis/ [pæıs], had to be deformed into παεις (which could be passed off as a legitimate disyllabic word, arbitrarily changing into [pɛıs], by doing violence to actual language).

On the contrary, when there were too many ‘syllables’, while just one could be accepted, synizesis had to be invented, as when μη φου /mɛuu/ [mɛɛu, mɛu], had to be made to ‘seem’ to be monosyllabic (as if it was not already such, in spite of its length).

Let us end with syneresis, when words like θεοι /θεˈoi/ [θeˈoi], or πολεως /poleos/ [poˈleɔs] had to be passed off as monosyllabic or bisyllabic, respectively, having to introduce new consonantal semiapproximant taxophones, as in ‘[θήοι, ‘pολεός], or θεός [θεˈös] as ‘[θήος]’ (and [t, ʊ] for ‘consonantalized’ [a, o], α, ο: [H, ω], cf fig 3.8-9). Besides, we have μη φου /mɛuu/ [mɛɛu] becoming [mɛu], when reduced to an unstressed monosyllable.

3.14. Of course, in Natural Phonetics, πολεως /poˈleɔs/ is already ‘naturally’ bisyllabic. As in the case of θεοι [θeˈoi] (as a monosyllabified word, seen above), the -οι and -αi endings were sometimes forced to ‘become short’ (or, rather, to be considered as ‘short’) as grammars ‘carefully’ present. For instance, the -αi of the imperative and infinitive forms, τιμήσαι and τιμήσατε, had to be considered as ending with something ‘monomoraic’ like [H], just seen, ie [tii,me,ši] and [tii,mee,ši]; while the optative form, τιμήσαι, ‘remained normal’, ie with a ‘bimoraic’ ending, [tii,me,ši]. Similarly,
for ἀνθρώποι, i.e. [νθρωπο], as against ἀνθρώπου, i.e. [νθρωπο].

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).

3.15. 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 bi-phonic diphthongs even when unstressed, [ii, ee, aa, oo, uu], not as [i, e, a, o, u] (as in real spoken language, where they still remained different from their short counterparts, [i, e, a, o, u], thanks to their timbres).

True languages and ‘artistic’ languages are two different things, even today. It is sufficient to think about how unnaturally words are distorted in songs, to say nothing about opera.

Colloquial variants

3.16. Let us add some different realizations more typical of colloquial pronunciation, inferable from ancient authors, as shown in fig 3.10. It is no problem to think about some examples.

Let us add that the sequences of /iV, uV, yV/ and /iV, uV, yV/, colloquially often avoided the insertion of [j, j, w, ω], giving /iV, uV, yV/ and /iV, uV, yV/, as in: Μιλτιάδης [mil'tiades], for [mil'tiades]. Πρίμος [pri'mos] for [pri'mos].

Besides, at least colloquially, in word-initial position, unstressed /i, u/ followed by a vowel, naturally tended to become consonantal, as in: ἰάπτω [iap'to, iep-], ἰάνω [iāno, iei-], ἱερός /iæ/ [i.jatros, ja-, ja], ὑετός [h'etos, h'etos, h'etos, h'etos, h'etos, h'etos, h'etos, h'etos, h'etos].
In addition, in colloquial fast speech, besides vowel weakening (as already shown in §3.3-4), also consonants had weaker realizations, anticipating later changes, such as geminate simplification and /ph, th, kh/ reduction to their constrictive counterparts, by fusion: [φ, θ, x].

3.17. On the contrary, in poetic speech, even ‘unofficial’ diphthongs, with different vowels, were forced to become two actual syllables, trying to produce artificial ‘hia- tuses’ ([VV] / [VV]), by introducing ‘necessary’ semi-approximants of different timbres (which ‘poetically’ debased the language), also keeping unstressed long vowels bimoraic.

As, for instance, in: Ρέα [re.aa, re.aa], for [rea], Μελέαγρος [me.λε.αγρος], or even [me.λε.αγρος], for [me.λε.αγρος], Μενέλεως [me.νε.λε.ως], or even [me.νε.λε.ως], for [me.νε.λε.ως], Πασιφάη [pa.si.φα.ι], or even [pa.si.φα.ι] for [pa.si.φα.ι], &c.

Let us also notice, instead, that colloquially /e:, a:, o:/ were shortened even in stressed checked syllables, again producing a more fluent and natural language, as in: ηξα [eksa] / [e十条-sa, e十条-sa], οστερ /oster / [o十条стер, o十条стер].

3.18. Of course, different speakers surely had partially different realizations of particular phonic sequences, some anticipating successive changes more than others. Thus, for instance, vocalic clusters like /ViV, VuV, VuV/ were rather systemat-
ically and constantly [ιV, οV, οωV], more then /iV, uV, uuV/, which certainly were also [ιV, οV, οV], in addition to [ιιV, οπV, οωV]. Several examples can be found under § 3.4.

It is interesting to observe the intermediate case, between these two structures, provided by /eiV/, with either [eiιV] or [eiV], since /ei/, for many speakers, instead of [ei], was already [eι] (as shown in the second vocogram of fig 3.10, for a finer reality than in an official IPA transcription), before becoming exactly [ee].

Both ancient and contemporary scholars describe it as ‘[e:]’, even if it did not actually reach a form like that: Αξεῖος /da:ei:os/ [da,raiJos], colloquially [da,ree-Jos], not yet ‘[da,ree jos, da,reeos]’, with ‘/e:/’ becoming different from classical /e:/ [εε].

However, the variation indicated above was certainly due to the fact of a possible difference in interpreting and putting its realizations, at the same time, into both classes: /eiV/, and /e:V/.
4. Consonants

4.1. Readers are invited to take good account of what has been said under $1.7$-$25$. The consonant system of ancient Greek is shown in the table of fig. 4.0, including all necessary taxophones for ‘neutral’ (and colloquial) classical pronunciation.

fig 4.0. Ancient Greek consonants.

<table>
<thead>
<tr>
<th></th>
<th>nasal stop</th>
<th>constrictive</th>
<th>approximant</th>
<th>semi-approximant</th>
<th>tap</th>
<th>trill</th>
<th>lateral</th>
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<td>[n]</td>
<td>n</td>
<td>[η]</td>
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<td>[u]</td>
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<td>[i]</td>
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<tr>
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<td>laryngeal</td>
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</table>

**Nasals**

4.2. There are two nasal phonemes, μ, ν /m, n/ [m, n]; of these, /n/ has four taxophones, [m, n, η, η]. Examples: μαιμάω /maimao/ [meimmea], ἀμμός /ammos/ [ammos], ἀμπέλος /ampelos/ [empeles], νᾶος /naos/ [naanos], ἱων /ion/ [iion], ἀνδίκα /andika/ [andika], κάνναβις /kannabis/ [kannebias], ἀγγέλος /angelos/ [enjgelo], πάνκαλος /pankalos/ [enjkeilos], ἔγχος /enkos/ [enkos], φαλάγξ /phalanks/ [phelenks], γνώσις /gnosis/ [gnoxis], κνίδζω /knidzo/ [knidzo].

Let us also notice /gm/ [g,m, η,m], as in: ἔγκαι /eigmai/ [eeigmie, eeηmēi].

fig 4.1. Ancient Greek consonants: nasals.
**Stops (classically, but horribly, called ‘mutes’)**

4.3. There are three diphonic couples, \(\pi, \beta, \tau, \delta, \chi / p, b; t, d; k, g/\) (of course, the prevelar taxophones, \([k, g]\), occur before front vowels.

4.4. In addition, the voiceless elements occur in ‘aspirated’ clusters, represented with special letters, \(\varphi, \theta, \chi / ph, th, kh/\) instead of something – somehow more ‘modern’ and scientific – like \(\langle \pi', \tau', \chi' \rangle\) (or, better, combined \(\langle \pi, \tau, \chi \rangle\)).

‘Aspiration’ did not happen to be indicated with a special letter, like for \(/h/\), as ancient \(\langle i, I \rangle\), which could have been more useful, indeed, in place of the troublesome and inconvenient rough breathing, \(\langle ' \rangle\).

That ‘invention’ was awkwardly devised, after too many centuries (or, indeed, millenia), in order to add it on older written texts, without having to write them all again, starting from scratch (of course with no computer at all! – today: \(\text{κομπιουτερ} \ [\text{kom'pju'ter}]\), or \(\etaλεκτρονικός \ \text{υπολογιστής} \ [\text{elextronikon} \ \text{upologi'tis}]\).

To ‘complete’ that peculiar operation, also a smooth breathing, \(\langle ' \rangle\), was introduced, to ‘clearly’ denote the absence of \(/h/\), identifying where words began. The inevitable result was a very complex ‘system’, including three marks for the tonemes \(\langle ' , ' , ' , ' , ' , ' \rangle\)!

Back to the (clear and obvious) clusters \(/ph, th, kh/\), which have nothing to do with any mysterious divine entity. Here are some examples for all of them:

\[
\begin{align*}
\text{papaì!} & \quad \langle \text{pA'pai} \rangle \\
\text{pÅppaw} & \quad \langle \text{pAp3pAs} \rangle \\
\text{pt<j} & \quad \langle \text{p'tOOks} \rangle \\
\text{plÈkv} & \quad \langle \text{pl™3kO} \rangle \\
\text{fakØw} & \quad \langle \text{3phA'khøs} \rangle \\
\text{difyÈrinow} & \quad \langle \text{3dIp'th™3rI3nøs} \rangle \\
\text{babaÙ!} & \quad \langle \text{3bA'bAI} \rangle \\
\text{sÅbbaton} & \quad \langle \text{sAb3bA3tøn} \rangle \\
\text{blÅptv} & \quad \langle \text{blAp3tO} \rangle \\
\text{tetrÅw} & \quad \langle \text{3t™'trAs} \rangle \\
\text{tÈtta} & \quad \langle \text{3t3tA} \rangle \\
\text{yeØw} & \quad \langle \text{3th™'øs} \rangle \\
\text{ylÅv} & \quad \langle \text{3thlAO} \rangle \\
\text{difyÈra} & \quad \langle \text{3dIp'th™ra} \rangle \\
\text{diØti} & \quad \langle \text{3dI'jø3tI} \rangle \\
\text{dm<w} & \quad \langle \text{d'mOOs} \rangle \\
\text{kØkkow} & \quad \langle \text{3køk3køs} \rangle \\
\text{kl<n} & \quad \langle \text{klOOn} \rangle \\
\text{knÙzv} & \quad \langle \text{k'nId3zO} \rangle \\
\text{kteÙw} & \quad \langle \text{k't™Is} \rangle \\
\text{xÅzv} & \quad \langle \text{khAd3zO} \rangle \\
\text{xnØow} & \quad \langle \text{kh'nøøs} \rangle \\
\text{xlØh} & \quad \langle \text{khløE} \rangle \\
\text{gign<skv} & \quad \langle \text{3ŸIŸ'nOOs3kO} \rangle \\
\text{gn<mh} & \quad \langle \text{g'nOO3mE} \rangle \\
\text{glukÛw} & \quad \langle \text{3glY'kYs} \rangle \\
\text{dØgma} & \quad \langle \text{døg3mA} \rangle
\end{align*}
\]

Constrictives (‘fricatives’)

4.5. There are two constrictive phonemes: plain voiceless \(/s/ \ [s]\), with the taxophone \([z]\), before the voiced stops, \(\beta, \delta, \gamma / b, d, g/\). Generally, the same is true also before (naturally voiced) sonants, \(\mu, \nu, \rho, \lambda / m, n, r, l/\) (but it seemed that ‘careful’ speakers might try to use \(s\), instead).

The second costrictive phoneme, \(/z/ \ [z]\), in neutral pronunciation, is realized as the cluster \(/dz/ \ [d-z]\) (not a stopstrictive \([dz]\)), both in word-initial position and be-
tween vowels, [ʼd-zV, Vd-zV]. It can be considered as a voiced cluster, similar to the two voiceless ones, ψ, ξ /ps, ks/ [p-s, k-s].

Colloquially, we generally had [Vw,zV, Vz-zV] (which was, afterwards, used in Koiné Greek, although as a simple consonant, as all others). As we have already said (in 6.0, note 2), /z/ derived from former /zd/ [zd, zδ]).

Examples: σῦστασις /sustasis/ [sou3ta3sis], σφειζ /sphi3z/ [sphi3z], πεσσός /pess3sos/ [pess3sos], ξενικός /ksenikos/ [ksenikos], θρίκς /thriks/ [θri3ks], ξενικό /ksenikoko/ [ksenikoko], ζευζίς /dzeu3zis/ [dzeu3zis].

4. Consonants

4.3. Ancient Greek consonants: constrictives.

4.6. We have to add three constrictive taxophones, almost corresponding to the pronunciation of modern Greek for φ, θ, χ, which are continuous contoids of the kind of [f, θ, x] (even if with more or less consistent differences between neutral, international, and mediatic accents of modern Greek, as described in our Greek Pronunciation & Accents).

The ancient Greek contoids are [φ, θ, χ]. They were taxophones of the clusters /ph, th, kh/ [ph, th, kh, kh], colloquially occurring before other consonants, as in διφογγος [di3fo3gos], which careful speakers realized (or tried to realize) as [di3fo3gos], or even [di3fo3gos] (with a semiapproximant [h])!

Other examples, for the colloquial voiceless costrictive taxophones of /ph, th, kh/, [φ, θ, χ, x], appear in various parts of this book.

Approximants (or ‘frictionless continuants’)

4.7. There is just one approximant laryngeal phoneme, /h/ [h], which was practically considered as being a sort of an ‘unwanted son’, with no sign to represent it, until very late (and unsatisfactorily, indeed) in the history of the Greek language and its spelling (as we saw under § 4.3, dealing with peculiar ‘aspirated’ stops).

Thus, we have /h/ [h], which was so week in word-initial position after a vowel, to be realized as voiced, [fi]: /vhV/ [VhV]. That is why ancient scholars had difficulties in recognizing it adequately, as a true element of the phonemic system of Greek, since it also did not appear in word-internal position, except in the /ph, th, kh/ clusters, certainly not in ‘/VhV/’ sequences.

Examples: ἵπποθέν /hip3pothen/ [hip3po3then], φθίτος /phθί3tos/ [phθi3tos], χάος /kha3os/ [kha3os].

In table 4.0, we can also find the palatal and velo-labial approximants [j, w], which occur in sequences of /VjV, (Vj)u/ followed by a vowel, realized as [Vri3V,
We have already seen some examples, and others will be found below (including the approximants [j, η, w] and semiapproximant [j, l, η, ω], already introduced under § 3.9-10, [j, l, ω]). They had to be used, in addition to the real approximants, to ‘solve’ uncomfortable metrical situations, when there was an excess mora, which would upset the ‘harmonious’ dictates mostly for verse.

4.8. Thus, an exceeding vocalic mora was made to become an ‘innocent’ consonant, simply to balance the weight of the syllables present in a given line of verse.

We had to make πόλεως [πoλες] and θεόι [θε’οι] ‘lose’ one mora, becoming [θhιοι, πo, ljоs]. The same for τίμησαί [τιι,mе,ѕι] and τιμήσαί [τи,mее,ѕи], in opposition to τιμήσαί [τи,mее,ѕι], with a fully dimoraic final syllable. Similarly, άνθρωποι [άνθρωπωι], as against άνθρωπου [άνθρωπου].

4.9. However, it is an undeniable fact that in (very) fast (and colloquial) speech, in addition to the timbre attenuation of the vowels, seen in § 3.3-4, another spontaneous ‘phenomenon’ might surely occur. Arguably, in a more natural way than in literary texts, especially vocalic sequences like /iV, uV, uV/ [iV, uV, oV], /eV, oV/ [eV, oV], /aV/ [aV], in unstressed syllables, more or less occasionally, could change into: [iV, ηV, wV, jV, ηV, ηV, ωV]. Also ‘long’ vowels were shortened in unstressed syllables.

**Rhotics (or, unscientifically horrible: ‘liquids’)**

4.10. There is just one alveolar voiced tap, ρ, ρ /r/ [r], which occurs in opposition to its voiceless counterpart, ρ /r/ [r] (including the corresponding trills, which might occur for emphasis or, freely, in stressed syllables).

Examples: ἀφορρός /απορρός/ [’απρορ’, роs], ὑδηρ /ὕδηρ/ [’hυ,дσι], ὑδρός /ὕδρος/ [’hυ,дρος], ῥητωρ /ῥητωρ/ [’рeтωр].

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**fig 4.4. Ancient Greek consonants: approximants & semiapproximants.**

**fig 4.5. Ancient Greek consonants: rhotics.**
Laterals (or, again, horribly: ‘liquids’)

4.11. There is just one alveolar voiced lateral phoneme, \( /l/ \), with the dental taxophone, \([I]\), when followed by /t, d, s/.

Examples: \( λαλζω /lαleο/ \), \( ελλος /allos/ \), \( ελζ /hals/ \), \( γλαγος /glagos/ \).

Additional views

4.12. Let us add some further figures, which show useful particulars for the identification and recognition of the consonants.

fig 4.6. Ancient Greek consonants: laterals.

fig 4.7. Ancient Greek consonants: labiograms.

fig 4.8. Ancient Greek consonants: palatograms.

fig 4.9. Ancient Greek consonants: lingograms.
Final and initial clusters

4.13. In comparison with other languages, ancient Greek has very many word-initial consonant clusters, as we will see below (while English in particular, does not allow many clusters, although it has some non found in Greek, as, for instance: /sm, sn, sl, sj, sw, spl, spj, stj, sta, sk, skj/ &c, including /sj/ in loans).

On the contrary, in word-final position (while English may have, for instance, [msg], as in glimpsed, colloquially reduced to [msg]), in ancient Greek, only single consonants may occur: w, n, r /s, n, r/ and double: c, j /ps, ks/ (in addition, we have: ék /ek/ [ek], oux /oux /ok(h)/ [ok(h), ok(h)] (proclitics)).

Other clusters are not tolerated in ancient Greek, in fact mÈlaw /'m™la:s/ ('m™3las) derives from mÈlanw and xarÙeiw /kha'ri™is/ (3khA'rI3™Is) from xarÙentw. A rare exception is the Mycenaean citadel name TÙrunw ('tI3rYNs, 'tii-) which in proper classical Greek should be TÙruw /'ti4:7ry:s/ ('tI3rys, 'tii-).

Of course, in this book dedicated to real pronunciation, when we deal with consonant ‘clusters’, we certainly think about (and refer to) phonic matters, not to ‘peculiar’ ways of trying to represent them in writing (as /dz/, /ps/, /ks/). See the first five cases.

4.14. So, word-initially, we may find:

ψ /ps/ [p-s]: ψϕ /p'saar/ – ξ /ks/ [k-s]: ξέω [k'se] – φ /ph/ [ph]: φηρ /phエερ/ – θ /th/ [th]: θην /θεεν/ – χ /kh/ [kh]: χρώς /khroς/ – μ /mn/ [m-n]: μνά [m,naa],


στ /st/ [s-t]: σταίς [s'teis] – στρ /str/ [s-tr]: στραίς [s'treis] – στλ /stl/ [s-tl]: στλεγ-γίς [stlε̞g'is] – σθ /sth/ [s-th]: σθένος [sthe,νos],


βδ /bd/ [b-d]: βδέλλα [b'del,la] – βρ /br/ [br]: βρέφος [bre̞fо̞s] – βλ /bl/ [bl]: βλέμμα [ble̞mε̞],


4.15. Notice that ζδ/ [zd] does not occur (except in Aeolic, for Attic ζ /dz/ [d-z], showing an older possibility, dear to those who still suggest ζ/zd/ [z-d], for classical Greek), as in: ζδεύγλα /zd’eu-gla/ for Attic ζεύγλη /d’z™U-glE/ (d’z™U3glE).

4.16. None of the following clusters are found, word-initially:


4.17. 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 [po, nos], τυμάω [tîmēç], ἀπ’ ἐμοῦ [ap’, e, mou], ἀγγέλλω [aŋgelO], πένθος [penthos], πότιος [poti, mos], ἀκτίς [aktis], πέρασμα [pepæsm, ma], βλάπτω [blept, o], δάκνω [dakno], μυμνέσκω [mim’nes,kO], ἀφτος [afクトos], Βάχχος [bakkhos], Σάπφο [sapphO], συνέργοι [swener,kho,mei], ἐξετάζω [eksetædz, ë], ἐπάρχη [epæk, the, eprek, the], ἐθέρψασθε [eth’rep, ses, the], γέγραψε [ge,græps, the, ë], ἡθὲνεξ [teth’neks, O, ë], ἐσθιλός [esthlos].
Stress and tonemes

5.6. Usually, common grammars show and explain (completely, but even boringly) the different kinds of accents, actually *tonemes* combined with intensive stress (although absurdly and unadvisedly they seem to imply that intensity is not present). However, our chief aim is to accurately describe what the *tonetic* situation really is.

Happily, in modern editions of ancient-Greek texts, the spelling used clearly shows what we have to know. Thus, we simply transfer to grammars the task of boring people who want to acquire (or have already acquired) how to use the written tonemes, when learning to actually practice the language, instead of merely reading and pronouncing it accurately. To both kind of people we will give what grammars do not succeed in providing satisfactorily enough (while they present all the peculiar changes that words are subject to).

So, our examples will just show the nature and position of the graphic accents, without dilating on that subject, but simply providing useful transcriptions, which have to be examined very carefully. In fact, there are several ‘laws’, which add ‘explanations’, in addition to those for contraction, shortening, lengthening, crasis, elision, &c.

But (considering § 2.8 and § 2.1-2), first let us carefully analyze § 5.1, which shows the three marked tonemes, that occur in stressed syllables (⟨α⟩ /VV/ [V(V)], ⟨α⟩ /VV/ [V(V)], ⟨α⟩ /VV/ [V(V)], and the unmarked toneme, that occurs in unstressed syllables. Thus, we have ⟨`⟩ /VV/ [V(V)], ⟨`⟩ /VV/ [V(V)], ⟨`⟩ /VV/ [V(V)], ⟨`⟩ /VV/ [V(V)], ⟨`⟩ /VV/ [V(V)].

5.7. Examples: στόρνυμι /stornymi/ [stornymi], στορένυμι /storënnymi/ [storënnymi], γνόντες /gnontes/ [gnontes], ναύς /naus/ [naus], λυθέμεν /lu.themen/ [lu.themen], ἱππος /hippos/ [hippos], πέλλα /pella/ [pella]; λεώς /leös/ [leös], βασιλέα /basilea/ [basilea]; μέλας /melas/ [melas], ἐφηνα /ephe:na/ [e.phenα],
5.8. **Crais examples:** χοί /khoi/ [khoi] or χώ /khoi/ [khoi] (from καὶ οἱ /kaioi/ [kaioi], τάγαθα /tagathα/ [tageithα], οὕμοι /huomoi/ [huomoi], ταύτο /tauτo/ [tauto], χήμεια /khe:meis/ [khe:meis], θημέραι /theimerai/ [theimerai].

**Elision examples:** ἐπὶ /epe/ [epe], ἅλλα /allα/ [allα] /allatoι/ [allatoι], ἀπ’ ἡμῶν /ape:mon/ [ape:mon], βουλοῦ έγώ /buulo me:go/ [buulo me:go], μ’ έδελαν /methelen/ [methelen], ἐφιπποῦ /ephippou/ [ephippou], ἀφ’ ἀπ’ ἀποθέσεις /aphθεσις/ [aphθεσις], ἀφ’ ἀποθέσεις /aphθεσις/ [aphθεσις], μέσ’ ὁμόν /methου:mon/ [methου:mon], νύχ’ ὀξεῖν /nuχ tholein/ [nektholen, nek tholen], τίθ’ οὕτως /titthουτος/ [titthουτος], ἦ γώ /ego/ [ego], μ’ σεθεί /mesethie/ [mesethie], ποῦʼ στι /puusti/ [puusti].

5.9. Grammars teach the following fact, but it is important to explain it adequately: any word with an acute accent on its last syllable, necessarily, change that accent into the grave accent, even if it were followed, without a pause, by a stressed word.

Examples: ἔργου κακῶν /ergon kakovon/ [ergon kakovon], κακῶν ἔργον /ka ko ʼergon/ [ke ko:nergon, ke ko:], κακῶν τι ἔργον /kakonti ʼergon/ [kakonti ʼergon] (with no change, due to the enclitic τι).

More examples: πόλεμος /polemos/ [po:lemos], πολέμου /polemou/ [po:lemu], πολέμεως /polemeoς/ [po:lemeoς], γάμος /gamou/ [ga:mo], γάμω /gamow/ [ga:mow], φέρομεν /pheromeνe/ [pheromeνe], φερομένη /pheromene/ [pheromeνe], παῦ /pauw/ [puw], παῦ! /pauw/ [pauw], παῦ! /pauw/ [pauw].

5.10. And: ἀμίλλακα /hamillai/ [he:millai], φησίν /p:sephi/n /p:sephi/ [p:sephi], λύμας /lύmaς/ [lýmaς], λυθναί /luthnai/ [luthnai], χαμαί /kha:mai/ [kha:mai], δείκνα /deik-ai/ [deik-sai]. Let us observe that, metrically, except for the last example (an optative form), all the others are forced to end as: η, ωι (for just a single mora, [CV]) instead of [ει, οι], which, however, are certainly not hiatuses with two syllables, but just normal diphthongs of one (normal) syllable: [VV].

Also: ἄνθρωπος /anthropos/ [anthropos], ἄνθρωπον /anthropon/ [anthropon], ἄνθρωποι /anthropoi/ [anthropoi], ἄνθρωπος /anthropus/ [anthropus], ἄνθρωπος /anthropois/ [anthropois], ἄνθρωπον /anthropon/ [anthropon].
More: πατράσι /patrasi/ [patrasi], αἰόλος /aiolos/ [aiolos], ἀντίος /antiōs/ [antiōs], ἑρωμένος /erōmenos/ [erōmenos], λέγωμεν /legomen/ [legōmen], λελυμένος /lelymenos/ [lelymenos], ἀριστερός /aristeiros/ [aristeiros], σωτῆρα /sotēra/ [sotēra], νῆς /nees/ [nees], εἶμα /eima/ [eima], ὀστὲ /hoste/ [hoste].

Further examples: ἡδὲ /hedē/ [hedē], πολίτης /polītes/ [polītes], πολίται /polītai/ [polītai], κλωψ /kloψ/ [kloψ], ἕγωγε /ēgōge/ [ēgōge], ὁμοίως /homoiōs/ [homoiōs], ἔτοιμος /hetoimos/ [hetoimos], ἐμοί /emoï/ [emoï], ἐρημός /eremōs/ [eremōs], ἀγροίκος /agroïkos/ [agroïkos], παντοῖος /pantoiōs/ [pantoiōs], αἰδίοις /aidiois/ [aidiois], ἐφιλείς /ephielēs/ [ephielēs], ἐφιλείσθη /ephielistheon/ [ephielistheon].

And: βασιλέως /basileōs/ [basileōs], _στοῦν /στοûn/ [sustoûn], ἕρμενεύς /ērmeñeûs/ [ērmeñeûs], πολυτείς /poluteîs/ [poluteîs], πολύται /polutoûs/ [polutoûs], κλωπ /kloph/ [kloph], ἐρωτέω /ērōtēo/ [ērōtēo], ἀλλοίων /alloiōn/ [alloiōn], αὐτοῖς /auteîs/ [auteîs], ἔλεσθά /elēsathâ/ [elēsathâ].

Or: ἥπειρα /hépeira/ [hépeira], ἀνδρέας /handreas/ [handreas], χωτί /khōti/ [khōti], τάλλα or τάλλα /taallâ, taallâ/ [taallâ, taallâ]; φοβερὲ ἔλεξακ /phobe're lelexaç/ [phobe're lelexaç], πόλικ /pollik/ [pollik], τὰ δεῖν ἐκεῖνα /ta δēn ekεîna/ [ta δēn ekεîna].

5.11. Arguably, words are syllabified following the natural phonic way that we adopt in our transcriptions. For the graphic syllabification of Greek, things are the same, although some grammars, incredibly (and absurdly) suggest not to separate clusters that may also occur in word-initial position (which we saw under § 4.17).

Such grammars even intend to extend this absurdity to phonic matters, which is decidedly worse, indeed. Clusters of different or geminate consonants are regularly separated, while clusters with /r, l, h/ are kept together (/r, l, h/) (while those with /m, n/ are separated (/m, n/)).

Even in word-initial position, after a pause, our clusters behave the same way (of course without their first element becoming intense, or ‘syllabic’). In fact, we find: τύπτω [typ'tɔ], ἔβ-δο-μος [hebdo'mos], ἔ-πράκ-θη [e-praktʰē] /kθē/; βεβλήσ-thε [bebles'the]. However, only graphically, prefixes are usually separated: συν-εχής [sunekheîs], κατα-βάλλω [katavallâ], ἀπώμο-τος [apomo'tos] (but also ἀ-π-ώ-μ-ο-τ-ος), and: δύσβατος [dysbatos], ἔξ-άγω [eksegâ].

Even in word-initial position, after a pause, our clusters behave the same way (of course without their first element becoming intense, or ‘syllabic’). In fact, we find: τένω [tenɔ], but πλέω [pleɔ]; besides, look carefully at: μετά πνοής ἀνέμων [metâ pneîs anêmōn], ἐν Πυκνὶ [empykon].

5.12.1. Here are some examples showing different stress or toneme patterns, including their possible combinations, and other prosodic things.

Stress: νόμος /nomos/ [nomos], νομός /nomos/ [nomos], εἶμι /eimī/ [eimī], εἶμι /eimī/ [eimī], ἀψις /hapsis/ [hapsis], ἀψις /hapsis/ [hapsis], κακίον /kakion/ [kakion], κάκιον /kakion/ [kakion].

Tonemes: φῶς /phŏs/ [phŏs], φῶς /phŏs/ [phŏs], ὀ /ho/ [hɔ], ὀ /ho/ [hɔ].

5. Structures
δού /duu/ [duou], δόου /duuu/ [dou]; ἰ assets /i asset/ [i asset]; ἱτε /eet/ [eet]; ἱτε /eet/ [eet]; ὀκο /oikoi/ [oikoi], ὀκο /oikoi/ [oikoi]; τεμον /temon/ [temon], τεμον /temon/ [temon]; λύσι /lusai/ [lusai]; λύσι /lusai/ [lusai].

Stress and tonemes: ἰνω /thn/ [thn], ἰνω /thn/ [thn]; ὀσ /os/ [os], ὀσ /os/ [os].

Let us add these examples, for /h/ and /`, `, too: _røw /øros/ [øros], ᴾrow /pøs/ [pøs], ᵅrow /høros/ [høros], ᵅrow /høros/ [høros]; and one for /V, V/: ἀν (particle) /an/ [an an], ἀν (conjunction: ἀν/ /an].

5.12.2. It may also certainly be worth thinking (well) about the following examples, too: ἀκαια /akhaia/ [akhaia], ἀκαια /akhaia/ [akhaia]. And: ἀνθρωπος τις /anthropos/ [anthropos], ἀνθρωπος ἐστι /anthropos/ [anthropos], πιμα τι /pimati/ [pimati], πιμα ηστι [pimastei] [pimastei], μοι ἐστι /moiesti/ [moiesti], εἰ τινος /eitinos/ [eitinos], εἰς τινα /eistina/ [eistina], ὡς οὐκ αἰσθανόμενος /ousuukaisthano/ [ousuukaisthano], ὡς ης μάχην /hoseisma- khen/ [hoseismakhem], οὐκ ἀπε πολεμίους /oukhoose-polemious/ [oukhoose-polemious].

Also notice: τις τι μοι φισαν /tistimoiphesin/ [tistimoiphesin], εἰ πέρ/περ τις τι μοι φισαι /eipertisimophasin/ [eipertisimophasin], φινιγ γε /phoinikge/ [phoinikge]. And: πόλεως τις /poleostis/ [poleostis], πιχε ς τινος /pekeheostis- tinos/ [pekeheostinos], νηρεις τις /nereistis/ [nereistis], λαίλαφ ἐστι /lalap- sesti/ [lalap- sesti], αὐλαξ τινι /aulakstini/ [aulakstini] (not with τις, ἐστι, τυι).

5.12.3. To determine the place of the accent in Greek words (although we find it clearly written, by now), the vowel of the last syllable (not the last syllable itself) is determinant, including words like: ὕλεις /huleis/ [huleis], ἕλιος /elioio/ [elioio].

Thus, if the last vowel is long or a diphthong, we can have: either /, /, /, an on the last syllable, or /, /, / on the penultimate one.

If the last vowel is short, we can have: /, /, / on one of the last three syllables; but /, /, / on the penultimate syllable, if it has a long vowel or a diphthong.

Examples: τιμή /timi/, καλον /kaluo/ [kaluo], ἀγαθος /agathos/ [agathos], τιμη /timi/, ἀγαθος /agathos/ [agathos]; καλον /kalos/ [kalos], ἀγαθος /agathos/ [agathos]; ἀνδρωπον /anthropon/ [anthropon], ἀγ- γελω /angelos/ [angelos], τόνον /tonon/ [tonon], ἀνδροπονος /androponos/ [andropo- nos], τόνον /tonon/ [tonos]; πῆμα /pema/ [pema], κατώριξ /kato-riks/ [kato-riks]; ἀνθρωπος /anthropos/ [anthropos], ἀγγελος /angelos/ [angelos].

Clitics

5.13. Clitics are short and unstressed functional words (gammemes) written with no accent, and are pronounced together with the stressed words (lexemes).
The following are proclitics. Articles: ὰ [ho, ἄho], ἰ [he, ἰhe], ο [hoi, ἄhoi], σ [heoi, ἀheoi]; prepositions: ἐκ or ἐξ [ek, eks], ἐν [en, en, em, en] (by assimilation to a following consonant), ἐς [es, es], ἐς [hso, ἀri, -ς]; conjunctions: ἐ [ei], ἐς [hso, ἀri, -ς]; negatives: ού, οὐκ, οὐχ [ uom, uk, ukh).

Arguably, even the other grammemes, although written with an accent, are proclitics: articles, prepositions (except ἀμφ, ἀντί [emphi, ethi]), conjunctions (as ἀλλά [el], ἐπι [epi], ἦ [ε], καί [kai], ουδέ [ude], μηδέ [mede] (including others belonging to the epic language); negation μη [me].

Proclitics do not modify the stress pattern of the words that follow them. When they are followed by enclitics, their stress remains: ἐτης [etiis], εις [eiis], ους [ous], ους [ous], οι [hoi], οι [hoi], σφας [sphas], σφιν [sphin], σφι (sphi); the bisyllabic forms of the indefinite pronoun τις, τι (with -νες, -νας, -νος, -νον, -νον, -νοι, -νοι, and possible secondary stress depending on contiguous syllables for alternation).

Also: bisyllabic forms (with no accent) of the present indicative of εἰμι [eimi], and φημι [phemim] (except the 2nd person εί [ei, ei], φης [phes, phes]; the following indefinite adverbs: που [pu], πη [pei], ποι [po], πο [po], ποτε [pote], ποθὲν [pothen]; the particles: γε [ge], τε [te], υν or νυ [nu(n)], περ [per], ἐκ [ek], τοι [to]. Also the suffix -δε [de].

5.14. The following are enclitics. Personal pronouns: με [me], σε [se], ε [he, ἰhe], μου [mu], σου [su], ο [uo], οι [oi], οι [oi], σφας [sphas], σφιν [sphin], σφι (sphi); the bisyllabic forms of the indefinite pronoun τις, τι (with -νες, -νας, -νος, -νον, -νον, -νοι, -νοι, and possible secondary stress depending on contiguous syllables for alternation).

Also: bisyllabic forms (with no accent) of the present indicative of εἰμι [eimi], and φημι [phemim] (except the 2nd person εί [ei, ei], φης [phes, phes]); the following indefinite adverbs: που [pu], πη [pei], ποι [po], πο [po], ποτε [pote], ποθὲν [pothen]; the particles: γε [ge], τε [te], υν or νυ [nu(n)], περ [per], ἐκ [ek], τοι [to]. Also the suffix -δε [de].

5.15. Notice that ἐστι [esiti] becomes ἐστι [est], when it is at the beginning of a sentence, or when it means εξοστι [ekesit] (‘it can/may be done’), or when it is preceded by καί [kai], μεν [men], ού/ο/οยว [ou, uk, ukh], ει [ei], ους [ous], ους [ous], οι [hoi], οι [hoi], σφας [sphas], σφιν [sphin], σφι (sphi); the bisyllabic forms of the indefinite pronoun τις, τι (with -νες, -νας, -νος, -νον, -νον, -νοι, -νοι, and possible secondary stress depending on contiguous syllables for alternation).

After words stressed on their last syllable, all enclitics have no stress (nor accent): θεός τις [theostis], θεός φης [thosphi], θεόν τις [theontis], θεοί τινς [theon], θεόν τινς [theon], ἄγαμος [amass], ἀκινητόν [akinotin]. See also: ου φης [ouphes], φης [phes].

We also have: λόγος τις [logostis], ει τις [etis], ενθεστις τις [enthestis], δήμος τις [demos], ει ἐστι τινς [esintis], ἔρως τινς [erons], δώρων τινς [dorwn], δήμου τινς [demostis].

5.16. The following cases, which are described as stressed on the penultimate syllable, but (colloquially) are actually stressed on their last syllable with a diphthong (-ις, -ις) or a triphthong (-ις, -ις). The following are interesting, too: νεανίς τις [neanis], νεάνια τινς [neaniais], νανίς τινς [nanis].

After a pause, or an elided preceding word, an enclitic has to use a stress (and accent): τινς λέγουσιν [tines], ἀλλά είσι πολλοί [alleis, polloi].

Let us also observe carefully the following cases: βατραχός τις [btrakhostis],...
βάτραχος τινες [βατραχοί τινες], νήσος τις [νήσος τις], νήσοι τινες [νήσοι τινες]; φίλος τις [φίλος τις], φίλου τινός [φίλου τινός].

The interrogatives τίς [τίς] and τί [τί] (including τοῦ [τοῦ], τω [τω], and their bisyllabic forms) are always stressed and accented.

**Intonation**

5.17. Considering well § 2.9-15 and fig 2.3-4, let us examine carefully fig 5.2, which shows the tonetic differences for the four protunes, and (at the bottom) the four tunes. The protunes are modified as shown: the ‘normal’ one (/ We/) is a little

![Fig 5.2. Ancient Greek protunes and tunes.](image-url)

![Fig 5.3. Ancient Greek tonemes: their taxotones combined with the tunes.](image-url)
compressed towards the middle part of the tonogram, while the interrogative one (/¿/) is a little raised, as can be seen. Let us notice that the emphatic protune (/˚/) does not present any modification, in comparison with the other two. Lastly, the imperative protune (/¡/) is characterized by a descending movement.

It is important to notice well that the four tonograms on the left also show the different movements of toneme /\[/ (\), including the unmarked and unstressed toneme /// (\). The tonograms in the middle show the movements of toneme /\[/ (\), while those on the right, obviously, show the differences for toneme /\[/ (\).

**Sentences**

5.18. Let us, now, consider (always very carefully) fig 5.3, which shows how the four tonemes are modified, when they occur in each of the four tunes. In fact, their movements amalgamate with the typical movements of the tunes.

The tonetic notation of the four tunes must be interpreted as indicating just the typical movements: falling [], rising-falling [\], rising [\], and middle (unchanging) [], certainly not real movements from high to low, nor low-high-low, nor low-high...

5.19. Here are some sentences illustrating the use of intonation in classical Greek, following our reconstruction.

Bouloímen ðv en ἐλληνίζειν ἐπίστασθαι.
[bu'loim.en, en.el'li.ni.zai, ne'pi.stai] (I’d like to speak Greek well)

"Ισμεν τι λέγειν βούλη.
[is.men, ti.le.gi.ni, bouli] (We know what you mean)

Χάριν σοι ὀτι πλείστον ἔχω.
[kha'ri.ni.soai, ho'ti, pleis.to 'ne.kho'] ([fi,o,ti]) (Thank you very much)

Τι δοκεῖς περὶ τούτου;
[ti.do.kei.s, pe.ri.tou.to'] (What do you think about it?)

Πῶς ἔχεις τῆμερον;
[po'se.kheis, te.e.me.ro'n] (How are you feeling today)

Ποῦ ἴσμεν;
[po'u.me.n] (Where are we going?)
Can you speak Greek?

Does your brother understand it?

Is he coming tomorrow?

If you can’t come on Saturday, we’ll be in trouble.

When I came to the harbor, the ship had gone.

Sall we go by coach, or on foot?

There are: one, two, three, four, five.

There are: one, two, three, four, five...

If you can’t come on Saturday, there’s no problem.

Are we going by coach, by ship, or on foot?

This is a very useful dictionary.

This is a very useful dictionary.

This is a very useful dictionary.
Τόδε λεξικόν τῷ ὄντι ὕφελμόν ἔστι.
[to.de.lek.sin.kon.ton.pi.on.phe.li.mo.nes.te]  
(This is a very useful dictionary)

Οὐ δῆτα, εἶπε, οὐκ ἔπραξα τούτο.
[ou.de.te, eipe, ouk epraixa touto]  
(No, he said, I haven't done it)

Ναι δή, ὡς φιλότης.
[naei.dei, ohs philotes]  
(Of course, my dear)

Ναι δή, ὡς φιλότης. Αὐριον δέξῃ ἐμὸν δῶρον.
[naei.dei, ohs philotes, auriou dexei emon dورو]  
(Of course, my dear. Tomorrow you'll have a present)

Ναι δή, ὡς φιλότης, αὐριον δέξῃ ἐμὸν δῶρον.
[naei.dei, ohs philotes, auriou dexei emon dورو]  
(Of course, my dear, tomorrow you'll have a present)

Ἐπ’ ἀληθείας, εἶπε, ἀπορίας τινὰς ἐχω.
[epi aletheias, eipe, aporiaς tinas echω]  
(As a matter of fact, he said, I'm not at all sure)

Ὡς φιλότης, ἀρ’ οὗ ἀναμιμνήσκῃ, ὅτι ἐβλέψαμεν ἐκεῖνον πίνακα ἐν τῇ παρελθόντι ἐβδομάδι ἐβλέψαμεν;
[wsi philotes, ar’ ou anamimnēskē, hoti eblesamen ekeinen pinaka en tē parelthoni ebdomađi eblesamen]  
(My dear, don’t you remember we saw that picture last week?)

'Ἰνα τι εἶπης ὡς μὲν μὴ δέν, παρ’ ἔματον αἰτῶ, τούναντίον ἀληθεύοντος;
[ina ti eipēs wos men mē deñ, para’ ematon aitō, tonantion alethevon]  
(Why did you say 'I don't mind', I wonder, when the opposite is true?).
6. Texts in phonotetic transcription

‘The North Wind and the Sun’

6.1. Let us start with the passage that the International Phonetic Association uses to illustrate the languages to be dealt with: The North Wind and the Sun. It is traditionally used, although it is not the most recommendable one, but we add at least two total questions at the end, not to ignore intonation. Obviously, it is useful and necessary to observe it very carefully.

6.2. Here is the English text (in a non-literal translation from Greek).

The North Wind and the Sun were disputing which was the stronger, when a traveler came along wrapped in a warm cloak. They agreed that the one who first succeeded in making the traveler take his cloak off should be considered stronger than the other.

Then the North Wind blew as hard as he could, but the more he blew the more closely did the traveler fold his cloak around him; and at last the North Wind gave up the attempt. Then the Sun shone out warmly, and immediately the traveler took off his cloak. And so the North Wind was obliged to confess that the Sun was the stronger of the two.

Did you like the story? Do you want to hear it again?

6.3. And here is the Greek text. Let us carefully consider the nature of our narrow diphthongs (in the vocograms, in θ ʒ):

\[ e \mathbf{i} [\text{i}], o u [\text{u}], \eta-\rho l [\text{ee}], \xi-\alpha l [\text{aa}], \phi-\omega [\text{oo}] \] (rather than [ee, uu] and [ee, aa, oo], or [ei, uε] and [ει, αι, ωι]).

They are similar to those of many modern languages, like English, Dutch, Swedish, Turkish, Hindi, still described too often as if they were really ‘long vowels’, [V], instead of real narrow diphthongs, [VV]. We also simply show that English ‘[i, uε]’ are actually /ii, uu/ [ii] and [uu, μu], respectively. Nobody can deny this obvious fact.

Вореаς καὶ Ἡλιος περὶ δύναμεως ἤριζον· ἔδοξε δὲ αὐτοίς ἐκεῖνω τὴν νίκην ἀ- πονείμας, ὡς ἄν αὐτῶν ἀνθρώπων οδοιπόρον ἐκδύσῃ. Καὶ ὁ Βορέας ἀρέξαμενος σφο- δρός ἦν· τοῦ δὲ ἀνθρώπων ἀντεχομένου τῆς ἐσθήτους μᾶλλον ἐπέκειτο.

Ὡς ὢτο τοῦ πυρὸς καταπονούμενος ἔτι μᾶλλον καὶ περιττοτέραν ἐσθήτα προ- σελάμβανε, ἐς ὀποκαλύφῳ ὁ Βορέας τῷ Ἡλίῳ μεταπαρέδωκε. Κάκεινος τὸ μὲν πρῶτον μετρίως προσέλαμψε· τοῦ δὲ ἀνθρώπου τὰ περισσὰ τῶν ἴματων ἀποτεθε- μένου σφοδρότερον τὸ καύμα ἑπέτεινε, μέχρις οὐ πρὸς τὴν ἄλεαν ἀντέχειν μὴ δυ-
Some conversations

"Ο μὲν διδάσκαλος δείχνει μάθημα, οί δὲ παιδείς ἀπαγγέλουν:
"Πι, ὁ μικρόν, λαμβδά, ὁ ψιλόν, μῦ, ἥτα, ἴωτα, σίγμα· πολὺ-μη-τίς Ὠ-δυσσέας."  
"Εὖ λέγεις, ὦ παιδεῖς!"

(The teacher indicates the letters, and the kids read:
'πι, ωμικρόν, λαμβδα, υψιλόν, μο, ἦτα, ἴωτα, σίγμα: ιστι το αστυτ Οὐλίσσεα'.
Quite well, kids!)

Oi pai̱des akou̱souni tê kai garfou̱si. Mαnthou̱sou̱i gar oi pai̱des tê gráfein.  
"O δε διδάσκαλος ἐρωτά τὸν Φίλλον: 'Τι ἐστιν, ὦ παι, τὸ πρῶτον γράμμα;"  
"Τὸ ἀλφα πρῶτον ἐστιν, ὦ διδάσκαλε", λέγει ὦ Φίλλος.  
"Εὖ λέγεις, ὦ Φίλλε."
'Ο δὲν ἀπορεῖ ὅνων σωμάτι. Καὶ τέλος λέγει τάδε: 'Ομ Μοί...

'Έλε γέρεις, ὁ Κότταλος. Τὸ ὁ ἑστὶ τὸ ὑστάτον.

(Now, the teacher interrogates Kottalos. But Kottalos does not master the letters. 'Do tell me which is the last letter?' He does not know what to answer. At last, he says so: 'Oh, dear...' 'Correct, Kottalos. ο is the last one.')

Πολλάκις δὴ λέγει ὁ παιδοτρίβης τοῖς παισὶ τάδε: 'Οι καλοὶ κἀγαθοὶ γυμνάζουσιν τὰ σώματα. Ὁ γὰρ καλὸς κἀγαθὸς ἔχει αἱ στήθος λυπαρὸν, χρώτα λαμπρὸν καὶ ὁμές γεμάλους.

Τοιούτους οὖν λόγους πειράται πείθειν τοὺς νέους ἀὐλητάς.

(Often the training master tells the kids so: 'Valiant [handsome and good] people work out'. In fact, a valiant person must have a shapely breast, a good color, and broad shoulders. With such words, then, he tries to convince young athletes.)

'Ο οὖν Κότταλος λέγει τῷ παιδοτρίβῃ τάδε: 'Ἐλαίον ἦμιν ὧν ἐνεστίν ἐν τῷ ἄρυ-

βάλλω: διὰ τοῦτο αἰτούμεν σὲ ὁλίγον τοῦ ἐλαίου, ὁ παιδοτρίβης.

'Τὸ μὴ ἀμελεῖν μᾶθετε, νῦ τὸν Δία! Ἄρ' ὀραῖς τὸ ὑφίκον τοῦτο;...

'Νῦ τὸν Ἡρακλέα, ὅρα!...

'Ἐνταῦθα ἐστὶ τὸ ἡμέρερον κοινὸν ἐλαίον. Ἀγεῖτε δὴ, ταχέως λάβετε!

(Therefore, Kottalos says so to the training master: 'There is no more oil in the bottle; so we ask you for some, master'. 'Learn not to be careless, by Jove! Can you see this tiny door?' Ye, by Herakles, I can see it.

'There is our common oil, there. Now then, take it, quickly!')
Τής ὁρᾶς οὖσης σταδιοδρομεῖν, ὁ παιδότριβης κελεύει τοὺς δρομέας ἐτοιμάζεις· ὃι μὲν, δρομεῖς ὄντες, παρασκευάζονται πρὸς τὸν δρόμον· ὁ δὲ, ὁ μετέχον·

tες τοῦ δρόμου, ἀφίστανται· τα καὶ μέλλουσι παρορμᾶν αὐτούς.

Now ὁ ἤτοι ἰστανται κατὰ σταθεῖν ὁι δρομεῖς. «Σιγάτε δὴ!», λέγει ὁ παιδότριβης καὶ

σηχώσιν αἱ πολλοὶ τῶν ἐν τῷ σταδίῳ, ὁ ἐγγὺς τῆς παλαιστράς κεῖται.

(As it is time to run in the stadium, the training master orders the runners to get ready. Some, who are runners, get ready for the run; others, who do not take part in the run, move aside to encourage them.

Now the runners line up. ‘Silence!’ shouts the master, and many of them shut up in the stadium, which is near the gym.)

'Ω Ἀριστίππε, δεῦρ' ἔλθε!'
'Tί δὲ, ὃ διδάσκαλε;'
'Ὡρα ἐστὶν παύσεσθαι. Σὺ, καὶ Φίλλος καὶ Κότταλος, φέρετε δεῦρο τὰς ύδριας·'
'Αρα λαμβάνομεν καὶ τὰς στλεγγίδας·'
'Πάνω γε, στλεγγίδας τε καὶ σπόγγους λάβετε. '
'Ναι!'
'Καὶ λέγω πάλιν ὑμῖν ὅτι χρὴ τοὺς νεωτέρους ὑμῶν σπόγγους χρησθῆναι ἀντὶ στλεγγίδος, καὶ μὴ ἄγαν τραχέως χρησθῆναι τὸ σῶμα!'

[{'εριστιπ,pei·,deur,rel,θε,'}]
[{'τι'de,'} לי'des,ke,l']
[{'ha,ra,es,ti,pha,ws,te,ri'}] 'suh, kεrphillos, kεrkktolos,'pere,te,deu,ro·tash,drjas,']
[{'za,rem,be,mo,men·,ke,ta,s(ss),tlen,gi,des,'}]
[{'pe,nug,ges·tlen,gi,des·te,krispon,guz·le,θe,te,'}]
[{'μεν'}]
[{'ker,le,go·pel,lin·hu,miin·hoti·khre,tuz,ne,cte,us·hu,mcns·pon,gois,khr,esthe,i·jep,ts,tken,gi,des·}]
[{'ke,me,ve,gen·tre,he,ksc·khr,ijes,θ ei,tos,seo,ma,'}]

('Aristippus, come here.
'What's up, master?'
'It's time to stop. You, Phillos, and Kottalos, bring here the jugs of water.'
Shall we take the scrapers, too?
'Sure, take scrapers and sponges, as well.'
'Yes!'
'I repeat that the youngest of you have to use a sponge, rather than a scraper, and they mustn't rub too hard their body!')
'Αρ' οὖν, μεταμέλει σοι τῶν πεπραγμένων;
'Εγώς, ο διδάσκαλε, εύ οἶδα ὅτι ἐξήματον δία τὴν βλαχίαν τοῦτο ποιών.
'Οὕτω κἂν, εἰ μὴ ἐκόλαζον, ἡδίκουν ἂν.
'Φαίνεται.
'Καὶ δὴ καὶ τὸ ἀδικεῖν κάκιον τοῦ ἀδικείσθαι, ἢ οὖ;'
'Ανάγκη.
'Αλλ' ἄκουσον πείθειν μὲν σε βοῦλομαι, κακῶς ποιεῖν δ' οὖ.
'Ομολογήσω σοι.
'Ελπίζω τούν σε βελτίων ποιήσειν τῷ λόγῳ.'

('Now then, d’you repent of what you’ve done?'
'Sure, master, I do know I was wrong doing that, owing to my laziness.'
'So, I’ d be unjust, as well, if I shouldn’t punish you.'
'It’s obvious.'
'It’s certainly worse to do an unjustice than to be subjected to that, or not?’
‘That’s so.’
‘But listen: I want to convince you, not to mishandle you.’
‘I’ll agree with you.’
‘I hope, then, to make you better through reasoning.’)

'Ὁ παιδαγωγὸς ἀπάγει τὸν Ἀρίστιππον οἰκαδε. Πορευόμενοι δὲ κατὰ τὴν ὁδόν,
συντυγχάνουσι ταῖς τῶν ἑαυτῶν ὀικτῶν τῷ μὲν στεφάνους φέροντι, τῷ δὲ
λαμπάδας ὄνυμομένω, τῷ δὲ διαλεγομένῳ ταῖς γυναιξίν ταῖς εἰδισμέναις παρὰ
πότον φάλλειν καὶ αὐλείν.'

('The teacher takes Aristippos home. Walking along the road, they meet some of
their servants, one is carrying some crowns, another buys some torches, ano-
ther one is talking to some women, who are used to sing and pluck and blow
their instruments.)
Ἀρίστιππος οὗ Καλλίου εἰσέρχεται οἶκαί, οὗ μένουσιν ἢ τε μήτηρ καὶ αἱ ἀδελφαί. Ἐπειδὴ μέντοι οὕπω ἐπανήλθεν ὁ πατήρ, ἐν τῇ αὐλῇ παίζει τὰ τέκνα, τὸ μὲν κόρη τινί, τὸ δὲ ἀστραγάλοις καὶ λίθοις.

تلكlay αὐτῶ πλούσιοι ἐστίν, ὡστε κέκτηται μέγιστον οἶχον. Καὶ γὰρ τὰ τοῦ γένους κτήματα οὗ μόνον ἐν ἄστει πολλά ἐστιν, ἄλλα καὶ ἐν τῇ Ἀττικῇ. Πάντες δὲ περιμένουσι φίλων τινάς, οὗς ἐκάλεσεν ὁ Καλλίας ἐπὶ δεῖπνον.

(Aristippos, son of Kallia, gets home, where his mother and sisters are waiting. Since his father has not got back yet, the daughters are playing in the garden, one with a doll, the other with dice and stones. Kallia is so rich that he owns a very large house. In fact, his family property is huge, not only in town [ie Athens], but also in Attica. All are waiting for some friends that Kallia invited.)