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MOUNT PARNASSOS AND THE LABYRINTH: FROM KORINTHOS TO KNOSSOS, FROM ZAKYNTHOS TO HALICARNASSUS

This paper revisits the Greek **-nthos-* and **-ssos/*-ttos* names and analyzes them in the context of the language contacts between the Pre-Proto-Greek peoples arriving in Greece and the Pre-Greek populations already in place. It starts overviewing the prehistoric process of formation of the Greek language from Proto-Indo-European. A few concepts are defined, such as *Pre-Proto-Greek*, *Proto-Greek*, *Common Greek* and *Pre-Greek*. After an update on the main hypotheses regarding the dates of entry into Greece, the author stresses the role of the Pre-Greek substratum in the shaping of Proto-Greek due to the implicit phenomenon of *language shift* completed by the Pre-Greek population, and proceeds to an initial analysis, on the basis of the limited data available, of the Pre-Greek language(s), making use of Pre-Greek onomastics as the main, albeit indirect, source of information. With these names on the table, it is postulated that the phonological structure of the Proto-Greek plosive consonants (the fact, in particular, that the inherited voiced aspirated plosives appear as voiceless aspirated plosives in Greek) may show the effect of Pre-Greek, whose linguistic affiliation has given rise to several conflicting theories and many doubts. Even if the Anatolian hypothesis has seduced many researchers, a non-Indo-European option seems preferable. After considering different Pre-Indo-European proposals (Beekes, Facchetti, Schrijver), conclusions are drawn about possible coincidences between the Pre-Greek and Etruscan phonological systems and what this may imply. Schrijver's recent suggestion that perhaps the language of the Minoans could be distantly related to Hattic is also considered. This could constitute an alternative explanation to the toponymic coincidences between the two regions: they could be sharing a pre-Indo-European substratum.

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Key words: Pre-Greek and Greek onomastics; Proto-Indo-European and Pre-Indo-European substrates; Pre-Proto-Greek; Proto-Greek; Pre-Greek; aspirated voiceless stops; Pre-Greek toponymy; Anatolian languages; Etruscan; Hattic

1. Introduction. Pre-Proto-Greek, Pre-Greek, Proto-Greek and Common Greek

Home of the muses in classical tradition, and with them of poetry, music or learning, Mount Parnassus (Παρνασσός), the sacred mountain dedicated to Apollo, today casts its shadows over Delphi, perched on its southern slope a few kilometers north of the Gulf of Corinth. Both toponyms, *Parnassus* and *Corinth*, are significant in many ways, as we shall attempt to demonstrate in this paper.

An already classic proposal by Palmer [1962, 30] understood *Parnassus* to be a name of Luwian (that is, Indo-European of the Anatolian branch) origin. According to him, the Greek toponym would reflect Luw. *parnasas*, an adjective derived from *parna* ‘house’ or even ‘temple’, the toponym then may be meaning something like ‘temple mountain’. Even if this particular instance has always sounded relatively reasonable, however unprovable (as too often happens with hypotheses based almost exclusively on toponymic apparent similarities), the fact this case is isolated makes us consider the question unsolved. Palmer believed that at least a part of the Pre-Greek populations was of Anatolian stock, something still being discussed to this day, when several conflicting positions (more or less nuanced) are supported by different researchers. Some of those in agreement with Palmer’s hypothesis, as we will see, have also included the **-nthos-* names as evidence of it.

As for the interaction of the Greek language with its likely substrate languages in Greece, a few years ago J. de Hoz published an article entitled *De cómo los protogriegos crearon el griego y los pregriegos lo aprendieron* (*How the Proto-Greeks Created Greek and the Pre-Greeks Learned it*), which began with a disclaimer: “El título de esta contribución no es del todo correcto; en realidad habría sido más exacto un enunciado en que protogriegos y pregriegos apareciesen casi por igual como creadores de lo que podemos llamar razonablemente lengua griega, pero entiendo, como se verá, que los procesos de aprendizaje y sustitución de lengua tuvieron un papel muy importante en la creación del griego y eso es lo que he querido subrayar en el título”¹ [Hoz, 2004, 35].

¹“The title of this contribution is not entirely correct; actually, the statement that puts proto-Greeks and pre-Greeks on equal ground as creators of what we can reasonably call the Greek language could have been more accurate, but I understand, as will be seen below, that the processes of language learning and replacement played a very important role in the creation of Greek and that is what I wanted to emphasize in the title.”

In fact, I am more in tune with the reservations of his first paragraph than with his title, since I would prefer to reserve the term *Proto-Greek*² for that reconstructed ideal linguistic phase to which all historical Greek dialects were to be traced [Campbell, 2007, 158–159; Rowe & Levine, 2015, 340–341],³ the most chronologically recent common point among them all.

I am aware that the family tree model [Campbell, 2013, 187] in the reconstruction of the history of specific languages is substantially susceptible to refinement.⁴ In François' [2014, 163] words, “non-cladistic models are needed to represent language relationships, in ways that take into account the common case of linkages and intersecting subgroups”.⁵

Nevertheless, there are solid arguments that should allow us to establish a firm basis for reconstructing not so much the actual evolution of the languages spoken by specific prehistoric communities as the dialectal interrelation between varieties that reached the level of written language.⁶ Campbell [2013, 142–143] is aware of this problem which he considers one of the untenable “basic assumptions” of the comparative method.

Determining where and when this reconstructed language [see Rodríguez Adrados, 1999; Clackson, 2007], Proto-Greek, was spoken is not only a very difficult challenge [cf. Colvin, 2007, 2], but we may even have to admit that the Proto-Greek we are able to reconstruct does not really reflect *one* language spoken in any particular place by any particular community, for such a thing may have never existed.

In fact, no consensus has been reached on either the first question (place and date) or the second, perhaps simply because historical linguistics is not the best tool for determining absolute chronologies or geographical locations, just as archaeology is not the best tool for linguistic reconstruction [Rodríguez Adrados, 1998, 11].

² On the concept of Proto-Greek, see [Chadwick, 1975, 812–819; Dunkel, 1981; Morpurgo Davies, 1986; 1992; Drews, 1988, 25–45, 158–201; Hooker, 1999; Hall, 2002, 30–55; Garrett, 1999; 2006; Finkelberg, 2005, 42–64, 109–139; Rodríguez Adrados, 2005, 3–41; Giannopoulos, 2012; Fillos, 2014].

³ Feeney [2003, 2ff] discusses the difficulties encountered in language reconstruction by means of the traditional comparative method in its attempt to trace backwards (from the documented historical dialects) to that hypothetical common core we call proto-language. Being aware, moreover, that the reconstructed proto-language would immediately undergo innovations, since linguistic evolution does not stand still [cf. McMahon, 1994; Aitchison, 2001; Holt, 2003; Brinton & Traugott, 2005; Bybee, 2015; Burridge & Bergs, 2016].

⁴ Sometimes, for example, certain dialectal continuums challenge the reconstruction of a proto-language following the family tree model (due to ‘contaminations’ of some varieties with others, isoglosses between dialects of different groups, various and not always unravelling processes of koineisation, accommodation or levelling of dialects, etc. See [Kerswill, 2002] or [Fillos, 2014, 175], leading to the emergence of alternative non-cladistic methods such as the wave theory [Wolfram & Schilling-Estes, 2003; Labov, 2007; Heggarty et al., 2010; François, 2014] or the so-called *linkage* [Ross, 1988].

⁵ Similar reflections are frequent in the literature, cf. [Colvin, 2007, 1; Horrocks, 2010, 17].

⁶ In relation to the inevitable element of what Schwink [1994] calls “an intuitive undertaking,” which is an inseparable part of the traditional comparative method.

In recent times, additionally, we have witnessed advances in population genetics applied to this discussion. In terms of the characteristics of what its results can provide us with, they will be closer to the data provided by archaeology than to those coming from historical linguistics.

Being aware of these methodological reflections, partly posterior to de Hoz' article mentioned above [Hoz, 2004], let us say that, in the discussions on the "arrival of Greek" in Greece, researchers have been debating, for a long time now, two basic questions: whether that phase of the language we call Proto-Greek was reached outside Greece or already in Greece, and when.

In a classic article, Kretschmer [1909] argued that the Greek lineages would have entered Greece separately, in three invasions (Ionian, Achaean and Dorian) spaced several centuries apart (between 2000 and 1200 BC). But already Meyer [1913] and Beloch [1924] preferred to backdate their entry into Greece to a date no later than 2000 BC, and the idea of several entries began to be disdained: historical dialects would have shown a much greater degree of discrepancy in that case [Filos, 2014, 176]. López Eire [1974, 277] or Rodríguez Adrados [1998, 9ff] were also against this idea. Drews [1988, 3ff] offered a review of the research on the subject, finally proposing a hypothesis of an arrival, by sea,⁷ of the Greeks in Greece around 1600 BC [Ibid., 158ff]. This date, however, has been discarded as too late in more recent research.

De Hoz [2004, 36] indicates that the "posición más común" at the beginning of the 21st century is to consider that the entry took place between 2100 and 1900 BC, discarding Renfrew's [1987] approach, in which I agree.

Rodríguez Adrados [1998, 9ff] uses the term *Common Greek*, and not *Proto-Greek*, to refer to the language stage from which the Greek dialects derive, without making the distinction between *Urgriechisch* and *Gemeingriechisch* traditionally used by German linguists. Both terms, *Proto-Greek* and *Common Greek*, are common among researchers, sometimes interchangeably [cf. Filos, 2014, 175]. Méndez Dosuna [2006, 15] or Horrocks [2010, 16] also prefer to speak of *Common Greek*.

The term *Urgriechisch* [Filos, 2014, 176] related to the inherited forms of Indo-European prior to dialectal fragmentation, while *Gemeingriechisch* referred to common dialectal developments after the fragmentation of *Urgriechisch*. But because it is often complicated to attribute certain innovations to one or the other level, a less precise use of the term *Common Greek*, encompassing both levels, and even expressions such as *pre-dialectal Greek*, etc., is frequent [cf. Lejeune, 1972, 13; Morpurgo Davies, 2012].

As far as the term *Pre-Proto-Greek* is concerned, it may seem very broad and that it does not do justice to an easily definable linguistic reality: it is neither Proto-Indo-European nor Proto-Greek. In this paper, I understand Pre-Proto-Greek as the last

⁷This would seem to imply a particularly close relationship with the Anatolian branch, which is taken further by Renfrew [1987], who traces the arrival of Indo-European in Greece to 6,500 BC, from Anatolia, something which Rodríguez Adrados [1998, 12] emphatically rejects.

phase in the development from common Indo-European, on its way, geographically and linguistically, to Greece [cf. Rau, 2010].

We also encounter the polysemy of the prefix *pre-*: ‘something prior to, but on the way to becoming’ vs ‘something prior to, but on the way to being replaced by’.⁸ Anthony [2010, 50–51] calls *Pre-Greek* what I call *Pre-Proto-Greek*, i.e. “the phase that preceded Proto-Greek, probably originated as a dialect of late Proto-Indo-European at least five hundred to seven hundred years before the appearance of Mycenaean Greek, and very probably earlier—minimally about 2400–2200 BCE.” Except for the name, which does not seem to me fortunate, I agree that this phase of the immediately preceding language could be placed already at that time in the northern vicinity of Greece.

Pre-Proto-Greek is not Proto-Indo-European, as Anthony [2010, 51] seems to suggest. It is already a variety of Proto-Indo-European, broken off from the common stock perhaps as early as a millennium earlier. Pre-Proto-Greek would have evolved in relative proximity with the pre-*proto*-languages of the Indo-Iranian, Armenian [Clackson, 1995] or Phrygian branches [Anthony, 2010, 51, 369]. Pre-Proto-Greek would have entered Greece perhaps between 2100 BC and 1800 BC and, in contact with the substratum language (which is what I prefer to call Pre-Greek) would adopt the latest innovations, would incorporate its last characteristic common Greek features, so that would then become Proto-Greek.⁹

Despite much of the reconstruction of the facts that has been conducted for decades, we must place Proto-Greek within Greece already,¹⁰ for this last common phase of the language seems to show already the linguistic effects of the fact that the Pre-Greek populations abandoned their languages, learning the new one in an imperfect way. If all Greek dialects show the effects of the Pre-Greek substratum, we must postulate that the innovations derived from these effects took place already in Greece. *Ergo* any linguistic variety prior to the entry into Greece should not be called Proto-Greek, but Pre-Proto-Greek (Fig. 1).

Recently, different authors [Georgiev, 1973; 1981; Sakellariou, 1975; 1980; 2018; Phylaktopoulos, 1975; Katona, 2000] have proposed the region marked on Fig. 1 as a possible place of final crystallisation of Proto-Greek (2,200/2,100 BC — 1,900 BC), in contact with Pre-Greek substrates and adstrates. Subsequently, the occupation of the lands further south and the assimilation of the language(s) spoken there would have taken place. Among the Pre-Greek linguistic reality there could have been previous Indo-European languages or dialects. Or not, we do not know. And the substratum could have been a mosaic of languages or a more homogeneous bloc. Among the immediate Proto-Greek substrate languages, there might (or might not) have been some closely

⁸ Campbell [2013, 199] also mentions these two possible meanings of the prefix *pre-*.

⁹ Fillos [2014, 175] explains it in a very similar way, although he calls the varieties mentioned here *proto* and not *pre-proto*, as I would prefer: “Proto-Greek was *practically* formed *after* the arrival of its speakers in Greece and their merger with pre-Greek populations” (italics mine).

¹⁰ A similar view also seems to emerge from Horrocks’ [2010, 9] words.

related to the Minoan language(s) represented by Linear A,¹¹ or to any of the possible other pre-Greek languages of Crete or the Aegean region.



Fig. 1. The presumptive area of final crystallisation of Proto-Greek

I believe, like Javier de Hoz [2004], that, without attributing all the innovations in Greek to substratum phenomena derived from the inherent *language shift* process,¹² a part of them may be due to factors of this kind. And they must have already taken place in Greek lands, which is especially clear if we can identify characteristics of later Greek in pre-Greek linguistic features.

If for the final configuration of Proto-Greek the Pre-Greek linguistic substratum were a necessary element [cf. Colvin, 2007, 3], the hypothesis that it would have

¹¹ This language may also be represented, in alphabetical script, in a handful of inscriptions, known as Eteocretan, dating from a thousand years later [see Duhoux, 2007a; 2007b].

¹² Strictly internal developments can also explain many of these changes. On various implications of the concept of language shift, see [Thomason & Kaufman, 1988; Bonfil Batalla, 1996; Mackey, 2001; Barreña et al., 2007; Mufwene, 2008; Ostler, 2011; Wendel & Heinrich, 2012].

crystallised as such before entering Greece would lose plausibility, and would give arguments to those of us who prefer to think that the incomers entering Greece would be speakers of certain Indo-European linguistic variety(ies) to which we could not apply the term Proto-Greek, but rather that of Pre-Proto-Greek [Campbell, 2013, 211]. Once acquired this last and important varnish, Pre-Proto-Greek can then, and not before, be called Proto-Greek.

By Pre-Greek, then, I mean the language(s) that the Pre-Proto-Greeks encountered when they entered Greece at the end of the 3rd millennium or the beginning of the 2nd millennium. These language(s) could well not be Indo-European (although there have been abundant proposals to the contrary). We know it (them) only indirectly, from Pre-Hellenic toponymy in Greece, from lexical borrowings in Greek without Indo-European etymology and/or with phonetics not compatible with Greek (such as ἀσάμινθος, see below), and perhaps from some of the characteristic phonetic features of Proto-Greek which contrast with those of nearby Indo-European families.

2. Effects of Pre-Greek on Pre-Proto-Greek. Toponyms and Greek phonology

We have no direct knowledge of this or these substratum language(s).¹³ Our references to its/their formal characteristics derive from the impression we get from lexical borrowings in later Greek (only 40% of Greek vocabulary has an etymology or pedigree [Morpurgo Davies, 1986, 105–107] of Proto-Indo-European/Pre-Proto-Greek origin), among them a group of toponyms with clear formal characteristics (forms ending in *-ssos/-ttos* and in *-nthos* which we find both in the common lexicon and in toponymy)¹⁴ and very wide distribution across Greek lands,¹⁵ as well as from the hypothetical substrate influence of this/these language(s) on the definitive form of Proto-Greek, as we already saw at the opening of this paper.

This last aspect is the focus of de Hoz' [2004] proposal. Although difficult to prove, the possibility that the ultimate form of the Greek consonantal repertoire may have been influenced by Pre-Greek articulatory habits seems plausible to me.

¹³ De Hoz [2004, 37] seems to favour the possibility that this substratum was relatively homogeneous (linguistically speaking).

¹⁴ Already identified by Kretschmer [1896]. See also [López Eire, 1967]. Exactly this same year (1967), Gindin published a monograph on the onomastic evidence for different language layers in the South of the Balkans. He believed one Pre-Indo-European and two different non-Greek Indo-European layers (one Anatolian, the other "Pelasgian," akin to Thracian) could be identified there, making extensive use of these names [Gindin, 1967, 54–57, 60–62, 169–170]. In 1988, though, Otkupschikov expressed an opinion that, globally, is closer to mine: Pre-Proto-Greek, dialectally close to other non-Anatolian Indo-European languages of the South of the Balkans (Thracians, Phrygian, Macedonian, etc.), upon arriving in "Greece" just found a single Pre-Indo-European layer. He also deals with these names [Otkupschikov, 1988, 144–164].

¹⁵ From Zakynthos to Halicarnassus, from Knossos to Parnassos, Hymettus or Korinthos.

It is indeed striking that the Greek aspirated plosives are voiceless, considering that they are hypothesised to stem from a set of Proto-Indo-European voiced aspirates,¹⁶ with the Italic branch being the only one which, in certain contexts, also shows voiceless results.

3. Identification of the Pre-Greek substratum: main theories

The different hypotheses about the adscription of the specific Pre-Greek language responsible for these toponyms and loanwords have generated rivers of ink in research. De Hoz [2004, 40] gives a critical review of those hypotheses (showing a healthy level of skepticism), summarizing the main views proposed by different authors. The Pre-Greek substratum is suggested to be constituted by:

- a non-Indo-European language spoken in Greece, Crete and the Aegean islands, or
- an Indo-European language or languages, explained by either a substratum akin to Luwian, of the Anatolian family [Palmer, 1962; 1980, 9ff], or by an Indo-European language of a less precise substrate adscription.¹⁷

In this context, Colvin's [2007, 3] words describe well¹⁸ our limitations to linguistically characterise Pre-Greek: "These non-Greek words may conceivably belong to an Indo-European language that was brought to Greece before the arrival of the Greek-speakers (either an unknown language, sometimes named Pelasgian, or a neighboring language such as Luwian). But this 'substrate' language cannot be reconstructed from the meagre evidence at our disposal, and its affinities are probably beyond the reach of our research."

¹⁶ Cf. [Méndez Dosuna, 2006, 12]: "cualquiera que haya sido la prehistoria de las aspiradas griegas, está claro que en época micénica ya eran sordas" <whatever the prehistory of the Greek aspirates was, it is clear that in Mycenaean times they were already voiceless>. However, there could be indications in Linear B [Melena, 1987] of an earlier situation, which could point to voiced values at some point in the prehistory of the Greek aspirated plosives, although I believe that this is a hypothesis that is still difficult to prove. In order to date this devoicing of the voiced aspirates, we have certain important hints, such as Grassmann's Law, according to which an aspirated consonant loses the aspiration if followed by another aspirated consonant in the next syllable: θρίξ 'hair' vs τρίχες 'hairs'; φύω 'I grow' vs πέφυκα 'I have grown'. As we can appreciate, this process took place *after* the devoicing of the inherited Proto-Indo-European aspirates was over, since when the aspirate consonant loses the aspiration in the dissimilation process, the result is a plain voiceless stop, not a voiced one. The process we call Grassmann's Law occurred also after the Greek loss of initial *s- before a vowel (> h-): *séǵ^hō > *hek^hō > ἔχω 'I have' (with dissimilation of *h...k^h), vs the future tense form *séǵ^h-sō > ἔξω 'I will have'. In relation to the dating of Grassmann's Law, see the recent contribution by Filip de Decker [2015, 171] who believes it had not taken place in Mycenaean Greek yet: "We would therefore conclude that it is certain that Grassmann's Law occurred in a post-Mycenaean period, but that it occurred almost certainly later than 1200 BCE." If this is correct, and there are strong indications to support this view, this leaves quite an important time margin for the completion of the devoicing of the aspirates: after the arrival of the Pre-Proto-Greeks in Greece (around 2000 BCE) but before the end of the Mycenaean period (1200 BCE). In my view, though, in agreement with Méndez Dosuna [2006, 12], it most likely happened before the Mycenaean period, when the bulk of the Pre-Greek population shifted to Greek, between 2000 and 1800 BCE.

¹⁷ De Hoz [2004, 41] prefers to think that some of these borrowings can be related to the interaction of Pre-Proto-Greek with other Indo-European varieties before entering Greece.

¹⁸ Horrocks [2010, 9] is even more cautious.

3.1. *-nthos* and *-ssos/-ttos*

Finkelberg [2005, 5–6] is enthusiastically in favour of the idea of an Anatolian substratum justified by proper names and appellative lexemes with the suffixes *-ss-* and *-nth-*: “The even spread of the suffixes *-ss-* and *-nth-* over Western Asia, Greece and Crete strongly suggests that the so-called Pre-Hellenic populations of Greece were of Anatolian stock.”¹⁹ This seems also to be Duhoux’s position [1998; 2007a, 228], as we will comment in more detail below. Beekes [2014, 1], however, argues against considering the Pre-Greek substratum as Indo-European (Fig. 2, 3).

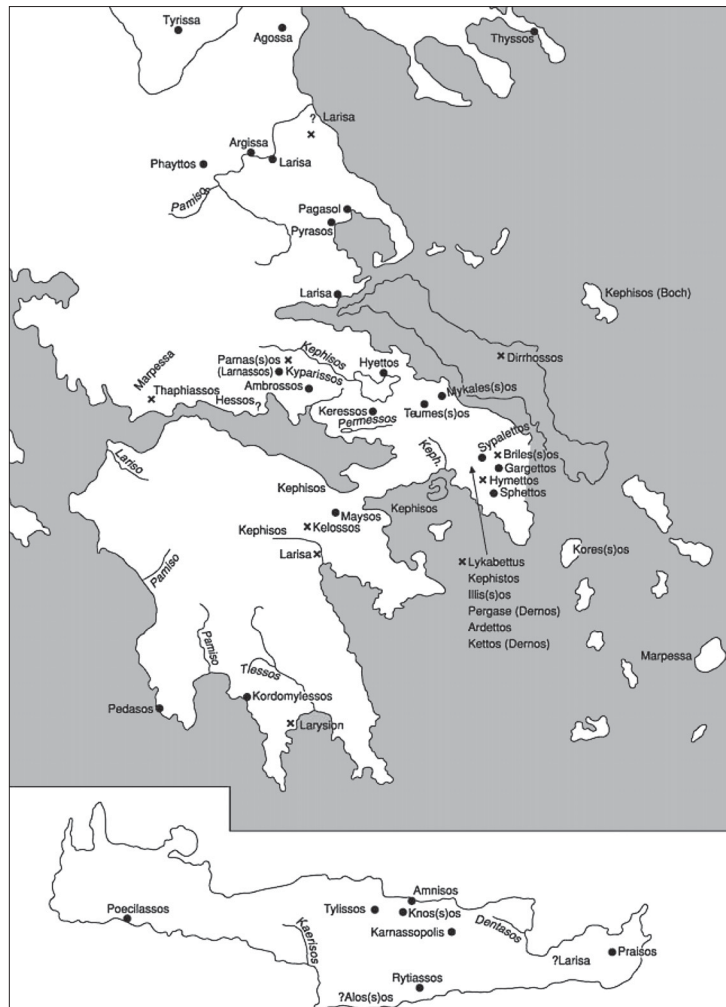


Fig. 2. Names with the suffix *-ss-* in Greece [Finkelberg, 2005, 45]

¹⁹ See on these pages the distribution maps in [Finkelberg, 2005, 43–46], who follows [Schachermeyr, 1967].

non-Greek inscriptions, etc.). But we are going to analyse some of the morphological and phonetic characteristics of the suffixes to see whether we can draw some conclusions about some of the features of this language that we only know in this indirect way.

Table 1

Proper names and appellative lexicon items ending in -νθος, -σσός/-ττός

	Personal names	Place names	Appellative vocabulary
-νθος	Ῥαδάμανθος	Ἐρύμανθος Ἵορύμανθος (LB <i>o-ru-ma-to</i>) Πύρανθος Κόρινθος (LB <i>ko-ri-to</i>) Λέβινθος Πρεπέσινθος Προβάλινθος Σάμινθος Σύρινθος Ἄμάρυνθος (LB <i>a-ma-ru-to</i>) Ἄράκυνθος Βερέκυνθος Ζάκυνθος (LB <i>za-ku-si-ja</i>) Ζήρυνθος Κόσκυνθος	ἄσάμινθος 'bath-tub' (LB <i>a-sa-mi-to</i>) ἄψινθος 'absinthe' ἐρέβινθος 'chick pea' κήρινθος 'inferior quality honey' λαβύρινθος 'labyrinth' (LB <i>da-pu2-ri-to-</i>) μήρινθος 'cord' τερέβινθος/τέρμινθος 'terebinth' ὑάκινθος 'hyacinth' κολοκύνθη 'gourd, pumpkin' ὄλυνθος 'wild fig'
-σσός/-ττός		Ἄρδηττός Γαργηττός Κερησσός Λυκαβηττός Μυκαλησσός Παρνασσός Περμησσός Συπαληττός Τευμησσός Ἰηττός Ἰμηττός Ἄμισός (LB <i>a-mi-ni-so</i>) Βόλισ(σ)ός Βρῆλισ(σ)ός Ἴλισ(σ)ός Καρνησσόπολις Κνωσ(σ)ός (LB <i>ko-no-so</i>) Πραισός (cf. Eteocretan: ... φραισο...) Τύλισος (LB <i>tu-ri-so</i>) Φαιστός (LB <i>pa-i-to</i>)	κολοσσός 'statue in human form' κυπαρισσός 'cypress' (LB <i>ku-pa-ri-se-ja</i>)

3.1.a. As for the **-σσός/-ττός formant**, the only phonetically relevant point to be made here is that the suffix double results suggest the presence of a *yod* following a dental (or even a velar) voiceless stop: dialects such as Attic would show the -ττός outcome (a quite common Attic result of both **ty-* and **ky-* clusters, and even of **tw-*) [cf. Horrocks, 2010, 19]: Ἄρδηττός, Γαργηττός, Λυκαβηττός, Συπαληττός, Ὑηττός, Ὑμηττός, but elsewhere the usual outcome shows the expected strong intervocalic sibilant result of those clusters, in most cases showing gemination (Κερησσός, Μυκαλησσός, Παρνασσός, Περμησσός, Τευμησσός) but not always: Ἄμνισός (LB *a-mi-ni-so*), Βόλισ(σ)ος, Βριλησ(σ)ός, Ἴλισ(σ)ός, Κνωσ(σ)ός (LB *ko-no-so*), Πραισός (cf. Eteocretan: ...φραισο...), Τύλισος (LB *tu-ri-so*). Φαιστός (LB *pa-i-to*) looks a little exceptional in this series.²⁰

Therefore, it would be completely reasonable to assume that the origin of this toponymic formant was a morphological segment that included a dental (or even a velar) stop and a /j/ (or even a /w/): **tyos/*kyos* or **twos*. In this context, Beekes [2014, 5] proposed a repertoire of Pre-Greek labialized and palatalized plosive sounds²¹ (as seen in Table 2) that could fit well. This toponymic formant could, perhaps, just include the proposed palatalized **tʲ*, or alternatively **kʲ* or even **tʷ*.

Table 2

Pre-Greek plosives according to [Beekes, 2014, 5]

p	p ^y	p ^w
t	t ^y	t ^w
k	k ^y	k ^w
s	s ^y	s ^w
r	r ^y	r ^w
l	l ^y	l ^w
m	m ^y	m ^w
n	n ^y	n ^w

3.1.b. In any case, and even if both formants could reveal some important aspects of this particular Pre-Greek language, for the purpose of this paper, **-vθος** is significantly more relevant. Regarding the -vθος place names Duhoux²² [2007a, 228] points out that “[t]his suffix has no satisfactory explanation in Greek, which is also true of most of the roots to which it attaches itself. Given that -vθος is attested from as early

²⁰ Personally, I am not at all certain this name belongs in this group, even if Duhoux [2007a] includes it.

²¹ Cf. already [Palmer, 1963].

²² Cf. also [Hoz, 2004, 46–47].

as the Mycenaean period, it must have been in use before the Mycenaean Greeks arrived. It is probable, therefore, that $-v\theta o\varsigma$ comes from some Pre-Greek language. This language could have been hypothetical, since $-v\theta o\varsigma$ seems not to be attested in any of the Pre-Greek languages for which there is direct evidence. Nevertheless, there appears to have been an exact correspondence in the Anatolian languages (a branch of languages of the Indo-European family spoken in historic times in Anatolia). Indeed, this particular linguistic family uses the place name suffix $-nda$, written $-v\delta\alpha$ when it is Hellenized. Anatolian $-nda$ may be linked to the IE $*-nt$. Does the Pre-Greek suffix $-v\theta o\varsigma$ then also come from the same root? Yes, if we suppose that it comes from $*-nt$ - with aspiration of the dental: $*-nt- > -nt^h-$. If all this is correct, one might conclude that most Greek place names in $-v\theta o\varsigma$ are likely to be legacies from one (or more) languages close to the Anatolian branch which was spoken in certain regions of Greece before the Mycenaeans settled there.”

My first comment about this positivistic paragraph is that one must start by admitting that it is perfectly plausible that these *apparent* toponymic similarities are not proven and indeed are not a sure indication of the linguistic affiliation of the substrate. All we can say is that there *seems* to be (or even just that there *could* be) a common toponymic series with regions where we are aware of the roughly contemporary (perhaps until the last phases of the Greek Bronze Age) presence of Anatolian languages. It should not be forgotten that the postulated correspondence does not necessarily indicate that these names make use of one and the same formant, since, given the very small phonic entity of the elements, the possibility exists that we are dealing with casual homophonies between formations with various origins, potentially even from several languages²³ (Fig. 4).

But even if we admit the correspondence, it is also plausible that the series indicates that both mainland Greece and regions of Asia Minor more or less close to the coasts shared an older, very likely Pre-Indo-European, substrate, and that these names represent two independent attempts at phonetic adaptation to the new languages.

If both areas, in sum, did really share a common toponymic formant, this could be interpreted as an indication that the substrate language may be Indo-European of the Anatolian group, as some researchers have assumed [e.g. Palmer, 1962; Finkelberg, 1997; 2005; Duhoux, 2007a]. But we cannot rule out that we are dealing with the survival in different Indo-European languages of a toponymic element attributable to a Pre-Indo-European language of a substrate that was common to both areas [cf. Hoz, 2004, 48].

²³ On homonymous toponymic formants of different origin, see [García Alonso, 1996; 2010].



Fig. 4. Names with the suffix *-nth-* in Greece [Finkelberg, 2005, 46]

To ascertain which of the two options should be discarded and specially to explore the second possibility, we will begin by considering what phonetic origin the Greek forms with a voiceless aspirated plosive (*-nth-*) and the Anatolian forms with plain voiced ones (*-nd-*) could have shared. As we just saw above, Duhoux [2007c, 228] states clearly a quite spread view among many researchers: “Does the pre-Greek suffix *-vθος* then also come from the same root? Yes, if we suppose that it comes from **-nt-* with aspiration of the dental: **-nt- > -nth-*.”

Even if Duhoux does not attempt to justify or to explain the reasons for that “aspiration” having taken place in Greek, the **-nt-* suffix assumed would be a well-known formant in Indo-European languages. It would be impossible to be certain, though, that there was *not* anything remotely similar in a non-Indo-European language of the area.

Looking at the two different phonetic outcomes though, if we were to consider the Greek form as an adaptation into Greek of an Anatolian substrate, there is no way to understand the voiceless aspirated Greek result, given the fact that Anatolian languages show no sign of any aspiration, but rather just an apparent voicing of the supposedly original **-nt-* element...

- Why would a plain voiced plosive of a proposed Anatolian substrate be adapted by the Pre-Proto-Greeks as a voiceless aspirated?
- Why would this have happened if Anatolian languages did not have voiceless aspirated plosives (or any aspirated consonant, for that matter)?
- Why would Pre-Proto-Greek not just use their plain voiced (or even voiceless in case this was borrowed in a moment when the Anatolian substrate had not still voiced the originally voiceless **-nt-* element) (Fig. 5)?



Fig. 5. Names with the suffix *-nd-* in Anatolia [Finkelberg, 2005, 44]

In my opinion, it is very unlikely that voiced forms from an Anatolian substrate, in which, as we shall see, there were actually not even aspirated consonants any longer, would trigger a voiceless aspirated result in Pre-Proto-Greek, which seems not yet to have had this series in its phonetic repertoire upon coming into contact with the local population (the inherited aspirates of Proto-Indo-European origins would still be voiced), and would even end up devoicing the whole inherited series, as *if influenced* by a certain substrate in this phonetic point precisely.

In my opinion, it would make more sense, from a purely phonetic point of view, to put the two known results (the Anatolian *-nd-* and the Greek *-nth-*) in relation to a substrate common to both. What would be the phonetic starting point in this case? What could be inferred from this possible substrate from this indirect perspective?

4. Identification of Pre-Greek from its effects on Greek

Among the phonetic features peculiar to Greek, most of those that give it a personality with respect to the rest of the languages of the family [cf. Horrocks, 2010, 9–10] are not anomalous and are banal innovations known in many languages in the world, and can therefore probably be due to internal developments, and not have been motivated by interaction with any substratum (although this cannot be ruled out either).

However, one of them is eye-catching: “The voiced aspirates of IE (**bh*, **dh*, **gh*, **gʰh*) were de-voiced, as in φέρω [phero:] ‘carry/bear’, beside Sanskrit *bhārāmi*” [Horrocks, 2010, 10]. Can we consider that this innovation was motivated by the effect of an undetermined Pre-Greek substratum? In my opinion, we are not in a position to establish with certainty the precise linguistic affiliation of a language that we do not know directly, but if Pre-Greek affected Pre-Proto-Greek at that point, we may be dealing with one of its features.

It could be postulated [cf. Hoz, 2004] that the devoicing of the Greek voiced aspirates is due precisely to the interaction with a substrate language that *had them* (and *did not have* voiced ones): beyond these isolated lexical elements and this toponymic series, it is precisely the fact that this language had a series of voiceless aspirates and that it lacked voiced aspirates what led to the Proto-Greek innovation, in contrast to other otherwise really close Indo-European language branches, of devoicing all the inherited voiced aspirated stops.²⁴

²⁴ Cf.: “... los datos balcánicos apuntan a que si los protogriegos hubiesen eliminado las sonoras aspiradas antes de la entrada en Grecia, lo hubiesen hecho transformándolas en simples sonoras, y por lo tanto posiblemente las traían consigo cuando empezaron a conocer nombres de lugar con el sufijo *-ntho-*” <the Balkan data suggest that if the proto-Greeks had lost their voiced aspirated [stops] before entering Greece, they would have done so by transforming them into simple voiced, and therefore, possibly brought them with them when they got to learn place names suffixed in *-ntho-*> [Hoz, 2004, 50]. Regarding Macedonian, in which the voiced opposed to the voiceless Greek aspirates seem to confirm exactly this, see, however [Babaniotis, 1992; Méndez Dosuna, 2006, 16–18].

It could be interesting to remember Etruscan in this context, a language, using Wallace's [2016, 218] recent words, whose "consonant system had two series of voiceless stop sounds. The first series was un-aspirated /p, t, k/, the second, aspirated /p^h, t^h, k^h."

Table 3

Pre-Proto-Greek, Proto-Greek, and Etruscan plosives

Pre-Proto-Greek Plosives				
Voiceless	*p	*t	*k	*k ^w
Voiced	*b	*d	*g	*g ^w
Voiced aspirated	*b ^h	*d ^h	*g ^h	*g ^{wh}
Proto-Greek Plosives				
Voiceless	*p	*t	*k	*k ^w
Voiced	*b	*d	*g	*g ^w
Voiceless aspirated	*p ^h	*t ^h	*k ^h	*k ^{wh}
Etruscan plosives				
Voiceless	p	t	k	
Voiceless aspirated	p ^h	t ^h	k ^h	

If we were to postulate a similar structure for Pre-Greek with regard to the voiceless stops, we might intuit that the speakers of such a language, in adapting to the pronunciation of the consonants brought to Greece by the Pre-Proto-Greeks, would find that their native voiceless aspirated sounds (phonemes or rather mere allophones, as we shall see) were the closest in their repertoire to imitate the articulation of the voiced aspirated sounds of the incomers' language. When Pre-Greeks tried to learn Pre-Proto-Greek and tried to incorporate the articulation of the voiced aspirated plosives brought by the newcomers, the resulting pronunciation became voiceless aspirated, because Pre-Greeks would not be sensitive to the phonological distinction between voiced and voiceless, but to the contrast between aspirated and non-aspirated consonants. Could something like this have motivated the change of the phonological system of Greek stop sounds?

As another working hypothesis for certain phonetic characteristics of the substrate language, Beekes [2014, 5] postulates that Pre-Greek would share a trait that seems quite widespread across the Mediterranean in the Bronze Age: opposition of stops not by a voicing contrast or by presence/absence of aspiration, but rather by a *fortis/lenis* contrast.²⁵ Beekes [Ibid.] notes the following about Pre-Greek stop stops: "Voiceless,

²⁵ Further away from the Aegean sphere we can recall certain features attributed to Proto-Vasconic [Lakarra, 2017; García Alonso, 2018] or visible in Etruscan. In doing so, I do not postulate the classification of Pre-Greek as a Vasconic or Tyrrhenian language. But I do consider it possible that Pre-Greek was a Mediterranean substrate language that was inserted in a linguistic area (*Sprachbund*) [Hoz, 2004, 50]

voiced and aspirated stops may interchange in Pre-Greek words, without any apparent conditioning factors. This fact shows that voice and aspiration were not distinctive features in Pre-Greek,” adding in note that, “of course, it could be due to the fact that a different distinction was present in Pre-Greek (like *fortis/lenis*, found in most Anatolian languages)” (my italics).

If the Pre-Greek repertoire of plosive phonemes was similar to what Beekes [2014, 5] postulates in the table reproduced above (see Table 2), neither the degree of voicing nor aspiration would have been relevant in phonemic characterisation.

Beekes [2014, 5] refers to this,²⁶ noting, with respect to Pre-Greek borrowings, that “the stops show variation between voiced, voiceless and aspirated, so that there presumably was no phonemic distinction between voice and aspiration in the language.”²⁷ In this case, it should be said that, although this hypothetical consonant structure does not seem to justify the Greek innovation of devoicing the inherited voiced aspirated sounds in such a clear way as what we call the ‘Tyrrhenian’ hypothesis, it could be indicative also: it could be pointing out to speakers for whom the degree of voicing was not phonologically relevant, or, in any case, to the difficult process of transition between two very different phonological systems of oppositions.

As a working hypothesis, far from being proved, of course, we could maybe propose the following scenario.

- A substratum language in which the plosive consonants are contrasted by an opposition *fortis/lenis*.
 - This Pre-Greek/Pre-Anatolian/Pre-Indo-European language had its own toponymic formant **-nd-*: nasal + *lenis* dental plosive.²⁸
 - The Pre-Proto-Anatolians arriving in Anatolia interpreted it as **-nd-*. After the language shift of Pre-Anatolians, the new Proto-Anatolian **-nd-* was the result of the interaction between the new and the old language communities. The final outcome is written as *-vδ-* in our Greek sources.
 - Pre-Anatolians, when trying to *shift* to Pre-Proto-Anatolian, would carry their *fortis/lenis* phonemic distinction to Proto-Anatolian without noticing: they would continue pronouncing **-nd-* and would eventually even provoke a change in the phonemic opposition between stops in the new language (see below), out of all phonological contrasts of stops in the language.

in which consonants contrasted with each other by oppositions based on intensity or on the presence/absence of aspiration and not on the degree of voicing. In any case, such a phonemic opposition does not have to be justified neither by specific genetic or areal reasons. Many Australian aboriginal languages (or Zapotec in Mexico or even Korean) seem also to have made use of this criterion in the phonological opposition of consonants. For a more detailed discussion about the specific phenomenon of such a phonemic contrast, see [Jaeger, 1983].

²⁶ Cf. Furnée’s [1972, 115–200] 86 pages devoted to collecting possible examples.

²⁷ Javier de Hoz [2004, 44ff], also in relation to Furnée’s book, expresses a similar opinion.

²⁸ Alternatively, but to me this is less likely, this **-nd-* represents already an attempt to adapt to native lips a newly arrived Indo-European **-nt-*, perhaps adapted to local phonetics like this.

▪ The Pre-Proto-Greeks arriving in the Aegean area initially interpreted **-nd-*, both in place names and in common vocabulary, as **-ndh-*, perhaps because the articulation, at least in the Aegean area, was perceived as closer to the voiced aspirated plosives they brought with them than to the simple voiced ones.²⁹ Finally, with the massive language shift of the Pre-Greek populations of Greece and the Aegean, it would end up being pronounced as **-nth-* within the global devoicing process of Pre-Proto-Greek aspirated stops.

Had this devoicing anything to do with the articulatory habits of the Pre-Greeks while shifting to Proto-Greek? Does this agree with the hypothesis proposed above that links the Proto-Greek devoicing of the Pre-Proto-Greek voiced aspirated to an adaptation of the sounds to the phonetics of the substratum language during language shift? Maybe the answer could be that if voice was not phonemically relevant and aspiration was not phonemically relevant, only articulatory intensity mattered on phonological grounds. Both sonority and aspiration were irrelevant.

The *-nd-* end result in the toponyms on the Asia Minor coasts, in lands inhabited by speakers of Anatolian languages in the 1st millennium, agrees with the fact that the corresponding Anatolian language (Luwian?) had previously lost the aspiration, and that the outcome was apparently a voiced plosive in this case for reasons which, although we cannot really know in detail, may have to do with a feature of Proto-Anatolian consonantism (tentatively related to similar features of the Pre-Proto-Anatolian substratum) to which Melchert [1994, 21] points out: the underlying voicing contrast which still existed in PA was reanalyzed as a *fortis/lenis* opposition in the cuneiform languages, triggered by the gemination of intervocalic voiceless stops (probably already in PA), plus the prehistoric devoicing of initial voiced stops and the secondary creation of medial geminate voiced stops.³⁰

That is, the triple opposition of the Proto-Indo-European stops (**p/*b/*b^h; *t/*d/*d^h; *k/*g/*g^h*) evolved into a system of opposition of *fortis/lenis* already in Proto-Anatolian, reflected in writing as *p, t, k* vs *b, d, g*, although in Hittite and Cuneiform Luwian, the *lenis* consonants were *written* as if single voiceless plosives and the *fortis* ones as if voiceless geminates.³¹

We can speculate about the reasons for the change of phonological opposition pattern (with respect to what was supposedly inherited from Proto-Indo-European) in the Proto-Anatolian consonant series, and about whether it could have been motivated by some substrate language or not. It is perfectly plausible, but since we do not know

²⁹ In any case, both plain voiced and voiceless aspirates have in common that they have less articulatory intensity than plain voiceless and can occupy the *lenis* slot in a phonological *fortis/lenis* opposition system.

³⁰ See also [Melchert, 2012; Kloekhorst, 2016; 2020; 2021]. Cf. [Pascual Coello, 2014; Patri, 2009; 2019] for slightly different approaches. Against this *fortis/lenis* interpretation, though, see [Simon, 2020].

³¹ In the 1st millennium, Lydian, Lydian and Carian show that they have fricativised the *lenis* stops, in a process of lenition reminiscent of that characteristic of Western Indo-European languages like Celtic.

even very precisely where Proto-Anatolian crystallized (probably up to a millennium before Proto-Greek did, somewhere in central Anatolia), we can by no means be sure that the two substrates could be related, even only in the typology of their respective phonological systems.

In a recent and relevant paper, Schrijver [2019] points to possible lexical and grammatical connections of Minoan with Hattic, Sumerian and Northwest Caucasian languages, which could suggest that Anatolian languages were indeed built on a substratum possibly akin to Minoan in Central and Eastern Anatolia. We do not know, but cannot rule out, whether continental Pre-Greek was the same language as Minoan, or at least genetically related to it. But the distribution of the *-nthos-* and *-ssos/-ttos* place names and lexicon items, one must admit, do cover the whole region, as well as, perhaps, extensive Anatolian areas.

It could be envisioned, tentatively, that, when languages of this Anatolian family of languages encountered a hypothetical Pre-Indo-European substrate [Schrijver, 2019] perhaps akin to that found by the Pre-Proto-Greeks, they no longer had aspirates in their consonant repertoire and were already pronouncing their once voiced aspirates simply as plain voiced stops, whose articulation is *naturally lenis* when compared with the articulation of plain voiceless stops. The phonemic opposition in both languages, when they got in contact, would actually reside in two different aspects (degree of voicing in Pre-Proto-Anatolian and articulation intensity or tenseness in Pre-Anatolian). When language shift started, the phonologically irrelevant degree of voicing for the speakers of Pre-Anatolian was reinterpreted by them, and a voiced consonant simply became a *lenis* consonant. Would all this be consistent with Melchert's [1994, 21] observation, already mentioned above, pointing out that "the underlying voicing contrast which still existed in PA was reanalyzed as a *fortis/lenis* opposition in the cuneiform languages"? Could all this be due to the effects of the interaction (the language shift of an entire Pre-Anatolian community) with a substrate language in which that was the most phonologically important contrastive feature between different consonants?

In this context I would like now to return again to Etruscan, in order to see whether this reconstruction of possible characteristics might fit with what we know of this language, not necessarily, I insist, because I would dare to postulate a close genetic relationship between Etruscan and Pre-Greek (although we cannot rule it out),³² but because what seems reasonably plausible is that Pre-Greek and Etruscan (and Pre-Anatolian?) could share certain phonological elements of their consonant systems, perhaps simply because they are regional Mediterranean features, from Pre-Indo-European southern Europe. But do they?

³² In fact, this is what has been recently proposed, taking up an idea that goes back at least to Ventris [Chadwick, 1967, 34], by Facchetti [2001; 2002], with arguments worthy of consideration, though certainly not definitive by any means, as he himself prudently points out.

Etruscan has traditionally been considered a language isolate,³³ but for the past few years, following a widely accepted proposal by H. Rix [1998],³⁴ it is quite commonly accepted that it would be the best-known member of a Tyrrhenian family of languages, together with Rhaetic, in the Alpine region, and Lemnian from the northern Aegean, with (very scarce) epigraphic documentation on the island of Lemnos in the 6th c. BC.

Rhaetian and Lemnian are documented in a very fragmentary form. It has recently been suggested that Lemnian arrived on the island as a result of Mycenaean rulers recruiting mercenaries from Italy during the Late Bronze Age [Ligt, 2008–2009]. Its presence in the Northern Aegean would not imply a large extension of this language family across Pre-Indo-European Europe, but rather a fairly recent secondary relocation.³⁵

However, there have been other theories that relate this linguistic group to other languages, like the Anatolian family [Rodríguez Adrados, 1989; 2005; Beekes, 2002; Woudhuizen, 2006] (something I do not agree with, as it would turn Etruscan into an Indo-European language) or Minoan, a classical idea already considered plausible by Ventris,³⁶ as well as later by Brown [1985], Facchetti [2001; 2002] or Yatsemirsky [2011]. Wallace [2016, 221] notes that “how the geographical distribution of these languages is to be explained is another, more perplexing, question, and one that has been – and still is – the subject of considerable debate” [cf. Kloekhorst, 2022b].

Without going yet into an assessment of the underlying hypothesis, as particularly put forward by Facchetti (suggestive, but in my opinion far from proven), I am interested in the possible relationship between the consonantal repertoires of Etruscan on the one hand, Minoan on the other, and the Pre-Greek continental or insular language in the neighbourhood of Minoan and perhaps genetically close to Minoan. A “relationship,” in any case, that I do not necessarily conceive of as a genetic kinship between the languages [cf. Facchetti, 2001, 34],³⁷ but as areal phonological features³⁸ of Mediterranean Europe, such as the phonological opposition of consonants based on articulatory intensity (*fortis/lenis*) and not on the degree of sonority.

³³ G. Bonfante [1990, 12] argued that “it resembles no other language in Europe or elsewhere.”

³⁴ In addition to Rix [1998; 2008] himself, see [Agostiniani, 1986; Schumacher, 1998; 2004; Baldi, 2002; Beekes, 2003; Van der Meer, 2004; Comrie, 2008; Woodward, 2008; Simone, 1986; 1996; 2011; Marchesini, 2009; Oettinger, 2010; Simone & Marchesini, 2013; Wallace, 2016, 221].

³⁵ See now however Kloekhorst [2022b], who proposes that what he calls “Proto-Tyrsenic” was spoken in Northwestern Anatolia (the area around Troy) during the 2nd millennium BCE.

³⁶ According to Chadwick [1967, 34]: “The basic idea was to find a language which might be related to Minoan. Ventris’ candidate was Etruscan; not a bad guess, because the Etruscans, according to ancient tradition, came from the Aegean to Italy.”

³⁷ If the languages were genetically related, the Eteocretan texts [Duhoux, 2007b] *should* allow us to identify some feature akin to Etruscan or one of the other Tyrrhenian languages (Rhaetic or Lemnian). Of course, *if* they are really an evolution of the language we call ‘Minoan’.

³⁸ On the concept of linguistic area or *Sprachbund*, beyond the scope of this paper, see [Thomason, 2000; Campbell, 2002; 2006].

Table 4

Plosives of an ‘Etruscoid’ substrate

Voiceless	*p	*t	*k	*k ^w
Voiceless aspirated	*p ^h	*t ^h	*k ^h	*k ^{wh}

Etruscan appears to contrast plosive consonants by the presence or absence of aspiration. But again, this is the interpretation of Etruscan sounds by Greek and Roman ears. The language appears not to have voiced consonants. Or at least no consonants articulated as voiced were identified when the adaptation of the alphabet to Etruscan took place.

I wonder whether we could interpret the phonemic opposition of plosive consonants in Etruscan as a system in which the degree of voicing was irrelevant, and whether it was based again in a *fortis/lenis* opposition, occupying the aspirated consonants the space of the *lenis* in the system.³⁹

Linear A is not fully deciphered, and the language represented cannot therefore be accurately assessed in many respects. This is so even when Linear B and Linear A share a very high percentage of syllabograms: it is reasonable to assume that they have phonological values in Linear A close to those in Linear B. If so, we could consider whether the Minoan consonants could fit this image we are assuming for the Pre-Greek language responsible, due to the interaction with the Pre-Proto-Greek, for certain features of Proto-Greek consonantism. Facchetti [2001, 19–21] does this exercise in his attempt to look for Minoan-Etruscan connections, but without being impossible, the very nature of the writing system is an obstacle to reach the slightest degree of certainty: for the Mycenaean voiceless, voiced and aspirated stops (with the exception of the series used to represent the voiced dental plosives) the same syllabograms of Linear B are used. In Minoan we have to suppose that the values would be the same, although most probably the series transliterated in Linear B as *da, de, di, do, du* served in Linear A rather to represent a lateral consonant with an articulation unclear to Greek ears [Bernabé & Luján, 2006, 34] and which seems to be present in Anatolian languages as well [Boisson, 1994, 216–217; Bryce, 1986; Adiego, 2007, 248–249].

In any case, despite Facchetti’s optimism, we have no written confirmation to date of a differentiation of articulation modes or phonological contrasts of any kind in the Minoan plosive system. The fact that different phonemes within each of the three articulation points (labial, dental and velar) could not be graphically contrasted,

³⁹ Although this could be further argued, the articulation of a plain voiceless stop is accompanied usually by more articulatory intensity than that of an aspirated voiceless stop in languages where this type of consonants is phonologically contrasted. Considering that the aspirated feature of the phoneme contributes to its audibility, this is to be expected. If the defining feature is length (VOT), though, aspirates are usually longer than plain stops.

however, does not prove that there were not, in fact, phonological differences (we do not know what kind) within each series. Without going any further, Linear B shows us how a writing system can perfectly well mask real phonological differences, precisely in the repertoire of stops.⁴⁰ *Ergo*, we cannot detect whether Minoan behaved in this way in a similar way to Etruscan (as Facchetti argues) or what were the characteristics of the whole plosive system.

5. Conclusions

It is plausible to posit that, in the final configuration of Proto-Greek, the effect of the Pre-Greek substrate languages may have been felt. To attribute, however, any phonetic or phonological feature to the interaction with the substrate in Greece is more specific and more difficult to prove.

In any case, the hypothesis that in the final shaping of Greek the Pre-Greek substrate played an important role, I understand that it entails that the linguistic stage that may be called *Proto-Greek* could only be reached in Greece, whereas for the linguistic phase before the entry into Greece I would prefer to use the more precise term *Pre-Proto-Greek*.

It has been proposed that around 3500 BC (according to ideas going back to [Gimbutas, 1956; 1970; 1982]) the specific splintering of the Proto-Indo-European common tree that concerns us here took place. The fate of that branch would eventually lead to the development of the ancestor varieties of Greek along with those that would become Indo-Iranian and other languages (Armenian or Phrygian), with which they would share part of the journey from the starting point we see on Fig. 6 to their final destinations.

One of the groups (Pre-Proto-Greek) would enter Greece at the beginning of the 2nd millennium and, after interaction with the local Pre-Greek population, would culminate in Proto-Greek, the common ancestor of the historical Greek dialects. The aspects of Proto-Greek that give it a personality in relation to the rest of the family, and in particular those that differentiate it from the closest branches, are likely to be due to interaction with Pre-Greek, a language (or languages) that we know only indirectly in this particular way.

I think it is plausible to suppose that Greek shows a devoicing of the inherited voiced aspirates as a result of this interaction with Pre-Greek, as proposed by de Hoz [2004]. This may be due to an interpretation by Pre-Greek speakers of Pre-Proto-Greek aspirated voiced aspirates as voiceless either because they existed in the repertoire of their language (and voiced ones did not) or because the Pre-Greek plosives did not oppose each other by their degree of voicing, but by their articulatory intensity or by the presence or absence of aspiration (cf. Etruscan).

⁴⁰ This is also true of non-dual Palaeohispanic syllabaries [Ferrer i Jané & Moncunill, 2019].

Beekes' reconstruction of the Pre-Greek phonological repertoire from both Pre-Greek lexical and onomastic remains seems to fit the second assumption. Although it does not show a series of aspirated voiceless stops, it is implied that the consonants do not oppose each other by their degree of voicing and, as far as we can tell, the system does not show consonants defined by the aspiration feature either (Fig. 6).



Fig. 6. The presumptive Proto-Indo-European home area where the future Pre-Proto-Greeks, as well as the other Indo-European groups, started their respective migrations

As for the possibility of an Anatolian-type substrate, the emergence of an aspirated voiceless series would not be explained in relation to such a language, which did not have aspirated consonants, although differentiated the series of stops, it seems, according to different levels of intensity.

Whether or not there is a genetic relationship between Minoan, Pre-Greek and the Tyrrhenian family, Facchetti's [2001; 2002] recent proposals raise the possibility, in my opinion, that the Pre-Greek substrate had only voiceless stops (or rather stops not differentiated by their degree of voicing) which were opposed to each other by the presence or absence of aspiration. Such a substrate could justify a process whereby the inherited voiced aspirated sound series evolved, by local innovation, into an aspirated voiceless series. I find this phonetic influence of substrate plausible. Whether this

implies genetic kinship between Etruscan, Minoan and Pre-Greek is far from being proven, because phonetic coincidences of this kind can also be understood by framing all of them in a common Mediterranean Pre-Indo-European linguistic area (*Sprachbund*).

As for Schriver's [2019] suggested (in his case on grammar grounds) possible links between Minoan, Hattic and even Sumerian and Northwest Caucasian languages, the hypothesis seems to favour a possible common Pre-Indo-European (and Pre-Semitic) substratum between the heart of Anatolia and the Aegean region, which would certainly be consistent, at least as far as Hattic goes, with the proposals put forward in this paper.⁴¹

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⁴¹ The phonetic detail of Hattic stops is difficult to assess, given the limited corpus we have of this language, and our limitations to interpret the script, always in a Hittite context. However, the reasons for the development of a new *fortis/lenis* opposition method in the Hittite consonants [Melchert, 1994; 2012; Kloekhorst, 2016; 2020; 2021] point out precisely to the influence of a Pre-Hittite substrate, most likely Hattic itself. Also meaningful, perhaps, is the fact that both Northwest and Northeast Caucasian languages show quite special repertoires of phonemes [Hewitt, 2004, 49–54], with few vowels and a very high number of consonants (up to 70 in some cases), including often an opposition based on a difference of tenseness, i.e. a contrast in articulatory intensity (which naturally leads to a lengthening of the strong consonants, cf. [Kloekhorst, 2022a]), a contrast between *fortis* and *lenis* consonants. Some languages of this family (or two families) also include palatalization and labialization as contrastive features, which reminds me of the table of consonants for Pre-Greek suggested by Beekes [2014] that was commented above.

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ABBREVIATIONS

dial.	dialectal
IE	Indo-European
LB	Linear B
Luw.	Luwian
PA	Proto-Anatolian

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Саламанка, Испания

**ГОРА ПАРНАС И ЛАБИРИНТ:
ОТ КОРИНФА И ЗАКИНТА ДО КНОССА И ГАЛИКАРНАСА**

В статье предпринимается анализ греческих имен собственных на **-nthos-* и **-ssos/*-ttos*, которые рассматриваются в контексте языковых контактов между допротогреческими народами, прибывшими в Грецию, и уже существовавшим там догреческим населением. Уточняется ряд лингвистических понятий, в частности термины *допротогреческий*, *протогреческий*, *общегреческий* и *догреческий*. После обзора основных гипотез относительно времени проникновения носителей допротогреческого языка в Грецию автор обсуждает роль догреческого субстрата в формировании протогреческого языка, ставшего результатом языкового сдвига, и проводит предварительный анализ протогреческого языка (языков) на основе имеющихся (весьма ограниченных) данных, используя в качестве основного источника имена собственные. Эти данные позволяют предполагать, что фонологическая структура догреческих смычных согласных (в частности, тот факт, что унаследованные аспирированные звонкие отражаются в греческом как аспирированные глухие) может свидетельствовать о влиянии догреческого субстратного языка, чья лингвистическая атрибуция породила несколько противоречащих друг другу гипотез и множество сомнений. Несмотря на то, что анатолийская гипотеза имеет множество сторонников, гипотеза о неиндоевропейском характере догреческого кажется более предпочтительной. Рассмотрев доиндоевропейские гипотезы Бекеса, Факкетти, Схрейвера, автор делает вывод о возможных совпадениях догреческой и этрусской фонологических систем, а также возможных следствиях этого. Так, рассматривается недавнее наблюдение Схрейвера о том, будто язык минойцев может быть отдаленно связан с хаттским языком, что способно стать фундаментом для альтернативного объяснения топонимических совпадений между двумя регионами: они могли иметь общий доиндоевропейский субстрат.

К л ю ч е в ы е с л о в а: догреческая и греческая ономастика; праиндоевропейский язык; доиндоевропейский субстрат; допротогреческий язык; протогреческий язык; догреческая топонимия; анатолийские языки; этрусский язык; хаттский язык

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