

The sound of Greek

A critique of Greek phonology.

This essay has three main aims. The first one is an explanation of the Modern Greek pronunciation, as this is often ignored or known only superficially by many of those who attacked Modern Greek as a degenerated language. The second aim is to address some of the text interpretations made by the followers of the Erasmian pronunciation of Ancient Greek. The third aim is to present some unresolved issues regarding the origin of the Greek language, which is classed as Indoeuropean but when first recorded in writing it was already mixed with non-Indoeuropean languages.

There is no attempt in this essay to claim that Greek pronunciation has not changed over time. Rather I claim that in as much as the Erasmians hit upon some facts, they did so haphazardly and accidentally, as Greek pronunciation has not changed significantly in the time they considered the change to have occurred – in medieval times. This essay supports the view and discusses the evidence that Greek pronunciation changes as they have been found in the record coincide with a period of other changes in grammar, vocabulary and dialects that were occurring in Hellenistic and pre-Hellenistic times (approximately up to the Roman conquest of Greece), an essential error that should have questioned the continuing adherence to Erasmian theory other than as a simple convention for new or inexperienced students.

The Erasmian theorists originally had assumed, like Erasmus himself, that the distinctiveness of the Modern Greek pronunciation was a result of degeneracy, of a slurring of the speech perhaps or some other mental defect of the contemporary Greeks who had fallen into general error and had separated themselves from the true Faith (whether Catholic or Protestant). These Greeks no longer produced works such as those of Plato, Aristotle and the New Testament. By extension, the Erasmians politically removed these works from the sphere of the Greeks as the warrantors of that tradition. However, if the pronunciation and other changes were significant only at around the time of 2-4th C BC or earlier (the alphabet had been adopted at around the 8th C BC), the Byzantine Greeks have quite on the contrary preserved the language and scholarship to a high degree. In fact there was a university in Constantinople in Byzantine times and lesser schools elsewhere in addition to the Church. This should set the record straight, for this was once partly an issue of politics and cultural prejudice. This realisation also begs the question: how did then the distinctiveness of the Greek pronunciation in relation to the vowel and consonantal diphthongs and especially in relation to the fricative pronunciation of many of the consonants arise, if it was not after all due to mental laziness?

The Erasmian pronunciation

Erasmus introduced the issue of the pronunciation of ancient Greek in his work *De recta latini graecique sermonis pronuntiatione* (Basel 1528). He did so in an attempt to restore, at least in his view, the genuine pronunciation of the Ancient Greek language.

His first proposal, discussed with other religious men in Paris during his studies was based on his own intuitions and received wisdom (or the lack thereof) from other contemporary scholars (or not) but in no instance in the study of the contemporary Greek pronunciation. In fact he appeared at first unaware of how contemporary Greeks pronounced Greek. He denounced the contemporary pronunciation as corrupt (pronunciation depravata).

His followers developed a detailed set of rules about how ancient Greek should be pronounced. Though these rules were not proposed by Erasmus, they were given his name as the “Erasmian” pronunciation of Greek. The difference in concept is that Erasmus intended to arrive at the correct pronunciation of Greek (whether that were possible or not) whereas his followers intended to assign a single sound to each of the 24 letters of the Greek alphabet in the belief this would be the way it was pronounced by an ideal Greek at an ideal moment and place in history (without defining who and what these were other than being ancient). In addition to being applied to all ancient dialects (Doric, Ionian, Aeolian and variants), these rules of the “Erasmian” pronunciation were applied also to the pronunciation of the Old and New Testament Greek, which were ironically Byzantine works and therefore most likely had been always pronounced in the contemporary way. Indeed this is the crux of the Erasmian error, for the Erasmians had little knowledge of the development of Greek and contrary to the facts as known today attributed the changes in the Greek language to Byzantine times and not to pre-Byzantine Greek. The actual case was that the Orthodox Church highly conserved the Greek language used in liturgy. With it the Church conserved, as has been borne out, the pronunciation of the language. This has remained essentially unchanged barring some remaining dispute, eg. that of Hatjidakis concerning the OI/Y pronunciation, since the Koine of Roman times.

The reasons for the adoption of the “Erasmian” pronunciation for Ancient Greek seem therefore political and pedagogical (ie. Germanising) more than anything else. The politics were a kind of excuse to steal away the New and Old Testaments from Orthodox scholarship, since the true language must have been corrupted by the Byzantine Orthodox church. The Byzantine Church was regarded as heretical and to follow its pronunciation of Greek would have been unprincipled no matter what the objections were. This was not entirely malicious. As the Byzantine Church had been seen to antagonise the Catholic Church, Byzantine scholarship (as opposed to Ancient Greek and the New and Old Testament) had been receiving no serious attention from the few men in the West who were literate, mostly catholic priests. Nevertheless, while one may excuse the ignorance of the early scholars, the insistence of later scholars is less justifiable while the facts were beginning to emerge. They insisted regardless upon the Erasmian argument, that the language had “degenerated” in Byzantine and modern times. I had a recent experience where a graduate student (not of Greek) presented the Erasmian argument of the degeneration of Greek in Byzantine times in a lecture at Magdelene College, Oxford in 2004, indeed at such great length that it left no time for questions. This has been simply a case of “if they differ from us and their education, culture and language differs from ours, they must be inferior”.

The main argument Erasmus presented was that the Romans transcribed Greek words in ways that did not correspond letter for letter with the Greek alphabet and moreover the contemporary pronunciation of Church Latin (in the 15th C AD) differed from the contemporary pronunciation in Greek. This pseudo-scholarly justification was compounded by the belief that men of the age of Erasmus, in Holland, Germany and England where he mostly lived, pronounced the letters of the Roman alphabet as the Romans must have done. Considering how many different pronunciations of the letters of the Roman alphabet one finds among the various European languages from Portugal to Scandinavia, a careful scholar should have rather more closely examined the pronunciation of his own alphabet, with which he might have been more familiar. The pronunciation the Erasmian followers adopted was moreover not always using Latin as its model but rather a partially arbitrary phonetic system, the key merit of which was that it was a very simple one.

Erasmus' essential starting point was that the Modern Greeks have several ways to write an /i/ sound. This tendency became called "iotacism", with reference to the letter iota. He and his followers even to this day did not understand the facultative pronunciation of these letters as /i/s, so to Erasmus this seemed as a redundancy. There seemed no reason why the presumed ancient genius that devised the Greek alphabet would have given different letters or combinations of letters the same pronunciation. He argued that some vowels and diphthongs now being pronounced as /i/ had been pronounced otherwise in ancient times, in such times when Greek works worthy of study were written – presumably and primarily at the time of the New Testament. There was of course no evidence of the time point when the contemporary "Modern Greek" pronunciation emerged and indeed no evidence that ancient Greek was pronounced in this or that way. It is likely that this argument justifying his pronunciation occurred after the fact. In all likelihood, Erasmus had probably been taught as a monk to pronounce Greek in a certain way, just as with Church Latin, although in Italy and elsewhere the contemporary "Modern Greek" pronunciation was sometimes favoured. The followers of Erasmus, whether Catholic or Protestant, would have been happy to dismiss the Byzantines. They settled for a simple pronunciation in which every vowel and consonant is pronounced as the individual corresponding letters of the Latin alphabet as used in their own part of central Europe. For example an iota should always be pronounced as an /i/, regardless of whether it is part of a diphthong or occurs in any other context for all Greek authors of note. In this way they created a convenient pronunciation, which at once severed all connections to living Greek and therefore any need to acknowledge any kind of authority to Greek Byzantine tradition.

Erasmian concept #1: Iotacism - Too many /i/s?

At the start of this critique, one must be cautious not to assume that if a certain orthography was used at a certain period, that orthography corresponded with phonetic pronunciation. One must also be aware that stone inscriptions on the whole, especially

early Attic¹ ones having statements being cast into stone, tend to be orthographically correct and consistent and relatively free of spelling errors, therefore difficult to use for a study of misspellings and what these may reveal about pronunciation. In other words, inscriptions normally tell us much about orthography but little about pronunciation. Misspellings in papyri are more informative regarding pronunciation, but papyri are not commonly available for earlier classical periods.

Ironically, even as the starting point of the debate was that of “iotacism”, the trend to pronounce other letters in a degenerate fashion as the iota, that is as /i/. The irony is that the Greek letter iota was transcribed in Latin in several different ways, as i, j or even e in diphthongs. It was now, however, proposed it should be pronounced in the Erasmian method always as /i/. Was this self-fulfilled prophesy insisted upon out of ignorance or design? This is from its inception a very odd decision that rejects the very principle with which Erasmus defended his pronunciation – that is that Latin rather than contemporary Greek should be used as the source for the correct pronunciation. I will show below that the Latin choices of i, j for the transcription of the letter iota correspond closely to two different Modern Greek pronunciations of this letter.

A further argument was made that other vowels (η and υ) and diphthongs (ει, οι and υι) are pronounced in Modern Greek as /i/, a habit denounced as “iotacism”, pronouncing them as the letter iota. And this was seen as a proof of the corruption of the Greek pronunciation. Why else should a language have so many letters standing for /i/? This is simplistic. Even assuming they are all pronounced always the same as /i/ (they are not always), this change could have been introduced very early in antiquity. The argument naively assumes uniform rules on spelling in ancient times and that there were no dialects and no differences in local alphabets. It assumes that pronunciation was corrupted after classical times rather than before them. It implies tacitly that modern Greeks are less learned and less conservative in the pronunciation rules so that these changed recently not at the time the alphabet was being introduced, when by definition almost everyone was an illiterate and would have been taking no heed of any such “correct” pronunciation rules for the letters. Moreover, what the followers of Erasmus dusted under the carpet or perhaps altogether ignored was that these various vowels and diphthongs are in fact not pronounced always as /i/s in Modern Greek. Each one of them has indeed its own rules.

The Iota (capital Ι, unaccented lowercase ι)

One of the letters pronounced as /i/ is the iota. It has indeed that pronunciation but only if it stands alone, between two consonants, as in the English words reap, feet, seep or the Greek words τίς, ασπίς, ακτίς, etc. In these instances it is transcribed in Latin as i.

¹ Attic was the type of Greek spoken in Attica, a region that included Athens. It has its own script, similar to other Ionian scripts. It is divided into early and late Attic. There are differences in the language and alphabet in the two periods, which had been gradual. For example early Attic generally used the character Η to denote an aspiration at the beginning of a word. Late Attic conformed to the use of Η as in other Ionian Greek alphabets. Aristotle and Plato wrote in Attic and there are more inscriptions in Attic than in other idioms.

The iota is also usually shortened and pronounced in an aspirated consonantal fashion when after a consonant but before a vowel. It is pronounced usually as /γι / (jot), /h/ (heth) or occasionally /χi/ for example in modern colloquial words such as χωριό (/χοργιο/), φτελιά (/φτελή /) or αφτιά (/αφτχια/). In Modern Cypriot Greek, most speakers may pronounce it as a full consonant /kh/. In all these cases when the iota is not pronounced as /i/ in Modern Greek, it is 'short' and unaccented. Erasmus did not know as much Modern Greek to have laughed at it, but this may be the same usage as in Common Greek (Koine). As an example Εριεύς was often written for Ἐργεύς (frequent in 1st C AD). This is a rare case where an iota is confused for a fricative /γ/ in the middle of a word, because of its consonantal pronunciation. However, there are some examples words beginning with an aspirated iota and having derivatives where the initial is ambivalently written as an iota or a gamma: ΙΕΡΟΝ, ΙΕΡΕΥΣ, ΙΕΡΟΣ vs ΓΕΡΟΝ, ΓΗΡΑΙΟΣ, ΓΕΡΟΣ. This ambivalence was well established in ancient times.

There is also comparative support from Latin, which Erasmus would have recommended. In the presence of the rough breathing, an initial iota was transcribed in Latin in a somewhat different way as HI (eg HIERONYMUS and later in Middle Latin as JERONYMUS). Thus the iota was probably pronounced truly as /γiota/ (jot) when aspirated (ie. when it is preceded by a rough breathing), eg. as in the way iatros, ΙΑΤΡΟΣ, γιατρός (/γiatros/) is pronounced in modern Greek. Similarly the name ΙΟΚΑΣΤΑ /Ιοκάστα was transcribed as Jokasta in middle Latin, as was ΙΑΣΩΝ /Ιάσων as Jason, etc. In the original Latin alphabet there was no letter J. This letter emerged later from I and it came to be used in its place for words like Jupiter, Juno, juvenis, Julius that were previously spelled as Iupiter, Iuno, iuvenis, Iulius, the way indeed they were transcribed from Latin into Greek. It may therefore not be coincidental that in both languages an aspirated initial iota or Latin letter 'I' came to be pronounced as a consonantal /γι /, in a similar fashion. This in Greek transcriptions of Latin words was sometimes indicated by a Γ, which by the way says something about the disputed pronunciation of the letter gamma, discussed later.

There is a proposal that the iota in such cases 'palatalises' the previous consonant (http://www.foundalis.com/lan/grphdetl.htm#p_palatalization). However, the short /γι / (jot) pronunciation of the iota can occur as the first letter in a word, as discussed in the previous paragraph and also between vowels, as discussed for the diphthong υι. This pronunciation exists independent of consonants.

Unlike the eta (η) and ypsilon (υ), the iota occurs in diphthongs only as a second vowel. In Modern Greek the iota combines with the preceding vowel and transforms the diphthong into a single sound that of the long iota.

The rare ypsilon-iota (υι) diphthong is often not pronounced as /i/ in Modern Greek but as a /γι/ (jiot). In this way it reveals the continuing use of the rough breathing as in the word ΥΙΟΣ/υιός (/γios/) usually written in modern Greek as γιός. The same occurs also in an example from 16 AD where υγιου is written instead of υιοῦ 'of a son'. This is consistent with the pronunciation of the word iatros, ΙΑΤΡΟΣ, or γιατρός (/γiatros/) in Modern Greek, and in fact shows the use of the breathings in Modern Greek. This use

was becoming inconsistent even in the period of Koine other than perhaps in the Church, so the inconsistent use and designation of the breathings in Modern Greek is not new.

The Ypsilon (capital Y, unaccented lowercase υ)

The Erasmian pronunciation on the other hand conveniently overlooks the breathings over the letter ypsilon in diphthongs and chooses to pronounce it as /u/ regardless. This is even in complete anomaly with the way the ypsilon was transliterated by the Romans as Y when not in diphthongs (mysterium, hygeia, Olympus, Byzantium) but U when in diphthongs (automaton, Europa, Euboea, Naupactus). In Latin it is always indicated as HY in initial position (hypocrita, Hygeia, Hyperion, Hyacinthus). The Erasmian view is that it was pronounced as a German ü. However, the Greek word ΟΔΗΣΣΟΣ was attributed to two cities on the coast of the Euxine Sea (the modern-day Odessa in the Ukraine and Varna in Bulgaria), instead of ΟΔΥΣΣΟΣ as in Odysseus. The origin of these cities dates to about the 5th C BC.

One would interpret this evidence to indicate that already the eta and the ypsilon were becoming equivalent. Some scholars have insisted that on the basis of some papyri, the confusion was mainly between OI and Y and therefore that these two did not become iotacistic until as late as the 10th C AD. However, confusions of Y and I do indeed occur in the classical period. In Tenos the iota was used in place of the ypsilon in the word ΙΑΚΙΝΘΟΣ (instead of ΥΑΚΙΝΘΟΣ) and its derivatives. In the oath below from the city of Chersonesos (Chersonnesos, Khersonnes or Kherson) in the Crimea, the letter ypsilon in “Olympian gods” and “Olympian goddesses” is substituted by an iota:

OMNYΩ ΔΙΑ, ΓΑΝ, ΑΛΙΟΝ, ΠΑΡΘΕΝΟΝ
ΘΕΟΥΣ ΟΛΙΜΠΙΟΥΣ ΚΑΙ ΟΛΙΜΠΙΑΣ
ΚΑΙ ΗΡΩΑΣ ΟΣΟΙ ΠΟΛΙΝ ΚΑΙ ΧΩΡΑΝ
ΚΑΙ ΤΕΙΧΗ ΕΧΟΝΤΙ ΤΑ ΧΕΡΣΟΝΑΣΙ...

*I swear to Zeus, Gaia, Alios, the Virgin,
to gods and goddesses of the Olympus,
and to the heroes of this city and this country
and to the walls Chersonesos has... (Oath of Chersonesos, 4th-3rd cent. BC)*

The Erasmians having easily assumed that the I, H, Y, EI and OI had become equivalent only in Modern Greek, have in recent times argued that as the Y is mostly confused with OI in Egyptian papyri it remained distinct from the iota. Therefore they defend their old claim by suggesting that the correspondence among the “iotacistic” letters and diphthongs did not fully emerge until Byzantine times, hence the Ancients were innocent and spoke in the Erasmian style. However, there are limits in what can be confused. It is not possible to confuse an OI with an iota, if the iota is consonantal. The rules about the pronunciation being different has meant that misspellings are infrequent and limited, as they are in Modern Greek. Indeed misspellings occur where they have occurred by Modern Greek speakers, in those situations when the use of the ypsilon (and for that matter of the iota) is non-consonantal.

In this regard, in contradistinction to the iota which keeps its pronunciation as /i/ after another vowel, when ypsilon follows another vowel its pronunciation changes. As the second letter in a diphthong (other than in 'ou') it is not pronounced as an /i/ but as /f/ or /v/ eg. in diphthongs to *ἄριο* (/avrio/) or *εαυτός* (/eaftos/). There is at least one indication that this was the way it was pronounced already in early classical times. An inscription dating from around the 446 BC found in the ruins of the Bouleuterion in Athens, believed to be genuine, has the word *ΧΣΥΛΕΦΣΟΝΤΑΙ* in Early Attic. The early Attic compound *ΧΣ* stands for the late Attic letter *Ξ*. Note that perhaps as a spelling error the diphthong *EY* is written as *EΦ*, as it is indeed pronounced in Modern Greek. The only possible alternative explanation would be that it was always written that way at the time and that the diphthong *EY* was used later when it took the same pronunciation as *EΦ*. If so it would be a very unique example where the spelling of *EΦ* was not kept in late Attic. The diphthong *EY* in late Attic (and Modern Greek) is spelled in the same way as in early Attic (eg. as in *ΕΛΕΥΣΙΣ*, *ΑΧΙΛΛΕΥΣ*, *ΠΡΥΤΑΝΕΥΕΝ* in early Attic inscriptions) while the *Φ* occurs in this one example in early Attic also as in modern usage. In other words, this is a unique example and is therefore probably a spelling error that betrays the true classical pronunciation of the diphthong *EY* as *EΦ*, ie. as in Modern Greek, and not in the Erasmian fashion.

Another possible but also unusual indication for this pronunciation is the Greek word *Calauria* spelled as *Calabria* in Modern Italian.

Why was ypsilon given that name? One possibility suggested is that it was the unaspirated variant of another vowel, which presumably would be an *υ δασύ*. One candidate would be the rough breathing (by definition always *δασύ*) in contradistinction to which stood the ypsilon, but such a letter strictly speaking is not known. Possibly the distinction being made is between eta (initially perhaps a rough breathing), epsilon and ypsilon in a three-way division. It has also been proposed that the name ypsilon as with epsilon reflect their length, that they were short vowels (Geldart).

The same question concerns epsilon, which might also have arisen in contradistinction to the rough breathing, so that the rough breathing might have been seen as something of a vowel but of undefined identity, neither an /i/, /e/ or /u/ but presumably the Phoenician heth. Both views have their supporters.

In Latin transliteration, as already pointed out, the ypsilon is transcribed as *hy* in the beginning of words, suggesting it was preceded always by a rough breathing as in Koine Greek and also in Modern Greek. In such cases in Modern Greek it is pronounced as /ɣi/ (jot) for example as in the word *υιός* /ɣios/ written in Modern Greek more commonly as *γιός*. Homer also nearly always makes *υιός* two short syllables, consistent with the Modern Greek pronunciation. This indicates that Modern Greek has sometimes preserved the aspirated pronunciation of an initial ypsilon. This aspirated pronunciation /ɣi/ might have been common in at least some ancient Greek dialects as it is always indicated in Latin (eg. *Hygeia*, *Hyperion*, *Hyacinthus*).

In some areas of the Greek world, the adoption of the 24 letter alphabet and the Koine was delayed. In Crete for example, an older alphabet using the digamma as an alternative to ypsilon persisted during Hellenistic times. It was sometimes written as F (FAΞΟΣ) or B (BAKINΘΟΣ), suggesting a pronunciation somewhat analogous to the modern consonantal pronunciation of ypsilon.

The ypsilon forms a more unusual diphthong with omicron: OY, pronounced /u/ in Modern Greek. Various proposals have been made for alternative pronunciations in ancient times. In at least some cases it was transliterated in Latin as u: Uranus (OYPANOS), urea (OYPEIA), Luca (ΛΟΥΚΑΣ). Evidently, ypsilon had and has many usages. The derided iotacistic use of ypsilon in many instances in Modern Greek may be relatively new but the other usages have been maintained. However, in their single-mindedness, the Erasmian proponents have airbrushed or ignored the other uses of ypsilon in Modern Greek and that these usages closely resemble ancient usage.

The ancient usage even parallels Latin and the early Romance languages. The Latin character V, analogous to the ypsilon, was divided into U, V or W in Middle Latin so that each new character should conform to a single pronunciation. These ambivalent pronunciations of the Latin letter V correspond closely to the ambivalent pronunciations of the ypsilon. The Latin letter V had been once ambivalent (or even multivalent) and the same letter was pronounced in Latin either as a vowel or as a consonant, for example in SERVVS, CERVVS, VVLGVVS. In the archaic alphabet from Dreros and Praisos in Crete, in early Attic and in other Greek alphabets the letter Y was actually written as V. So this is a plain case of the simplicity of the theory of iotacism as proof of the degeneration of the Greek language in Byzantine times from a time when the letters had simple phonetic values. Had the followers of Erasmus spent some of their energy to study the languages they were more familiar with, their own, they might have postulated that their letter V might have been pronounced also ambivalently based indeed on Latin and Greek use. In an early romance language, Old French, u was pronounced as /v/ or /f/ after a vowel (as is the case with the letter ypsilon in Modern Greek) but as /u/ otherwise, for example in Old French aurill (the month of April) the month of Aphrodite.

Upsilon does not occur after an iota. Presumably because after a vowel it becomes a consonant but the iota before a vowel is also consonantal. These rules would make the combination iota-epsilon confusing and potentially impossible to pronounce.

In summary, the ypsilon is pronounced in Modern Greek (1) as /i/ normally only in between consonants or if accented before a vowel, (2) potentially as /ɣi/ in an initial unaccented position (always aspirated), as in YIOS, YAΛI (3) if preceded by an omicron forms a diphthong (ou) and is pronounced as /u/ (4) if preceded by another vowel it is pronounced as a consonant /f/ or /v/ as in AYTOΣ or EYPOΣ respectively.

The Eta (capital Η, unaccented lowercase η)

The letter eta was confusingly written variously as ‘Ϸ’ or in the same way as E in different regions of Greece (eg. commonly in early Attic), even within the same script

(see vase inscriptions such as in: HEPMEΣ instead of EPMHΣ and ΣΑΡΙΠΕΔΟΝ instead of ΣΑΡΙΠΗΔΟΝ). In other instances the letters E and H were distinguished (eg. Annual accounts of the Sanctuary of Nemesis in Ramnous ca. 450-440 BC, Epigraphical Museum of Athens EM 12863). The two letters were written always distinctly as H (eta) and E (epsilon) by Hellenistic times (EPMHΣ, ΣΑΡΙΠΗΔΟΝ). Once the two characters became more consistently used to indicate the two different sounds, an initial eta was transcribed by the Romans as HE, for example Hephaestus (ΗΦΑΙΣΤΟΣ) as opposed to an initial epsilon transcribed as an E eg. in Ephesus (ΕΦΕΣΟΣ). Somewhat curiously and apparently inconsistently the Romans transcribed an initial eta as ‘HE’ (aspirated) even regardless of whether it is aspirated in Koine Greek.

Some argue that in early classical Athens there was only one sound for E (that of epsilon or /e/) and that the sound /i/ that was represented since the archonship of Euclid (403 BC) and in Hellenistic times with the eta (H) did not exist then. I consider the coexistence of both an /e/ and an /i/ sound possible even in early classical Athens for the following reason: What was later represented by the diphthong EI was in early Attic also often written as E, but it is believed that EI was pronounced from around that time as /i/ in Boeotia and elsewhere. The diphthong was misspelled by some scribes as iota (I) indicating that it had that pronunciation in early Classical times. In other words the early Attic E would be at least sometimes pronounced as the iota, which is never pronounced as /e/, in its short value is pronounced as /h/ or similar and in its long value it is pronounced always as /i/ (and therefore as the letter H in Modern Greek). There is also a passage from Plato in Cratylus (418 BC) saying:

Οι παλαιοί οι ημέτεροι τω ιώτα και τω δέλτα ευ μάλα εχρώντο ... Νυν μεν αντί του Ιώτα ή Ει ή Ήτα μεταστρέφουσι ... Οίον οι μέν αρχαιότατοι μέραν την ημέραν εκάλουν, οι δε εμέραν οι δε νυν ημέραν. So what was pronounced in Plato’s time as the iota in μέρα had in previous times the value of the eta (possibly the heth) and indicates a further exchange between E, EI and H. This is not terribly helpful, other than showing the kind of confusion there was in the use of the letters and diphthongs. The word ΗΜΕΡΑ (day) in Modern Greek is also spelled variously as ΗΜΕΡΑ or with an aspiration in ΚΑΘΗΜΕΡΙΝΗ (daily, where ΚΑΤ’ΗΜΕΡΑΝ is compounded to ΚΑΘΗΜΕΡΑΝ) or in ΕΦΗΜΕΡΑ (where ΕΥ’ΗΜΕΡΑ is compounded to ΕΦΗΜΕΡΑ), but also as ΜΕΡΑ following a previous word ending in eta or epsilon (for example Η ΜΕΡΑ, ΚΑΘΕ ΜΕΡΑ) and the eta is also lost when the word ΗΜΕΡΑ is compounded with a previous word ending in E. H or EI (for example ΚΑΛΗΜΕΡΑ) but normally not after a word ending in other consonants or vowels (for example ΠΟΛΥΗΜΕΡΟΣ, ΤΕΤΡΑΗΜΕΡΟΣ), which coincides with ancient use. So the modern spelling and the individual rules and variations of ΗΜΕΡΑ have echoes in Attic – and may even be more conservative.

Some have noted that both Greek E and H are transliterated in Latin as E. However, this is no proof that the two always sounded similar, it may rather be that both sounds were denoted by the same letter (whether long/short or /e/ vs /i/) and indeed in Latin we sometimes find Virgilius instead of Vergilius and a triple spelling possibility paralleling the Greek EI/E/H: tristes / tristes / tristis.

Epsilon written occasionally as an ‘Ε’ (the Phoenician heth) received at the beginning of a word the spiritus lenis (hence in Latin inscriptions it was not preceded by an H), while eta took its name from the Phoenician heth ‘Ε’ and might have indicated at first the sound of the aspiration that one finds in Modern Greek represented by a short iota, eg. in *μηλέα* > *μηλιά*, *καρυδέα* > *καρυδιά*, *ιτέα* > *ιτιά*. The difference in these cases is the intonation or accent. When accented (stressed) there is the value of /e/, when unaccented the value of /h/, both originally represented somewhat uncomfortably by the ambivalent ‘Ε’. These two alternative pronunciations, present in Modern Greek, are therefore neither modern nor “corrupt” and perfectly illustrate the ambivalent pronunciation of some of the ancient vowels.

Some Greek words containing the eta

(θηριον vs θεριον, νηως vs νεως, γοηρος vs γοερος, κηριον vs κεριον) can indeed be pronounced either as an /i/ or as an /e/ which may be further evidence of the original use of ‘Ε’ or E to indicate several different sounds. In some archaic inscriptions both ‘Ε’ and E or Ε occur, possibly as different length values but possibly as different vowel sounds (eg. http://www.carolandray.plus.com/Etecretan/archaic_alpha.html).

Another indication that the ancient letter E was ambivalent was in grammatical usage. The aorist is thought to change a short initial to a long initial, and the ancient rule regarding words beginning with E in the Present Tense changed in the aorist to H as *ερωτά* > *ηρώτησα*, *εννοώ* > *ηννόουν*. The equivalent with words starting from alpha is *απορώ*>*ηπόρουν*, *αρκώ*>*ήρκουν* and from ypsilon *υστερώ*>*ηστέρουν*. Never however,, *απορώ*>*επόρουν* or *υστερώ*>*εστέρουν*. Nor do we ever have in ancient texts a spelling such as *ΗΠΟΡΟΥΝ*, *ΗΡΚΟΥΝ* or *ΗΣΤΕΡΟΥΝ*. Grammatical use aptly demonstrates therefore a need for both an epsilon /e/ and an eta /i/, presumably both denoted by E. In other words the need for both the eta /i/ and the epsilon /e/ reveal the essence of the ambivalence of what was designated once with the letter ‘Ε’ or early Attic E. The ‘modern’ iotacistic letter H was officially introduced in Attic in 403 BC, soon after Plato wrote about the spelling of *ΗΜΕΡΑ*. In fact this eta, introduced in 403, is the only iotacistic letter in the Greek alphabet, the only letter that in all instances is pronounced as /i/ in Modern Greek.

Of course the Erasmian followers insist that at the time it was still pronounced only as a long /e/ and not as an /i/. The text from Plato seems to suggest otherwise, as *hmera* was pronounced once *imera* (with an /i/) as they accept was also pronounced in Koine and Byzantine Greek. Note in this connection one piece of evidence from an inscription on an Attic vase (Louvre E 857, Tyrrhenian BF neck amphora, O.L.L. group, mid 6th C BC ABV 97/26). The amphora shows a scene of gorgons fleeing with Hermes on the right of the scene. There is an inscriptions that reads *HEPMIΣ*, instead of the usual *HEPMEΣ*.

That the Greek alphabet was not sufficient to convey all the phonetic values in classical Athens is demonstrated by this inconsistent and changing use of the same letter ‘Ε’ to denote the eta and the epsilon. It should not be perhaps surprising if changes had taken place during ancient times at least in some dialects in the pronunciation of epsilon/eta. In this respect, one possibility is that just as the Latin I split into i and j and the Latin V into

v, u and w, so the Greek letter E split eventually into the epsilon (ε) and eta (η) and also the diphthong 'ει' to accommodate the different pronunciations. This would have only occurred after the letter H which was being used as an aspirant for an initial E as in the early attic vase inscription ΗΕΡΑΚΛΕΣ had lost that use. This would indicate that by Hellenistic times (late Attic) the use of the letter H for aspirations might have ended in Greece and so it was universally adopted in the split of the letter E into the alternative pronunciations of E /e/ and H /i/. Meanwhile the Romans had maintained the H for that different purpose, as an aspirant, and used it to indicate the aspirated Greek consonants theta (TH), rho (RH), phi (PH) and chi (CH), to aspirate an initial ypsilon (HYACINTHUS) or an aspirated iota (HIEROGLYPHIC), etc, so they continued using the letter E for both new Greek letters.

Having introduced the iota, ypsilon and eta, we are better armed to answer the challenge of why the Greeks had three single vowels and several diphthongs that could be pronounced as /i/. The answer to this is that these letters are not and probably were not always pronounced as /i/. There are many individual rules governing their pronunciation and there might have been more rules possibly depending on the dialect.

Erasmian concept #2: The sheep's bleat – a critique of an Erasmian tour de force.

A view has been expressed that the letter E stood for either eta or epsilon. That perhaps there was a single pronunciation, corresponding to that single letter. That the eta was pronounced as /h/ or /e/ or /he/ in early classical Attic Greek and never as an /i/. What seems clear is that at some point a new letter was adopted to differentiate between the eta and the epsilon. This had already began in classical times and the transformation was complete by Hellenistic times, judging from inscriptions. Some writers have suggested that the word BH in Cratinus and Aristophanes might be a later interpretation and that there was originally in its place a BE and indeed that the eta did not exist in classical times but only the epsilon associated with only the sound /e/ (eg. see Jannaris, 1895).

Θύειν με μέλλει και κελεύει βη- λέγων βαδίζειν. Arist Frg 642. Kock.
Ο δ' ηλίθιος ὡσπερ πρόβατον βη- βη- λέγων βαδίζει. Cratinus Frg 43 Ed Kock

In this connection, a little too much has been made of the two literary passages to suggest an original pronunciation of eta as an /e/. An argument is made that in these relevant passages by Cratinus and Aristophanes the word βη is echopoetic, ie. it imitates a sound and in this instance the sound of a sheep's bleat. It has been pointed out that the sheep's bleat is more of a /baa/ or /beh/ sound. If so, assuming ancient Greeks interpreted the bleat of sheep in the same way the modern English do (this is not the case in some other modern languages), the letter eta might have been pronounced as /e/.

However, both Cratinus and Aristophanes seemed to have been playing with words and possibly only alluded to the sheep's bleat sounding a bit like BH. BH is the aorist (past perfect) indicative in the third person of the verb to go, meaning something like 'let it go' in a sentence referring to the past. The relevant texts can be interpreted as "the idiot said 'let it go' as sheep do" in Cratinus and "the sacrificial lamb was commanded to say 'let it

go' when led to slaughter" in Aristophanes (perhaps more liberally translated as "let's move on" or "let it be" – rather than bleat. The word ηλίθιος (idiot) rather than Helios occurs in most transcripts of Cratinus and this makes echomimetic sense other than that at the time of Cratinus the letter H (eta) was not normally used in Attic, so it is unclear what the original text of Cratinus had in its place. That sheep might bleat somewhat as if saying the word "let's move on" or "let it go" is funny in these contexts, but one need not make assumptions about how eta was pronounced in early classical Greek based on passages from comedies possibly alluding to sheep bleats. Elsewhere Aristophanes says "let them cry out "OI OI" like sheep". That is not how sheep bleat either.

Finally, if the letter beta was pronounced sometimes as /v/ or always as /v/, this would still make it the most appropriate letter to denote the /b/ sound. In Modern Greek the consonantal diphthong μπ is sometimes used in place of the letter b in foreign words. Mr Barber might be transliterated as Μπάριμπερ. However an alternative transliteration of the foreign Latin characters b, g and d has been used until very recently. The three letters are substituted by beta, gamma and delta and pronounced as /v/, /ɣ/ and /ð/ respectively, for example, Βοημουνδος instead of Bohemund (found in Anna Comnena, when indeed in Frankish the initial sound should have been /b/) or Βερναρδος instead of Bernard. These words are pronounced in Greek with a /v/ not as /b/: Vohemoundos and Vernardos. Older Greek encyclopaedias (eg. Eleftheroudakis) transliterated Latin b, g, d with Greek β, γ, δ, meant to be pronounced in Modern Greek as /β/, /ɣ/ and /ð/ as the closest alphabetical correspondence and the best rendition of sounds that are not phonetically available in the Greek language. So Δαρβινος for Darwin, Γοιθιος for Goethe (pronounced with /ð/ and /ɣ/ respectively). But a dot was placed on top of them to indicate that this is not the exact pronunciation of the words in the native language, where these letters are pronounced in a plosive way.

In other words, had Aristophanes and Cratinus used echopoieia in these examples for the word BH but they had no /b/ sound in their alphabet (just for the sake of argument), the choice of /v/ would not be unreasonable. They could have indicated that this is not the way sheep pronounced the letter beta in their language and they might have put a dot on it - but you probably know how sheep pronounce our beta in their language, so let us get on with my story. If you think, no a /v/ is just not close enough to a 'b' in the absence of an alternative, why is a /b/ closer to 'OI OI', which Aristophanes also used in Trygaeus to indicate the cry of sheep? No consonants at all, no /e/, no /a/, so it could not possibly be a beh or a bah.

Though my argument does not prove anything, neither does the Erasmian argument. What is a fact is that the letter beta has been a fricative for a very long time and so it would have been ambivalent at some point just before it became a fricative, assuming it was not always a fricative. To say that it was always pronounced as a /b/ in classical Athens under the circumstances stands on less firm ground. Indeed Aristophanes wrote in the 4th C BC, when the use of the H had been established as separate from the E and instances of confusion of it with I were already occurring (Plato's Cratylus and the early Attic vase with HEPMIΣ instead of HEPMEΣ). So even assuming that E had been once

pronounced solely as /e/, the process of its derivative H turning into an /i/ sound by Hellenistic times was underway, had it not already occurred.

The /i/s in summary

The iota is pronounced (1) as /i/ between consonants, (2) as an /h/ or a short /γi/ or /χι/ after a consonant but before a vowel (documented by misspellings in papyri) or (3) if preceded by a vowel forms a diphthong: it makes the diphthong AI into an /e/ and the diphthongs EI, OI into an /i/. The diphthong OI is normally transcribed as OE in Latin as in OEDIPUS or PHOEBUS and the diphthong AI is transcribed as AE in Latin as in PHAEDRA. (4) If occurring in an initial aspirated position as in ιατρός, ἰέρων and ἰάσου, it might have also been pronounced occasionally as /γi/ and still often is.

When Erasmus argued that the iota, ypsilon, eta and some diphthongs were not pronounced in classical times as /i/, he was probably unaware that in Common (Koine; Κοινή) Greek and Modern Greek their pronunciation is after all only conditionally that of an /i/. The pronunciation varies and is governed by rules different for each letter, which seems sufficient reason to have several /i/s. It is moreover unlikely that the Greek Orthodox Church corrupted the language after it fell into alleged heresy. It is more likely that until a common alphabet was into use, the Greek language varied locally not only in the way it was pronounced but also in the way the new alphabet was used. Perhaps it is not too early for those who publish guides to the correct pronunciation of Ancient Greek to become first accustomed to Modern Greek, a language that we now know has changed little in the last 1700 years.

Erasmian concept #3: The diphthongs

Diphthongs are the AI, EI, OI, YI, AY, EY, HY, and OY character pairs. They are all normally long. It was a term introduced in Koine to indicate when two vowels were pronounced as a single vowel. Other pairs of vowels are not referred to as diphthongs. A diphthong as in distich or dimer, etc means one thing made of two parts. In this case obviously one phthong, a single vowel, made of two elements, two characters.

The rules that we have in Byzantine and Modern Greek contracting the two vowels into a single phthong (a diphthong) seem incompatible both with the Latin transcriptions that Erasmus thought should be our guide and also with the Erasmian pronunciation. For example in the Erasmian pronunciation AI is pronounced as the individual letters (therefore two monophthongs, not as a diphthong): /a/ and /i/. Apart from the paradox of pronouncing a diphthong as two separate individual phthongs, the Latin transcription is AE, with the A and the E often joined together - not the same as /a-/i/. Similarly the diphthong OI (/o/ followed by an /i/ in the Erasmian pronunciation) is transcribed in Latin as OE. In this context, unfortunately most Erasmian and later scholars have adopted the term diphthong to mean two vowels pronounced as two separate vowels (phthongs), utterly confusing this distinction. If the phthongs were separate and identical to the sounds of the constituent letters, then whenever two vowels occurred in succession one

would speak of a diphthong. This paradoxical Erasmian definition of the diphthong is simply a self-fulfilled prophesy, for accepting the converse would destroy the whole idea.

The Athenians in classical times disliked chasmodia, that is having more than one or two vowel sounds per syllable, especially having the same vowel twice. They shortened eg. ομιλέει to ομιλεί. Once the Modern Greek pronunciation for the diphthongs is accepted, classical Attic Greek becomes relatively free of chasmodia, with most syllables having no greater length than the long length. For example, the last syllable in KARYAI in Erasmian Greek is more than long, about one-and-a-half long: Y being in this case short (“θέσει βραχύ”) and AI short (but actually pronounced double long as /a-/i/ in the Erasmian style). In fact we almost have three syllables. In the Modern Greek style, all diphthongs are pronounced as single vowels, /e/, /i/ or /u/ and if the iota is also pronounced as /h/, /γι/ or /χι/ before another vowel, this leaves very few instances where two vowels occurring in sequence would be pronounced as separate vowels. There are a few exceptions and some apparent exceptions, one being the word μύια. The diphthong υι might have been pronounced in Koine Greek as /miya/ as in modern Greek, consistent with the Modern Greek consonantal pronunciation of the iota, causing no longer a chasmodia. In fact accepting in this way the “Modern” Greek pronunciation of some words (γιός, μύγα, γιατρός, γιάσου) rather suggests that the pronunciations /i/ός, μυ/i/α, /i/ατρός, etc may be alternative or retrospective (learned) and that the ancient pronunciation or at least an alternative pronunciation might have actually been transmitted orally. As pronounced in Modern Greek such words may not be corrupted in their pronunciation, rather the converse, as they seem to preserve the initial aspiration evident in their Latin transcriptions.

The modern pronunciation of the diphthongs as single vowels, which has been so hotly disputed, even derided, seems to have been similar to their pronunciation at least (but not only) in late antiquity. There is now comparative evidence that the diphthong ‘ει’ was pronounced as /i/ in Athens at least by the 1st C BC. From the relation of sound and writing in Boeotia, which may be closer than that prevalent elsewhere, we have a good criterion of the pronunciation of particular sounds which is often lacking in other dialects. From the third century BC onwards, the tendency to write EI as an I increases. For example, in Kaibel's "Epigrammata Graeca ex lapidibus conlecta," I stands for EI 166 times in 113 inscriptions, EI stands for a long I 420 times in 280 inscriptions and in 20 inscriptions also for a short I. By the first century BC the distinction between EI and I had become a "crux orthographica" (Cf. Blass, "Ausprache des Griechischen," 2d edition). In Modern Greek EI is normally long unless in a few inconsistent occasions when it is preceding a vowel and is unaccented.

There is further evidence from papyri of the Roman period that the diphthong ‘ει’ was not pronounced as two separate phthongs, /e-/i/. A few examples from the Dead Sea Babatha archive (124-31 AD) (Lewis 1989), a Ben Kosiba (Bar Kokhba) letter (132-135 AD)(Lifshitz 1962) and an Egyptian Greek letter (100 AD) may be of representative interest:

attestation	normalized	English
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Ben Kosiba 1.9	ισ	εις	'to, for'	(132-135 AD)
Ben Kosiba 1.7	συνεξελθιν	συνεξελθειν	'go out with'	
Babatha 25.4	επιδη	επειδη	'since'	(131 AD)
Babatha 25.6	νυνει	νυνι	'now'	
Babatha 15.8	υμειν	υμιν	'for you'	(125 AD)
Papyrus 109.2	τωι οικιωι	τω υιω	'to the son'	(100 AD)

In the last example OI has replaced Y. There are other such examples, eg. Papyrus 103.12 *επησηεν* rather than *εποησηεν* (95 BCE). This has caused some scholars to claim that at the time OI was indeed pronounced a single phthong but as an ypsilon and distinct from an /i/ iota. However, not only confusions between the ypsilon and iota occur, as discussed earlier, in classical Greek, but it appears that ‘οι’ was also pronounced as very similar or identical to /i/ in Attic at least since the 5th C BC. It was then that the Athenians were uncertain of the exact interpretation of an oracle given to them (Thucydides, II, 54) because they were uncertain whether they had been warned of a ΛΙΜΟΣ (starvation) or a ΛΟΙΜΟΣ (epidemic). Thucydides says that perhaps “it was not a plague that was spoken of but famine”.

Concerning the confusion of Y with OI, indicating the pronunciation of OI as a single phthong (a diphthong) in ancient times, in another inscription from Roman times (1st C AD) found in the Athenian Agora we read: BYΒΛΙΟΝ ΟΥΚ ΕΞΕΝΕΧΘΗΣΕΤΑΙ ΕΠΕΙ ΩΜΟΣΑΜΕΝ: ΑΝΥΓΗΣΕΤΑΙ ΑΠΟ ΩΡΑΣ ΠΡΩΤΗΣ ΜΕΧΡΙ ΕΚΤΗΣ. The inscription SEG, XXI, 500 on the marble plaque seems to be referring to the regulations for the library which was founded at the Athenian Agora, as a donation of Titus Flavius Pantainos (Pantainos) (1st century AD). The spelling error in the word ΑΝΥΓΗΣΕΤΑΙ (with Y instead of OI), surprising for a sign to a library, indicates that the diphthong OI was pronounced as Y, a single phthong, therefore OI was a diphthong, unlike for example OH or EO, or other combinations of two vowels, which were not referred to as diphthongs, since the letters retained their individual pronunciations. The pronunciation “depravata” of Erasmus, pronouncing OI as Y in this case, had occurred in classical times and had nothing to do with the Greeks of Erasmus’ time.

Another issue of course is whether the Romans also varied their pronunciation of the vowels in different situations. We do not know how OE was pronounced in Latin but we do know that it was, like the Greek OI, monosyllabic and was similarly replaced by both u and i. Compare foedus with fidus moenia to munire. This seems such a difficult subject that to pretend one knows how to pronounce a given passage in Attic truthfully according to some idealised ancient pronunciation is very hopeful even centuries after Erasmus. Erasmian pronunciation turns out to be little more than arbitrary and, in instances such as this, a worse approximation than the Modern Greek pronunciation.

Another diphthong is the AI, pronounced in Modern Greek always as a long /e/. That AI was pronounced as E, which was pronounced as /e/ at least as early as the 2nd C BC

comes from another papyrus (Papyrus 99.4) with ειδηται instead of εἶδητε 'you would know' (154 BC). Some more examples from the Dead Sea Babatha archive:

	attestation	normalized	English	
Babatha 16.16	αινγαδδων (gen. pl.)	En Gedi		(127 AD)
Babatha 11.1	ενγαδοισ (dat pl.)	En Gedi		(124 AD)
Babatha 37.8	εταιροισ	ἑτέροις	'for others'	(131 AD)
Babatha 24.18	αποδιξε	ἀποδείξει	'to declare'	(130 AD)

As for the AY and EY discussed above under the heading of Ypsilon, further evidence for their pronunciations as af, av, ef and ev comes from a Ptolemaic papyrus (2nd C BC) where we find ραυδους instead of ῥάβδους (Gignac 1976:68, n.1). There is also an instance of ευδομος instead of εβδομος.

There is an exception to the rule of the diphthongs. When two letters that would form a diphthong occur next to each other accidentally at the junction of compounding two words, they are not pronounced as diphthongs but as the individual phthongs. An example is the OI in ΠΙΠΟΙΣΤΟΡΙΑ (prehistory), a word formed by compounding ΠΙΠΟ with ΙΣΤΟΡΙΑ. It is pronounced as /o/-/i/. In this case OI is not a diphthong in Modern Greek and the two vowels are both pronounced.

Erasmian concept #4: The consonants

I will not discuss with the same detail the pronunciation of the consonants. The Erasmian school have claimed that the Modern fricative pronunciation of β, γ, δ, θ, φ and χ developed gradually, although they have accepted the Modern pronunciations of θ, φ and χ as valid for the classical period. This is probably due to the known classical Latin transcriptions of the Greek consonants θ, φ and χ using th, ph and ch, with ph especially sometimes transliterated as f in Middle Latin. We also rather assume that in classical Latin B, D and G were always pronounced as plosives. They are not necessarily pronounced the same today as they once were. In Spanish they are ambivalent, sometimes plosives (after an n or m, a similar rule to Modern Greek), sometimes fricatives. Hence in modern Spanish many (most) Greek words using these letters are pronounced the same as in Modern Greek, which may or may not be entirely accidental. I will cover next the evidence for and against the modern fricative pronunciation especially of beta and gamma in ancient times.

Beta

Much has been said about the letter beta being equivalent to /b/. That it became fricativised to /v/ in Modern Greek. There is a problem with this in that two common Greek words BOH and BOMBOS are echopoietic and indicate fricative sounds. BOH meaning commotion, indiscreet sound or voice, BOMBOS the buzzing of insects. Apart from the fact that in Spanish B is ambivalent and can be pronounced as /v/, the fricative

sound of /v/ is attributed to beta in transcriptions from the Latin V, eg from Gignac (1976):

Σαλβίου	for the Latin [Salvius]	(1st century AD).
πρεβέτοις	for the Latin [privatus]	(1st century AD)
Φλαβία	for the Latin [Flavia]	(149 AD)
Φλαουβίου and Φλαυβίας	for the Latin [Flavius/-a]	(120 AD)

There is also the aforementioned example from a Ptolemaic papyrus with ραυδους instead of ράβδους – three times (2nd C BC; Gignac 1976:68, n.1). In Grinko, the Greek idiom of Southern Italy written in the Latin script, a ‘v’ is written and /v/ is pronounced where a beta would have occurred.

It is said that the letter beta was pronounced as a bilabial consonant whereas the Modern Greek beta is pronounced as a labiodental. Modern Greek grammar books refer to the beta as labial, they make no distinction of bilabial vs labiodental. This argument that β is not bilabial but labiodental in Modern Greek is in any case incorrect. The letter v is labiodental as pronounced in English (/v/). However, in Modern Greek β is ambivalent and can be more of a bilabial fricative in words such as βοριάς, βοή, βοιητό. This bilabial pronunciation is common and a labiodental pronunciation is almost impossible in such cases in Modern Greek Therefore its Modern Greek pronunciation cannot be dismissed as corrupted on the grounds that β is not a true bilabial consonant, because it usually is. It can also be pronounced as labiodental and no proper distinction is made. However, one is splitting hairs when arguing for the Erasmian pronunciation of β as /b/ on the grounds that the Modern Greek β should be classified as labiodental. Unless evidence arises that beta was in all cases and by all Greek speakers indisputably pronounced in ancient times as a plosive bilabial, then the Erasmian argument cannot be proven (or disproven – but the burden of proof is on the Erasmians).

Gamma

Some students say that the letter gamma is ‘still’ pronounced as /g/ in modern Greek in some contexts eg. in ΑΓΓΕΛΟΣ or in ΕΓΚΕΦΑΛΟΣ. They claim this is evidence that it was pronounced so universally in ancient times. It would seem on the contrary to indicate the opposite. The word ΕΝ-ΓΟΝΟΣ is compounded into ΕΓΓΟΝΟΣ, which means grandson or offspring. Note that when it is so compounded, the N changes into a Γ. Why should it not be omitted altogether or kept as an N? This makes only sense, if one considers that the N and the Γ were now brought closer together into one sound, something between the two or closer to gamma. Similarly it is not obvious why a N should transform into a Γ, if Γ were a /g/, when the word ΕΓΚΕΦΑΛΟΣ is formed from ΕΝ + ΚΕΦΑΛΟΣ. It is clear that a transformation is taking place in which something new is made at the union of the two words. This is not common in the Germanic languages and therefore difficult to understand by using the Germanic languages as a standard. The new sound is not that of the original two words.

The key to this may be that both the Cretan/Aegean language (from what we know from the prehellenic words for the Greek toponyms, eg. Paros, Naxos, Milos, Nisyros, Kimolos, Sikinos, Rodos, Mykonos, Knossos, Phestos, Corinthos, Amarynthos, Olynthos, etc, see the Appendix), have syllables usually of a single consonant followed by normally a single vowel sound. Mycenaean Greek as deciphered from the Linear B script, seems to also follow a similar trend. Later Greek dialects might have been influenced by these to combine the vowels (using diphthongs and omissions) and the consonants in a style unknown to the Germanic languages. Hence in such examples above, where the N changes to Γ, the Greeks probably aimed to create a single consonant out of two, bringing the N closer to the K or to the Γ. Trying to pronounce ΕΓΚΕΦΑΛΟΣ as EGKEFALOS using Germanic principles (ie. a plosive /g/ followed by a stopped plosive consonant /k/) would be almost impossible, so either the principle or the Erasmian pronunciation or both are unrelated to the original Greek. The Modern Greek pronunciation of a voiced /ŋg/ is compatible to the N moving closer to K in the throat, where /γ/ resides, hence ΓΚ. Similarly with the compound word ΕΓΓΟΝΟΣ, the N has moved closer to the Γ, indeed by becoming a second Γ (germination), so that two voiced gammas in close sequence might be pronounced as something less voiced due to protraction, ie. not a /γ/ but a voiced /gh/ or /ŋgh/. But if gamma was a plosive consonant like /g/ when occurring in isolation and was germinated (doubled) into /g/-/g/, it would become unpronounceable. This explanation of bringing two voiced consonants closer together for articulation fits well the modern pronunciation. The rule of N changing to Γ before a K or a Γ is universal in Greek and had become established in ancient times. There are examples from ancient misspellings in which the letter gamma was indeed pronounced the same as an iota occurring in situations where the iota would have been pronounced consonantly (ΕΠΙΕΥΣ misspelled as ΕΠΓΕΥΣ). So that contrary to attacks on the Modern Greek pronunciation of a single Γ as /γ/ (and not as ΓΚ and ΓΓ = /ŋgh/), such pronunciation makes much sense and enough evidence of it is found in ancient texts. There is finally an example from the 1st C BC supporting the fricative pronunciation of Γ as /γ/ where the word ΙΕΡΟΥ is written as ΙΓΕΡΟΥ and a pointer in the old ambivalent spelling of words such as ΙΕΡΩΝ and ΓΕΡΩΝ that even took slightly different meanings depending on the spelling.

This interpretation is further strengthened by the fact that the letter Gamma has the same position in the Greek alphabet as the letter C in the Latin one. The Romans (or Etruscans) evolved a second letter G from the letter C. So that there was one letter akin to the Greek Γ that was ambivalent and had two pronunciations. One of those was that of /k/ and the other that of /g/. However, how these were pronounced at the time by the Romans and how similar or dissimilar they were to the Modern Greek gamma it is hard to say.

In Grinco, the Greek idiom of Southern Italy, the letter gamma is written in the Latin alphabet as gh. In Modern Italian, the letter g is moreover ambivalent, compare *Giovanni* with *campagnolo*. In Spanish the letter g is ambivalent and is normally pronounced as a fricative unless after an n or an m. This is the very situation when in Ancient Greek we have the creation of the consonantal diphthongs ΓΚ or ΓΓ, pronounced in a somewhat

similar manner in Modern Greek as with Modern Spanish ‘g’ after the letter ‘n’, perhaps not a complete coincidence.

The delta.

The Erasmian pronunciation is again a plosive: /d/. However, in Modern Greek it is almost always a fricative /ð/ = /ð/. Just in a handful of cases it is pronounced as a /d/ after a ‘v’, a somewhat similar rule with the pronunciation of the letter ‘γ’ after an ‘v’. However, the pronunciation of gamma after an ‘v’ is consistent and denoted with a change in the consonantal diphthong from $\nu\gamma$ to $\gamma\kappa$. The change in the pronunciation of delta after an ‘v’ as /d/ is uncharacteristic in Modern Greek, it depends on the speaker and on emphasis and when it occurs (as in $\Delta\text{EN}\Delta\text{PO}$ or $\text{AN}\Delta\text{PA}\Sigma$) it is phonemically indicated with the consonantal diphthong NT for clarity ($\delta\acute{\epsilon}\nu\tau\rho$, $\acute{\alpha}\nu\tau\rho\alpha\zeta$). Erasmian followers have claimed this was the original pronunciation. The same rule, however, also applies in Spanish, where β , d and g are only non-fricative after an n or m. So perhaps the fricative use was an old and predominant one, at least based on the resemblance of Spanish with Greek use.

The phi (ϕ) and theta (θ)

Similarly as with β , ϕ is a labial consonant in agreement with its classical classification. In Modern Greek it is pronounced as a bilabial fricative in $\phi\omega\tau\acute{\iota}\alpha$ but sometimes also as labiodental. Erasmians have occasionally denoted ϕ as ph, meant to be pronounced as /p/ separately followed by an /h/, as in the German and Dutch pronunciation. Indeed that was how the Romans transliterated it, but the Romans need not have pronounced their language like the Dutch and Germans do today. As the Romans wanted to discriminate between their f (which by the way derived from the digamma and might have not been always pronounced as /f/ by the Romans) and the Greek ϕ , they represented the phi with the construction ‘ph’ which might have seemed close to the Greek labial fricative. The same is the case with theta, as the Romans did not have a fricative dental, therefore they indicated it with the construction ‘th’ as an aspirated /t/ (ie as /θ/). There are no grounds to pronounce this as the Germans and Dutch would pronounce ‘th’, ie. as a /t/ followed by an /h/.

Erasmian concept #5: “The” ancient pronunciation – rather than the actual variance of the pronunciation among Ancient Greek dialects

The Erasmian followers for a time spoke like Erasmus himself about “the pronunciation” of ancient Greek – as opposed to pronunciations in the plural. It was at later stages in the course of this affair that the Erasmians encountered the different dialects, the Ionian, Dorian and Aeolian primarily and the local and historical variations. This little dissuaded them from speaking of an alphabet with common phonetic values, even when the writing of the letters differed from instance to instance among the alphabets.

The various guides to the Greek pronunciation available on the internet and espousing the Erasmian pronunciation generally keep to a simple “one letter-one phoneme” rule. They do not embark on explanations of the diphthongs or the pronunciation of a letter depending on its position in a syllable. In these guides, historical periods are usually demarcated neatly into Ancient, Koine and Modern, etc. Equally nothing is said by those who offer easy to memorise Ancient Greek pronunciation guides of the variance in pronunciation among the ancient dialects. The anonymous compiler of the *Etymologicum Magnum* notes in the entry on Aphrodite, probably adopting a comment by the earlier grammarian Didymos: in the Macedonian idiom "B is akin to Φ". The Macedonians call Philip "Bilip" and pronounce falakros [bald] "Balakros" the Phrygians "Brygians" and the winds (fysitas) "byktas". Homer refers to "byktas anemous" (blowing winds), in the Doric Macedonian form. Plutarch in his *Moralia* again confirms that the Macedonians pronounced Ph as B. This is attested also from the Macedonised name Berenike, cognate to the Attic Pherenike, from Pheron + Nike: Bearer of victory. It is corroborated from Aristophanes quoting the Macedonian word ΚΕΒΛΕΠΥΡΙΣ, equivalent to the Athenian ΚΕΦΑΛΕΠΥΡΙΣ. Such differences existed between the other Greek dialects, for example Spartan theta was perceived by Athenians closer to sigma (several examples in Aristophanes' *Lysistrata*, perhaps as is today pronounced in modern Crete, that had once been settled by the Dorians). In Delphi (Phocis) Phi was pronounced apparently as Pi (so Pocis, instead of Phocis).

Erasmian concept #6: The original sound

The Erasmian concept turns about the “original phonetic sounds” of Greek being embodied by the letters of the alphabet in a one-to-one correspondence. It is alledged that the language was an Indoeuropean one and there ought to be a common phonetic space among these languages. Therefore the Greek language originally ought not to have had a fricative beta, gamma and delta but plosive ones, as in the modern Germanic languages (German, Dutch, English and Scandinavian Germanic). That similarly the theta, phi and other aspirated fricatives, in order to simplify and unify the phonetic space, ought to have been originally pronounced as two separate sounds. That is the θ should have originally been not a /θ/ but a /t/ followed by an /h/: t-h-eta, a bit like in Modern German and Dutch. Nevertheless, it became acceptable in Erasmian circles that it can be pronounced as /θ/ (as ‘th’ is normally in English words of Greek origin where a θ would have occurred, such as theatre and therapy). The pronunciation of the chi was also accepted as /χ/, given also that the Germans and Dutch much like the Modern Greeks (alas?) pronounce the chi as /χ/ and not as a /k/ followed by an /h/. Similarly with the Greek letter phi (φ), that is accepted as an /f/ as opposed to a /p/ followed by an /h/. But the Erasmian purists insist that these are not the original pronunciations of the three letters but that they were indeed pronounced as a consonant followed sometime later by an aspiration by the original perhaps purer Greeks.

As a non-expert, I cannot embark on a critique of the estimated original pronunciation of the Indoeuropeans, whether the very first and ‘pure’ Indoeuropeans had fricatives. Nor is it easy to tell whether the Ancient Greeks as Indoeuropeans had fricatives or not at the time of the adoption of the Greek alphabet. I should point out, however, that the

Germanic languages have been written for a relatively recent period and one should not make hasty assumptions about how German or English, if such things were in the time of the Greeks, were being pronounced then. It appears that in Sanskrit there was a b as well as a bh consonant, g as well as gh and d as well as dh. I have remarked already that the ambivalence exists in Modern Spanish (and closely parallels Modern Greek use): b is regularly pronounced as a labiodental fricative /v/ unless after an ‘n’ or ‘m’ when it is a plosive /b/, g is pronounced akin to /γ/ or /χ/ unless before an ‘n’ or ‘m’ when it is a plosive /g/ and d is akin to /δ/ or /dh/ unless before an ‘n’ or ‘m’ when it is pronounced as /d/. There are also fricative θ and χ sounds in some Spanish idioms.

The simplistic assignment of a single phoneme to each letter, which has led to the concept of iotacism and the other Erasmian misunderstandings should be abandoned in view of the parallel ambivalence of the I as either /i/ or consonantal in both the Greek and Latin languages and endorse the parallel ambivalence of V (Greek Ypsilon was also written originally as V) as either /u/ or /v/. That these ambivalences were expressed in the case of Latin by two different letters from Middle Latin onwards but not in Greek, weakens the Erasmian argument that a single letter has not been used in antiquity to indicate different phonemes. The original Attic E was evidently multiivalent, as it was later spelled as E, H or EI and the ambivalence probably affected other letters, such as the beta, gamma and delta.

As to whether the principle of “one letter-one phoneme” applied to the original alphabet, we may never know as little has survived in Greek from the 8th C BC - and even if it could be established, it would be a fact of little usefulness, limited to pronouncing 8th C BC Greek, of which very little has survived.

Erasmian concept #7: The origins of the Greek language

Greek always sits comfortably in tables and tree diagrams of the Indoeuropean languages. Erasmus, who started with the Germanic pronunciation of Latin as his guide, and subsequent scholars based the phonetic values of the Greek alphabet on the phonetic values the same letters have in central and northern European Indoeuropean languages. This is slightly counterintuitive as Greek was the original alphabet not a derivative. In any event, not enough attention was given to the fact the Greek contains a good deal of non-Indoeuropean words (most of the names of the Greek islands, many city names, and a few important words, such as those to do with things of the sea. Essentially all Greek words of the feminine gender with the unconventional –os suffix (eg. Knossos, Phaistos, Korinthos, Rodos, odos, etc) and some equally unconventional neutral nouns with the same suffix (eg. anthos, phos) are non-Indoeuropean (see the Appendix below).

Besides, the alphabet adopted by the Greeks from the Phoenicians was also used by the Eteocretans and the Etruscans, while other peoples such as the Aegeans, Pelasgians and so on shared the same geographical region with the later Indoeuropean Greeks. We have been accustomed to the habit of equating the alphabet with the theorised original Indoeuropean sounds. In the polyphony of archaic and dark-age Greece, the alphabet

would have had to stand for a variety of phonemes not all of which could fall neatly into 26 or so pure forms. One should rather expect that there were varying preferences for using a letter to describe a group of sounds across dialects and languages. The result or results at that time need not correspond to the later use the alphabet was put into to describe the key phonemes of the reconstructed ancestral Indo-European language.

In this regard, the wide-ranging fricative pronunciation of Modern Greek need not be a subsequent development, but may be related to the cultural and linguistic milieu of the time. There seems no obvious reason why a fricatisation would have taken place in Hellenistic or Roman times, assuming as the scholars suggest that the other languages with which Greek came into contact at the time did not employ extensive fricatisation. The influence should have been in the opposite direction, away from fricatisation, if fricatisation was in a flux at Hellenistic times. Unfortunately it appears that not enough has survived from the non-Greek languages of pre-Classical times to reconstruct them. Nevertheless, it should not be assumed that they had no influence in the pronunciation of the Ancient Greek dialects, if they contributed so many words to the language.

The initial presumption by the followers of the Erasmian pronunciation in fact had been that fricatisation was a sign of degeneration of the Greek language, a corruption that took place in Byzantine Greece. However, it would seem that the fricative pronunciation of beta, gamma and delta and of theta, phi and chi were present in Roman times based on spelling errors often from Egyptian papyri written by scribes who were probably non-native Greek speakers.

Geldart (1870) made a similar observation, saying that the Greek language as we know it was spoken by Greek fugitives after the Fall of the Byzantine Empire and before Turkish could become an influence. Therefore the main outside influences that could have changed Greek pronunciation from the outside would be Latin, Slavonic, French or Teutonic, “but none of these throw any light on the peculiarities of the Greek pronunciation”. Although the countries in which Greek was spoken until the twentieth century were as distant as Greece, Turkey, Egypt and the northern shores of the Black Sea, the distinctiveness of its pronunciation was preserved and especially in respect to those letters (β , γ , δ , $\mu\beta$, $\mu\pi$, $\nu\delta$, $\nu\tau$ and the diphthongs) around which the Erasmian controversy has turned.

In closing

Needless to say there is an endless proliferation of websites on the net offering the Ancient Greek pronunciation, the Biblical Greek pronunciation and the Modern Greek pronunciation. They fail almost down to the last one to point out the ambivalence of the pronunciation of some of the letters, ancient regional differences and the rules that govern pronunciation depending on compounding, aspiration, other adjacent vowels or consonants, so that these guides are almost meaningless. They are of use only to the new student who needs to start with a simple guide, but for this it would seem one's own pronunciation of the Latin alphabet might be adequate. There ought to be no pretense that these are guides about the actual pronunciation of Classical, Biblical or Modern Greek,

when in fact fail to cover adequately even Modern Greek, which is a living language. In any event, the greatest changes occurred prior to Hellenistic times, so Ancient Greek is really a multitude of dialects with a multitude of pronunciations, alphabets and spelling variants, so that to speak of Ancient Greek as a single thing is oversimplification.

Indeed three centuries had lapsed from the time when the Greek alphabet was first adopted in the 8th C BC (or earlier) and the 5th C BC when education became commonplace. In the first centuries, it would have been surprising if the language did not evolve regardless of the phonetic values of the initial alphabet, assuming that these were at all corresponding to single sounds (no ambivalence). It is in this early period that one might expect the greatest changes in the language, a period we have a very sparse record of. Certainly the Homeric poems have archaisms, including words whose meaning remains uncertain and grammatical forms that vary from later periods. These changes indicate that the Greek language might have not remained static in those first 3-4 centuries from the adoption of the alphabet to the Athens of Pericles. One should therefore not be overconfident that in ancient Athens the original presumed purely phonetic pronunciation in the presumed Germanic Indoeuropean idiom attributed by the Erasmian proponents to the Greek alphabet was in vogue.

Lastly, it should be recognized that the adoption of the Erasmian pronunciation was an indirect dismissal of Byzantine scholarship and with it of the Orthodox Church and therefore a political act. There was simply too little known at the time about the pronunciation of Ancient Greek or Ancient Latin. The pronunciation *depravata* of Erasmus has turned out to be an error, as the Byzantine pronunciation was indeed that of the New Testament, and on the contrary it was highly conserved. The generalized changes that occurred in the Greek language happened in Hellenistic times and prior to that, and so Erasmus' characterization *depravata* perhaps should be applied to Plato and Aristotle and not to Modern or Byzantine Greek speakers.

The pronunciation of Modern Greek

Rather than venture into the territory of Erasmian scholars to present in 24 simple characters the pronunciation of Ancient Greek, I give below a brief pronunciation guide for Modern Greek. This should be a guide to those who wish to start with a knowledge of Modern Greek pronunciation before embarking on a critique of it. It demonstrates that the various /i/'s have their own rules and the diphthongs occur also as two separate monophthongs under a certain condition. These rules were established at around the 3rd C AD and remain standard in Modern Greek. The pronunciation of Modern Greek is known to have not changed appreciably since the 3rd C AD. In many instances the pronunciations given here, eg. for the diphthongs, have been established since the Hellenistic period or before.

Modern Greek pronunciation guide

- A, α alpha /a/
B, β beta /v/ as in **very**, similar to Spanish fricative b but sometimes more bilabial
Γ, γ gamma /γ/ as the initial sound in **year** or **way**, similar to Spanish fricative g
Δ, δ delta /δ/ = /ð/ as in **there**, somewhat similar to Spanish fricative d
E, ε epsilon /e/ but often shortened to /h/ if unaccented and before a vowel. Then it is normally written in Modern Greek as an iota and pronounced as an /h/ (heth) /γῖ/ (jot) or /χ/ (eg. *μηλεα* > *μηλια*, *καρυδεα* > *καρυδια*, *ιτεα* > *ιτια*)
Ζ, ζ zeta /z/
Η, η eta or heta /i/ always long, even if before another vowel and unaccented
Θ, θ theta /θ/ as in the English word **theatre** (fricative)
Ι, ι iota /i/ if long (ie. the only vowel in a syllable or if accented or if after another vowel when not forming a diphthong). It is pronounced as /h/ (heth) or /γ/ (jot) or sometimes as /χ/ (or /kh/ in Cyprus), if short and before a vowel. An initial iota may also be pronounced as /γ/ (jot) if unaccented and followed by another vowel and is usually written as ΓΙ, as in *ιατρος* > *γιατρος*, a bit as in the Spanish **Jesus**
Κ, κ kappa /k/ stopped (unvoiced)
Λ, λ lamda /l/
Μ, μ mu /m/
Ν, ν nu /n/
Ξ, ξ kse /x/ as in Texas (ks)
Ο, ο /o/
Π, π pi /p/ stopped (unvoiced)
Ρ, ρ rho /r/ with a roll
Σ, σ sigma /s/, but some speakers use /z/ before a voiced consonant. At the end of a word the san or stigma, ζ, is used in lower case script.
Τ, τ tau /t/ stopped (unvoiced)
Υ, υ ypsilon /i/ if long (ie. the only vowel in a syllable or if accented or if after another vowel when not forming a diphthong)
/γ/ (jot) rarely if at the start of a word and before a vowel, normally spelled as ΓΥ

	/ɣ/ (jot) if unaccented, after a consonant and before a vowel
Φ, φ	phi /f/ or /fh/ voiced fricative but sometimes more bilabial rather than labiodental
Χ, χ	chi /χ/ fricative as in the German ch
Ψ, ψ	psi /ps/ always.
Ω, ω	omega /o/

Consonantal diphthongs

ΓΓ	/gh/ a bit as in G hana but voiced or /ngh/ with a slight n [ŋ] before the /g/
ΓΚ	/gh/ a bit as in G hana but voiced or /ngh/ with a slight n [ŋ] before the /g/
ΓΧ	/nχ/ with a slight n [ŋ] before the /χ/ (/χ/ pronounced as in German ch)
ΝΤ	/nd/ as in d oor but with a slight n [ŋ] preceding the d
ΜΡ	/mb/ as in b ell but with a slight /m/ preceding the b
ΤΖ	/dz/ used for foreign words, eg. Τζέην (Jane), Τζών (John)
ΤΣ	/ts/ with a slight /t/ before the /s/, as in p izza

Vowel diphthongs (mostly long and not substituted by an /h/ (jot) if unaccented before a vowel

ΑΙ	/e/ long, almost never shortened
ΕΙ	/i/ long, but depending on one's choice it can be shortened into /h/ (heth) after a consonant and before another vowel, if unaccented
ΟΙ	/i/ long, almost never shortened
ΟΙ̇	/o/-/i/ due to diaeresis, when at the junction of a compound word, eg. ΠΡΟΙ̇ΣΤΟΡΙΑ
ΥΙ	/i/ or /yi/ as in ΥΙΟΣ and ΜΥΙΑ, sometimes written as ΓΙΟΣ and ΜΥΓΑ, both these forms occur in Roman period papyri
ΑΥ	/af/ before most letters or /av/ if before the consonants β, γ, δ, ζ, λ, μ, ν or ρ
ΑΥ̇	/a/-/i/ due to diaeresis, when at the junction of a compound word, eg. ΑΥ̇ΛΟΝ
ΕΥ	/ef/ before most letters or /ev/ if before the consonants β, γ, δ, ζ, λ, μ, ν or ρ
ΗΥ	/if/ before most letters or /iv/ if before the consonants β, γ, δ, ζ, λ, μ, ν or ρ
ΟΥ	/u/ as in g ood
ΟΥ̇	/o/-/i/ due to diaeresis, when at the junction of a compound word, eg. ΕΜΠΟΡΟΥ̇ΠΙΛΛΗΛΟΣ

Unlike ΟΙ, ΟΙ̇ is never a diphthong and is pronounced /o/-/i/, eg πρῶια.

Long vs short pronunciation of the vowels

Regarding the length, with the exception of the heth or jot or other consonantal pronunciation of iota, ypsilon and sometimes εἰ and more rarely and inconsistently ε, αἰ or οἰ, in Modern Greek vowels have the long length. In Koine, ε and ο were considered short but in Modern Greek they are normally long unless before another vowel or diphthong, where epsilon becomes often an iota and is pronounced as one (in the consonantal heth pronunciation). This situation never arises for omicron, therefore it is always long in Modern Greek. The vowels η and ω are always long (in Modern as well as in Koine Greek). The vowels α, ι and υ, were bitemporal, but this applies today only for ι

and υ. They can be either long or short. Therefore the classical short pronunciation regularly coincides with the Modern Greek (presumably not only Modern Greek) consonantal pronunciation for the iota and ypsilon. In other words, the long vs short distinction at the time of the Koine has survived and has not been eclipsed as some scholars have argued but for the short pronunciation of omicron and the short pronunciation of diphthongs AI and OI in a final position in Koine. The error here has been that the Erasmians attributed to the long vowels a double long length, such as /o/-/o/ for the Omega. So the word ΩON is being pronounced in the Erasmian style as /o/-/o/-/o/n and ΖΩΟΛΟΓΙΑ as z-/o/-/o/-/o/logia. The actual distinction between short and long in Modern Greek is that of a consonantal vs a pure vocalic pronunciation. This may be the greatest single misunderstanding in the history of the Erasmian pronunciation and of Greek phonology in general. Even the shape of omega, that of an open omicron, suggests the same convention in Koine.

For an interesting discussion see also the current entry in Wikipedia http://en.wikipedia.org/wiki/Ancient_Greek_phonology. The current incarnation of the Wikipedia entry (2008) partly adheres to the modern Erasmian pronunciation while pointing out some recent discoveries challenging older Erasmian beliefs.

APPENDIX

I list here some non-Indo-European Hellenic words. The list is not exhaustive, these are just cases where there is a strong pattern of irregular nouns, especially placenames that can be considered of non-Indo-European origin. It would appear that all feminine nouns ending in –ος have no Greek etymology and are of non-Indo-European origin. They are often names of islands and cities or towns.

Feminine placenames with irregular suffix –ος from Crete: *Κνωσσός, Φαιστός, Τιλισσός, Αμνισσός, Ιτανός, Ζάκρος, Ζάρος, Ινατός, Σιβριτός.*

Feminine placenames with irregular suffix –ος not from Crete: *Ερεσός, Ιωλκός, Έφεσος, Αμμόχωστος, Άνδρος, Νάξος, Πάρος, Μύκονος, Δήλος, Σέριφος, Σίφνος, Μήλος, Τήνος, Κίμωλος, Νίσυρος, Κύθνος, Σίκινος, Σύρος, Κύπρος, Ρόδος, Κώς, Σάμος, Κάρπαθος, Κάσος, Τήλος, Λέρος, Πάτμος, Γαύδος, Λέσβος, Αήμιος, Χίος, Θάσος, Ίμβρος, Τένεδος, Σκιάθος, Σκύρος, Αλόνησος, Σκόπελος, Κόρινθος, Όλυθος, Απείραθος (Νάξου), Αμάρυνθος (Ευβοίας), Κάρυστος (Ευβοίας), Πύλος, Τρώοδος.*

Feminine irregular suffix in –ος in common nouns (not placenames): *οδός, νήσος, δοκός, παρθένος.*

Feminine irregular suffix in –υς from Arcadia: *Τίρυνς, Γόρτυς.*

Feminine irregular suffix in –υς in common nouns (not placenames): *υλός.*

Masculine irregular suffix –υς: *Ραδάμανθυς, πέλεκυς.*

Neutral irregular suffix -ος: *Άργος, άνθος, φώς.*

Possible neutral irregular suffix -ος: *είδος, όνειδος, πάθος, σθένος, πένθος.*

Possible non-irregular: *Φαλασσάρνα, θάλασσα, Γαία.*

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