ON INDO-EUROPEAN *E ~ O*

SOBRE *E ~ O* INDOEUROPEAS

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Abstract: The proposal of Schmitt-Brandt (1973) of tracing most of the /e/ and /o/ documented in Indo-European languages to an ancient short tonic */a/ and to an unstressed */a/ respectively is beset with numerous difficulties, while many indications, on the contrary, rather point to the fact that the historical /e/ had its main origin in an ancient short but unstressed */a/, and the historical /o/ likewise in an ancient brief but tonic */a/.

Keywords: Proto-Indo-European, phonology, /e/ vowel, /o/ vowel.

Resumen: La propuesta de Schmitt-Brandt (1973) de remontar la mayoría de las /e/ documentadas en las lenguas indoeuropeas a una antigua */a/ breve tónica choca con numerosas dificultades, mientras que muchos indicios apuntan más bien a que la histórica /e/ tuvo su principal origen en una antigua */a/ breve, sí, pero átona, y la histórica /o/ en una antigua */a/ breve, sí, pero tónica.

Palabras clave: Indoeuropeo, fonología, vocal /e/, vocal /o/.

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In his doctoral thesis 1967 (= 1973), anticipated in an article of 1966 (*non uidimus*), Robert Schmitt-Brandt had the courage to make one of the few attempts to propose to restore, at least partially, the venerable Boppian vowel pattern of three vowel sounds, */a i u/, as the original pattern of the Indo-European linguistic matrix, the operational pattern in the discipline of Indo-European Linguistics until the time of Karl Brugmann, that is to say, until the end of the 19th and begining of the 20th centuries. In the classic version of the model with three vowel sounds —as represented in Sanskrit, considered at that time the most venerable and archaic of the Indo-European languages then known— one of the pending problems was to explain the origin of the /e/ and /o/ that we find in practically all Indo-European historical groups from that original trivocalic pattern with /a(:) i(:) u(:)/. The proposal of Schmitt-Brandt consisted basically in deriving from a short tonic */a/ most of the historical /e/ and from a short unstressed */a/ most of the historical /o/ (1973: 114-130), thus holding that "in Indo–European vocalism *a is older than vocalism *e/o"[1] (1973: 113).

We say *basically*, because the German author, following in great detail the analogical situation of classical Arabic —with its original pattern /a(:) i(:) u(:)/, like so many other languages— also proposed both the maintenance of the old */a/ as well as changes from the original brief */a/ either to /e/ or to /o/ depending on the consonantal context: greater resistance of /a/ in generally guttural contexts, change to /e/ in coronal contexts and a tendency to /o/ in labial contexts (Schmitt-Brandt 1973: 92-113). On the other hand, changes such as the creation of /e/ and /o/ from the diphthongs /ai/ and /au/ respectively occurred *ante oculos* in the very same history of Sanskrit and many other Indo-European languages. Of course, from the typological point of view, this proposal is very well founded in practically all its extremes, since most of the changes envisaged by Robert Schmitt-Brandt occur in a banal way in many languages of the world, beginning with the frequent change of the vowel sound in the unstressed position to the phonematization of ancient merely allophonic oppositions. There were, however, a couple of points —but crucial points— where Schmitt-Brandt´s proposal not only did not have typological support in its favor, but also, as can now be reliably demonstrated, had typological

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[1] "der *a*–Vokalismus im Indogermanischen älter ist als *e/o*".

support precisely against it: the passage from */a/ to /e/ in the tonic position and the passage from */a/ to /o/ in the unstressed position, since the typological material supports precisely the opposite processes. Even without going into the particular examination of phonetic changes, there were also some previous general reasons or at least very good indications to defend the possibility of evolution just contrary to that defended by the German author on this point, to defend, therefore, */a/ → *[ɛ] → /e/ and */'a/ → *[ɔ] → /o/. Here are the main arguments, data or indications in favor of this specific counterproposal.
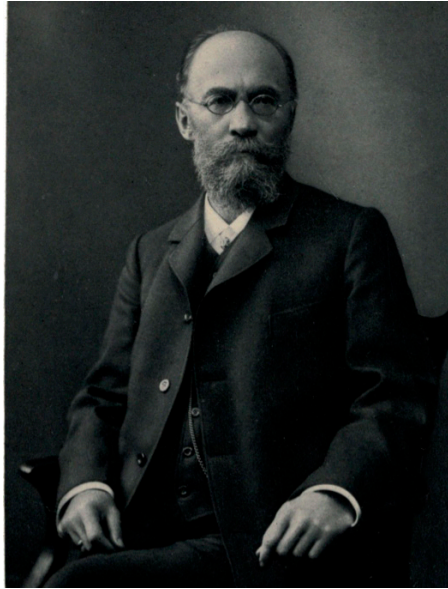
Karl Brugmann (1849–1919). *Source*: Public domain

‖ 1 ‖

Accepting the existence of an accent —a single accent per word— in the Indo-European matrix, as is the case in most documented languages, we must first point out an argument of a, say, statistical nature. Indeed, although naturally we cannot make any computation on a purely reconstructed linguistic continuity and, therefore, without any direct documentation, it seems reasonable

to suppose that, apart from monosyllables and an undoubtedly large group of disyllables, that language would also have trisyllables and other polysyllabic words —more expected in marked words (usually more peripheral, plural cases, certain verb modes ...)— and that, consequently, would, like most languages, have more unstressed syllables than stressed syllables. Now, which of the two vowels, /e/ or /o/, is more frequent in Indo-European languages? Although, as we said, here we cannot have empirical quantitative studies, it would suffice, among other reasons, to adduce the fact that the supporters of a model with original vowels /e/ and /o/ accept, without hesitation, as considerably more frequent the first of the two vowels, to the point that they reconstruct it as original in its roots —usually triliteral for these authors, as is known— type **CeC**: "The Indo-European root is monosyllabic, triliteral, composed of the basic vowel ĕ between two different consonants"[2] in the classical definition of the main champion of this theory, Ezra *sive* Émile Benveniste (1973: 170).

All this in line with the fact that in historical Indo-European languages that have both /e/ and /o/, it seems clear that the first vowel is more frequent. Therefore, it must be concluded that, since there are more /e/ than /o/ in Indo-European historical groups, the most logical and economic hypothesis is to suppose that the historical /e/ of Indo-European languages would go back to an unstressed /a/ rather than a tonic /ˈa/, as otherwise we would have expected a lower frequency of /e/ and a higher of /o/. In a relatively common trisyllabic sequence, as in Hittite *uetenaš (ue-te-na-aš)* 'water' (genitive) or Greek φέρομεν 'we bear', where, as in so many other sequences in Indo-European languages we find /e/ as the most frequent vowel, *a priori* and all things being equal it is obviously easier to explain /e/ as a result of several */a/ in unstressed syllables than as a result of a single */a/ in a stressed syllable.

‖ 2 ‖

The principle that the greater the polysyllabism, the greater the presence of atones to be expected, would also be applicable to one of the most conspicuous testimo-

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[2] "La racine indo-européenne est monosyllabique, trilitère, composée de la voyelle fondamentale ĕ entre deux consonnes différentes".

nies of the famous Indo-European apophony or *Ablaut*, in which we frequently find ourselves, for example, in the face of a situation in which nouns and verbs of the same root are characterized by the vocalism /e/ and /o/ respectively, thus in the famous pairs of the type Greek λόγος 'account – consideration – reason' but λέγω 'I pick up – I count – I recount' (*cfr*. Latin *lego* 'I pick up – I choose – I read') or Latin *toga* 'toga – outer garment' (*cfr*. Lithuanian *stogas* 'roof') but *tego* 'I cover' (*cfr*. Greek στέγω 'I keep off'). Here it should be remembered that according to some scholars, such as MAŃCZAK (1997), notoriously, the -*ō* in *tegō* would in fact represent an ancient sequence *-*omi*. Now, since in general the Indo-European verb must present a greater polysillabism than the noun —it is enough to think of the greatest number of words corresponding to the greatest number of morphological categories of the verb: aspect, mood, person, time, voice...—, the logical thing is to suppose that the /e/ in the syllable of the verbal stem here originally represented, at least in most cases, an unstressed vowel.

‖ 3 ‖

The morphological expedient of total or partial reduplication, is an outstanding phenomenon well recognizable in many languages of the world with different meanings, such as its use as a plural mark in some languages, Indonesian type *anjing-anjing* 'dogs' or *rumah-rumah* 'houses' (Himmelmann 2005: 121). Some Indo-European languages —Gothic, Greek, Indo-Iranian, Irish, Latin— only testify to a greater or lesser extent a common operative reduplication: the iteration of the initial syllable in its structure **CV** as a mark of the perfect in the verb, type λέλοιπα 'I have left' as opposed to λείπω 'I leave', Irish *canim* 'I sing' – *cechain* 'I sang' or Latin *tetigi* 'I touched' as opposed to *tango* 'I touch'. Although we do not know of specific typological studies on the accentuation or not of this type of reduplication in the languages of the world, the significant fact that the reduplication in no case reflects the common triliteral root **CVC** but is limited to the basic segment **CV** (*cfr*. Latin *mordeo* 'I bite' but *momordi* or *memordi* 'I bit – I have bitten' and not †*mermordi* nor †*mermodi*; *curro* 'I run' but *cucurri* 'I ran' and not †*curcurri* nor †*curcuri*) suggests that at least originally the *strong* syllable, so to speak, was the one that still contains the root structure in its entirety and this would therefore be the stressed

syllable, since, if it were not so, we would expect syllabic wear to have been produced on that same syllable. Consequently, we must start from the premise that before the various readjustments in the position of the accent took place in the evolutionary course of the various diferent languages (Latin *memˈordi* but *tˈetĭgi*), the accent did not fall on the reduplicated syllable.

Well, it should be noted that, outside of some assimilation (type Latin *momordi*) regularly /e/ is the majority vowel in reduplication in historical Indo-European languages: "reduplication is regularly in *e* […] and either reproduces an *i* or a *u* of the stem"[3] (Meillet 1984: 102); that is: if the stem contains *i* or *u*, the vowel of the reduplication is respectively /i/ and /u/, this is generally the case in (insular) Celtic (McCone 2005: 221), Indo-Iranian and Latin. Similarly, the fact that the reduplicated vowel seems never to be long, although the stem vowel may be, suggests that the reduplicated vowel was therefore originally unstressed and short (*cfr*. below Sanskrit *cakāra* 's/he did').

‖ 4 ‖

The above, *mutatis mutandis*, can also be applied to another prefixal mark of the verb tense in the historical Indo-European languages, such as the so–called *augment* or presence of a vowel in the past tenses, a phenomenon documented in three geographically close linguistic groups but —at least historically— not contiguous: Old Armenian (*eber* 's/he took'), Classical Greek (ἔφερε 's/he took') and Indo-Iranian (Sanskrit *ábharat* 's/he took'), where, in addition, the augment appears as potestative or facultative but not mandatory in the oldest texts, in which it is even scarce, as well in Avestan or in Homeric Greek (Meillet 1984: 97). Again the vocalism /e/ —and not /o/— is documented, thus, although historically it sometimes appears as a tonic element, due to its probable proclitic origin we assume that at some point it must have been unstressed.

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[3] "le redoublemente est régulièrement en *e* […] ou reproduit un *i* ou un *u* de la racine".

‖5‖

In the few tonic monosyllables that we can reasonably reconstruct on Indo–European common ground, such as **kuis* 'who?' – **kuid* 'what?', **mūs* 'mouse', **sūs* 'pig – boar', **tu* 'thou' or **uas* – **ius* 'you' /e/ does not appear but probably only **/a/, */i/ and */u/; 'who?': Avestan *čiš* 'who', Greek τίς 'who?' (Thessalian κίς), Old Indian *kíḥ* 'who?', Hittite *kuiš* 'who – who?', Old Irish *cid* 'what?', Latin *quis* 'who? – who – someone', Oscan *pis* 'who? – who – someone', East Tocharian *kus* 'who', Welsh *pwy* 'who?'…; 'mouse': Albanian *mī*, Armenian *mukn*, Old High German *mūs*, Greek μῦς, Latin *mus*, Persian *mūš*, Sanskrit *mū́ḥ*, Old Slavic *myšь*…; 'pig – boar': Albanian *thi*, Avestan *hū*, Old High German *sū* (female), Goyhic *swein*, Greek ῦς, Homeric Greek σῦς, Latin *sus*, Latvian *sivēns* 'piglet', Persian *xūk*, Sanskrit *sū[–karaḥ]*, Old Slavic *svinъ*, Tocharian в —also called *West Tocharian*— *suwo*, Umbrian *sim* (accusative), Welsh *hwch*…; 'thou': Albanian *ti*, Armenian *du*, Avestan *tū*, Gothic *þu*, Doric Greek τύ, Hittite *zik*, Old Indian tú, Latin *tu*, Lithuanian *tù*, Old Prussian *tou*, Old Church Slavonic *ty*, East Tocharian *tu*, Welsh *ti*…; 'you': Sanskrit *vaḥ*, Latin *uos*, Old Church Slavonic *vy*, East Tocharian *yas*… Albanian *ju*, Gothic *jūs*, Lithuanian *jū̃s*, Sanskrit *yuvám*…

‖6‖

Vice versa: in the very few Indo-European words that we can reasonably reconstruct as unstressed, the presence of /e/ is observed. The best testimony is the enclitic conjunction —that is, unstressed— for 'and': Avestan *-ča*, Bulgarian *-ce*, Celtiberian -cuᴇ, Greek *-τε*, Latin *-que*, Lepontic *-pe*, Lycian *-ke*, Sanskrit *-ca*, Venetic *kve*… where, as we can see, the presence of /e/ is clearly predominant, not the vowel /o/.

‖ 7 ‖

In turn, the palatalization of the velar consonant that we observe in the Indo–Iranian group ('and' Avestan -*ča*, Sanskrit -*ca*) for the enclitic just cited indirectly suggests that the short and unstressed /a/ knew a more palatal allophonic or anteriorized variant, a pronunciation close to [ɛ] or [e], to more easily explain the palatalization of the ancient /k/: *[kwa → ka → kɛ → tʃɛ].

‖ 8 ‖

On the other hand, it is known that one of the most canonical alternations between Indo-European /e/ and /o/ is found in the contrast between nominative and vocative in the so-called *thematic* stem with cases as clear as that of the Greek λύκος 'wolf' ~ λύκε 'wolf!' or Latin *lupus* 'wolf' ~ *lupe* 'wolf!'. To the question of whether it is more likely that there has been a change in accentual position in *λυκός – *lupús* or in *λυκέ – *lupé*, it can only be said that the nominative case seems like a much better candidate. The nominative was probably a genitive turned ergative in a previous agglutinating pattern and, therefore, provided with an ending. On the other hand, it would be enough to invoke here the verification of the absence of an ending as a mark of the vocative in the Latin type *Acci*, *Cæli*, *Titi* with respect to their respective nominatives *Accius*, *Cælius*, *Titius* (see Gellius 14,5,2) to maintain by analogy that the vocative type λύκε – *lupe* does not contain any ending. As a matter of fact, the zero mark for the vocative is rebuildable for the Indo-European pool and it is also in fact documented for cases such as the Lithuanian (*bróli* 'brother!') or in the Gothic *þiudan!* 'king!' or *sunu!* 'son!' in contrast to the nominatives *þiudans* and *sunus* or in the Sanscrit *aśva* ('horse!') in contrast to the nominative *aśvaḥ* 'horse' and *devi* ('goddess!') in contrast to the nominative *devī* 'goddess'.

The typology further supports this assumption. Indeed, the vocative is similarly unmarked in many languages, such as the South African Oshikwanyama, where you lose the *o-* of the nominal class prefixes *o-*, *omu-*, *oshi-* and *ou-* or the prefix *e-*: *ohamba* but *hamba!* 'chief!' or *eyoka* but *yoka!* 'snake!' (Zimmermann & Hasheela 1999: 9) or as in Akkadian (Malbran-Labat & Vita 2005:

48). In short, where the minimum nominal stem would be expected, the vocative often appears, parallel to what happens with the imperative in verbs, as "imperatives proper often have zero expression" (Greenberg 2005: 47), such that *mutatis mutandis* the above is applicable to the /e/ of the imperative in the Greek type ἄγε 'come on!' and latin *age* 'come on!'. It is, therefore, more likely that, for example, a type of phenomenon such as the retraction of the accent that we see still operative in classical Greek and Latin could be applied in sequences provided with an ending (genitive → ergative → nominative: *λυκόϛV – *lupúsV) than where no ending is expected (vocative).

‖ 9 ‖

The testimony of the Indo-European vowel prosthesis is not very decisive. First of all, it is a phenomenon that occurs in only two Indo-European languages: Armenian and Greek. In addition, many scholars do not accept the interpretation of the phenomenon as a vowel prosthesis, but rather see it as another case of the emergence of a laryngeal. Third, there are the three vowel sounds in dispute: /a e o/. Finally, the phenomena of epenthesis, prosthesis or the like do not always mean that the vowel that arose out of nowhere is unstressed (e.g. German *Franz* → Hungarian *Ferenc*, with the first stressed vowel: [fˈɛrɛnts]; Latin *libru–* → Basque *liburu* /libˈuru/…), although it is usually: Latin *rege-* 'king' → Basque *errege* with the first /e/ unstressed.

While in Armenian the vowel is normally *a*, in Classical Greek we find more variety, but, even as an indication, it must be said that /e/ has a majority presence: Greek ἐλαχύς 'small' (*cfr*. 'light – slight' Gothic *leihts* and German *leicht*, Latin *leuis*, Lithuanian *leñgvas* or *lengvùs*, Sanskrit *laghú-*, Old Slavic * льгъкъ* and Polish *lekki*…), Greek ἐλεύθερος 'free' (*cfr*. German *Leute*, Latin *līber*, Russian люди…), 'nine' is in Armenian *inn* and in Greek ἐννέα (*cfr*. Albanian *nëntë*, Breton and Cornish *nau*, Gothic *niun*, Old Indian *náva*, Latin *nouem*, *ñu* in both Tocharians, Welsh *naw*...), Greek ἐρεύγομαι 'I barf – I burp' (*cfr*. Latin *rūctō* 'I burp'), Greek ἐρυθρός 'red' (*cfr*. Gothic *rauþs*, Old English *réod*, Old Icelandic *rauðà*, Irish *ruadh*, Latin *ruber*, Lithuanian *raudónas*, Sanskrit *rudhiráḥ*, Serbian *rũd*, West Tocharian *ratre*, Umbrian *rofu* and **rufru**, Welsh *rhudd*…).

‖ 10 ‖

A process */a/ → /o/ and not *viceversa* is also suggested by the fact that the so-called *Old European* hydronymy (in German *alteuropäische Hydronymie*), considered almost unanimously as belonging to a stratum older than that of the historical Indo-European groups, shows up where some of these groups historically present /o/, as the same SCHMITT-BRANDT (1973: 112) already saw: "the Old European river names frequently present vocalism *a* where the corresponding Indo-European denominations would allow the vocalism *o*"[4]. In the words of VILLAR (1991: 166): "it is /a/ and not /o/ in *Old European* and in general in the older languages"[5].

‖ 11 ‖

On the other hand, within the wide range of Indo-European linguistic groups there are languages with the pattern of three vowel sounds /a i u/, as in Luwian and Sanskrit, a vocalic pattern that we may reconstruct for the large Indo-Iranian group as well and at least for Tocharian A —also called *East Tocharian*— where *a* corresponds very frequently in Tocharian B to *e* or to *o* (Winter 1993: 185-6). There are also languages with four vowel sounds /a i u e/, like Hitite, and languages with five /a i u e o/, such as Latin or Greek. Now we have no documented phonemic pattern in historical Indo-European languages of the type †/a i u o/, that is to say: where /o/ exists, but /e/ doesn't.

In fact, a great variety of phonotypological data point to a general precedence of /e/ over /o/, since the coronal phoneme /e/, like all coronal phonemes, enjoys virtually a greater articulatory field and thus, for example, "The number of height distinctions in front vowels is equal to or greater than the number in back vowels" (Crothers 1978: 137; see also Ladefoged 2001: 159-160). Patterns based on four basic sounds */ a i u o /, although existing, as in Adzera, Amahuaca and Jivaro (see Crothers 1987: 139), are extremely rare. Well, this circum-

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[4] "die 'alteuropäischen' Flußnamen häufig *a*–Vokalismus aufweisen, wo die entsprechenden indogermanischen Appellativa *o*–Vokalismus erwarten ließen".

[5] "es /a/ y no /o/ lo que hay en *antiguo-europeo* y en general en las lenguas más antiguas".

stance is again, *pace* Schmitt–Brandt, evidently more in harmony with a greater presence of /e/, as the oldest phoneme, in Indo–European languages with the 5 basic sounds. Likewise, what has been said suggests a chronological process: */ a i u → a i u e → a i u e o / for Indo-European vocalism, congruent in turn with the data of the modern typology. In this regard it should be remembered

a) that in a three vowel system the allophonic areas "are larger and more vague than in a more complex system" (Crothers 1978: 109),
b) that "All languages have /i a u/" (Crothers 1978: 115, 134 and 136), and
c) that "Languages with five or more vowels have /ɛ/. They generally also have /ɔ/" (Crothers 1978: 116 and 136, see also 134).
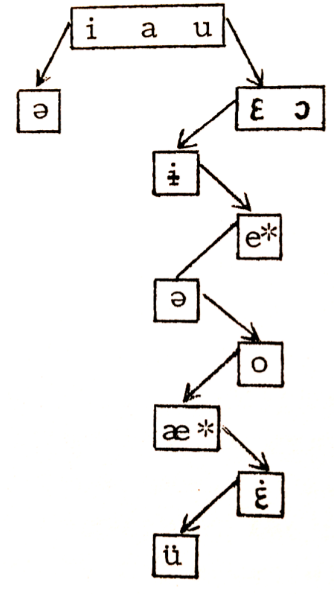
Vowel hierarchy predicted according to Crothers (1978: 114 fig. 10)

‖ 12 ‖

It seems, of course, clear that there was a phase */a i u e/ in the development of the historical Indo-European groups and indeed some authors consider that for the Indo-European linguistic matrix the "oldest model that we can reconstruct consists of four vowels (a/e/i/u)"[6] (Villar 1991: 168). Thus, "The Germanic languages have a/o confused like the majority of the Indo-European languages (Baltic, Slavic, Indian, Iranian, Illyrian, Thracian, Dacian, Anatolian languages, Old European, Pelasgian)"[7] (Villar 1991: 323). This detail also indicates that the pattern */a i u e/ would be earlier than the pattern */a i u e o/.

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[6] "más antiguo que podemos reconstruir consta de cuatro vocales (a/e/i/u)".
[7] "las lenguas germánicas tienen a/o confundidas como la mayoría de las indoeuropeas (báltico, eslavo, indio, iranio, ilirio, tracio, dacio, lenguas anatolias, antiguo europeo, pelásgico)".

Another argument in favor of this would be the indication of the larger area: "the languages that have a single vowel are somewhat more numerous […] So that the *larger area* would in any case be the one formed by the /a/ *languages*. And they are also the ones that constitute the *oldest phase*"[8] (Villar 1991: 166). The fact is that there are a few more Indo-European groups with indistinct /a/ and /o/ than groups with /a/ and /o/ distinct. Furthermore, "the comparative drawback of assuming that Indo-European had differentiated a/o is the lack of a reason why an innovation as unpredictable as the confusion of the two takes place in so many dialects and so far apart from each other"[9] (Villar 1991: 165).

In favor of the fact that the indistinction between /a/ and /o/ is older than the distinction between the two in Indo-European there is also the fact that "the same linguistic tradition is attested first as a/o language and then as /a/ language, does not occur on any known occasion"[10] (Villar 1991: 165), that is to say, we have always /a → a o/, but not †/a o → a/. The detail is again congruent with the aforementioned presence of /a/ and not of /o/ in the Old European hydronymy.

‖ 13 ‖

Furthermore, in Indo-European languages with the pattern /a i u e/, when [o] appears, this sound is normally considered, as already anticipated, a mere allophonic variant precisely of /a/. As a matter of fact, the evidence that /o/ can be analyzed phonematically as the equivalent of /aː/ in some Indo-European languages or groups directly suggests that /o/ could have arisen as a variant of a *strong* */a/, either from a long */a/ —as it seems to be certainly the case— or possibly also from a strong */ˈa/. For example, "The attested Germanic

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[8] "las lenguas que tienen una sola vocal son algo más numerosas […] De forma que el área *mayor* sería en todo caso la formada por las *lenguas /a/*. Y ellas son también las que constituyen la *fase más antigua*".

[9] "el inconveniente comparativo que tiene suponer que el indoeuropeo contaba con a/o diferenciadas, es la falta de un motivo para que una innovación tan poco predecible como es la confusión de ambas tenga lugar en tantos dialectos y tan alejados entre sí".

[10] "que una misma tradición lingüística esté atestiguada primero como lengua a/o y luego como lengua /a/, no se da en ninguna ocasión conocida".

languages have only short *a* and long *ō*" (Pulleyblank 1965: 90) and would be numerous examples that "certainly seem to indicate earlier **ā* giving later *ō* in primitive Germanic" (Pulleyblank 1965: 90). The testimony of the Lithuanian language is also clear, where /o/ always represents a long vowel ([oː]) and clearly enters into phonological, morphological and lexical distribution with /a/, *exempli gratia* nominative *nãmas* 'house', genitive *nãmo* or, even more clearly, nominative *galvà* 'head', genitive *galvõs* (*cfr.* Old Latin 'family' nominative *familia*, genitive *familias*), such that [oː] has functioned in Lithuanian as a historical long correlate of [a], so it can be understood as originally a variant of /aː/ (*cfr.* also matches like 'brother' Latvian *brālis*, Lithuanian *brólis*, Old Prussian *brote*/ *brāti* etc.; see Dini 2014: 103). In Lithuanian, only in recent times short /o/ has been integrated into foreign words, such as *òpera* 'opera'.

The phenomenon is also manifested synchronously in the fact that many inventories show some incompatibility between /a/ and /o/, thus either the complete series type /a o aː oː/ doesn't exist or /o(ː)/ appears [only] as a phonomorphological variant of /a/. In Middle Persian *sive* Pahlavi we have /a aː oː/ but not /o/ (Weber 1997: 611-612). It also seems clear the passage from an old /aː/ tonic to *o* in Tocharian B, for example, *ost* 'house' as opposed Tocharian A *waṣt* 'house' and Vedic *vā́stu* 'house' (Hackstein 2017: 1313). Much more difficult would be to find a situation like /a: o/ with /aː/ as a long correlate of /o/.

To summarize, as Kümmel (2012: 308) points out: "the fact that **o* grades seem to be rather typical for strong stems in general and appear only very rarely in weak stems does not agree well with the hypothesis that the **o*–grade was some kind of variant of the zero grade […] there is even some evidence for a greater phonetic strength of PIE **o* […] In some IE languages, its development seems to presuposse a vowel that was "stronger" than the other non-high vowels **e* and **a*".

‖ 14 ‖

Turning now to the field of linguistic typology, it should be noted that in a general way a weak, short or unstressed vowel is more frequently associated with a —apparently more comfortable and relaxed— front or raised pronunciation. In Digor Ossetic we find [**a → æ*] but [**a: → a*] (Testen 1997: 722-723). In

Swedish "Short /a/ has a front pronunciation, and long /a/ a back pronunciation with a weak rounding" (Andersson 2002: 272). Also in the languages of the Silte group the /a/ can be raised to [æ] (Gutt 1997: 510). In Balochi, especially in Eastern Hill Balochi /a/ "tends in unstressed syllables to [ɐ]" (Elfenbein 1997: 766). In Middle English we have stages like *nama → name* or *beran → beren* 'bear', since "Weak vowels, especially in final position, were levelled to *e*" (Campbell 2000: 508). We also regularly have unstressed *a → e* in many word endings in French: *rose* 'rose' in contrast to Italian or Spanish *rosa*. We find these stages also in Italian dialects, like this *spóse* 'wife' in the dialect of the island of Ischia (Cavazza 2001: 207). In Valencian also some old -*as* in unstressed Latin words passed, as in French, to /es/ (Latin *rosas → roses* 'roses'; Latin *donas* 'you donate – you bestow' → Valencian *dones* 'you give').

Being very frequent *e* as a result of an atonic, brief or weakened *a*, a phonotype of lenition $A \rightarrow E$ might be formulated.
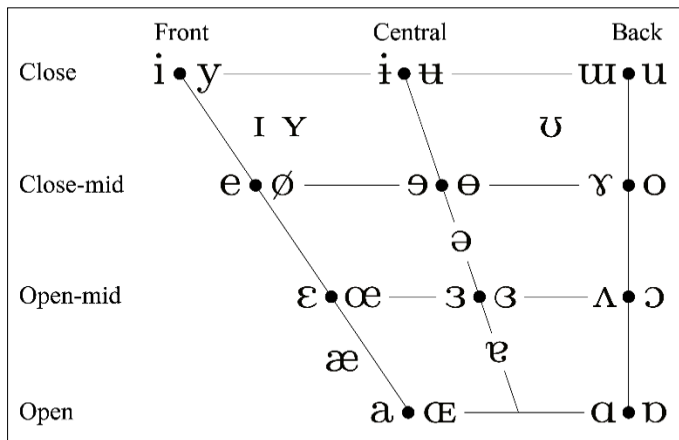
Vowels (The International Phonetic Alphabet)

‖ 15 ‖

Conversely, in a general way a strong, long or tonic vowel is more frequently associated with a more rounded pronunciation. Thus, the passage from *a* to *o* is already documented, for example, in Old Egyptian around 1200 BC, when we find the change from tonic /aː/ to /oː/, with subsequent *relapse* around 400

AD from /a/ tonic to /o/ in the two major dialects (Loprieno 1997: 443 and 452). We are speaking about the so-called *Canaanite vowel shift* from *ā* to *ō*, well known to semitists and considered by Faber (1997: 5) "a relatively natural change". In Phoenician this change reached not only the original *ā* but also the *ā* that developed secondarily under the accent: */á → aː → oː/ and thus we have **’adám → *’adām → ADOM* 'man' (Segert 1997: 61). In Old Hebrew we also find [aː → oː], thus *šalōm* 'peace' as opposed to the Arabic *salām* (Rendsburg 1997: 77). We also find the Canaanite shift in Classical East Syriac, where it "seems to reflect an areal phenomenon that has persisted from ancient Canaanite through modern Arabic dialects" (Daniels 1997: 134). In Modern Aramaic of Amadiya "*aː* is rounded and raised to [ɔː], almost [o]" (Hoberman 1997: 324). In Pashto /aː/ is pronounced [ɑ ɔː oː] depending on the dialect (Elfenbein 1997: 748, 751) and in Afridi Pashto we find the step from /aː/ tonic to [ɒː] or [oː] (Elfenbein 1997: 751), but also historically the Iranian *ā* has changed to *o* in Pashto, thus in Avestan *čaϑwārō → calor* 'four' (Skalmowski 1986: 185). Also in Tajik historically there was a step *ā > o* (Skalmowski 1986: 167). Similarly there is *ān > ō[n]* in Balochi (Elfenbein 1997: 764), in its Sarawani dialect, spoken in Iran, "some speakers tend to adopt [ɑː] for /aː/ in the Persian manner" (Elfenbein 1997: 763). In Lashari and Sarawani dialects of Balochi [aː] "is freely rounded to [ɑː] in a stressed position" (Elfenbein 1997: 766). In Ossetic many /o/ would come from [aː] before a nasal consonant, *e. g.* **nāman →* Iron Ossetic *nom* 'name' and Digor Ossetic *non* (Testen 1997: 722). In Slavic the alternation between unstressed /a/ and tonic /o/ (or [vo]) is well known, thus in Belarusian 'window' *aknó* (акно) but in plural *vókny* (вокны). Slavic material shows the prevalence of tonicism as a mark for /o/ versus /e/ well, thus in Russian we have *vestí* 'carry' but *vël* 'he carried' ([vjɔł]) and in Belarusian dialects we find variations like *sjascër ~ sëstraŭ* 'of the sisters'. The Latin vowel *a* tonic and in an open syllable (that is, [á(ː)·]) became [u|wɔ] in Dalmatian, thus the ancient *capra* 'goat' became *kuobra*. For Proto-Germanic, as we have seen, a complementary contrast between /a/ and /oː/ is conjectured (Lehmann 2002: 23). The change is so *natural* that it also occurs sporadically in other languages, for example, English *stān → stone* (Hopper 1990: 151). In Burushaski "[o] is found only in a stressed position" (Andersson 1997: 1029). Also with diphthongs the solution can be

the same, as we see, for example, in the Sahidic Coptic, where "the diphthongs */ˈaj/ and */ˈaw/ […] regularly yield /ˈoj/ and */ˈow/" (Loprieno 1997: 453).

Being very frequent *o* as a result of a long or strong, tonic *a*, a phonotype of fortition *ˈA → ˈO* could be formulated parallel to the one observed of *A → E*.

‖ 16 ‖

The varied casuistry of contrast / e ~ o / documented in Indo–European between the various historical groups, languages or dialects better match the formula */a → e/ and */ˈa(:) → o/, since we see it clearly works in correspondences that present all the characteristics that point to a common and very ancient phase. Both tendencies often appear as parallels naturally in some languages. Thus, in southern Semitic we find steps of the type */katˈaba/ 'wrote' → /kətˈɔb/ in Jibbali and in Suqutri and /kətˈɔ̄b/ in Mehri (Corriente 1996: 24). There are also sporadic parallels, such as the treatment in 'nineteen' of the old /o/ of Latin *nouem* 'nine', which is tonic in Catalan: *dinou* /dinˈɔu/, but unstressed in Valencian: *dèneu* /dˈɛnɛu/. Also in the Indo-European area we have theoretically explicable correspondences without too much difficulty within the parameters indicated and these both within the same language, as well as Latin *benē* 'well' ~ *bonus* 'good', in terms of dialectic level or within a linguistic group, such as East Tocharian *pracar* ~ West Tocharian *procer* (*cfr*. Armenian *eɫbayr*, Old Avestan *brātā* and Young Avestan *brāta*, Gothic *brōþar*, Greek φράτηρ, Sanskrit *bhrā́tā*, Irish *brāthir*, Latin *frāter*, Lithuanian *brólis*, Ossetic *[ä]rvad*, Old Persian *brātā*, Old Church Slavonic *bratrъ*,…) or the aforementioned case of 'brother' Latvian *brālis*, Lithuanian *brólis*, Old Prussian *brote*/ *brāti*, or correspondences between different groups, such as 'I bear' Sanskrit *bhárāmi* ~ Old Slavic *berǫ* 'I am taking', Gothic *bairo*, Greek φέρω, Latin *ferō*… or Greek φέρομεν ~ Sanskrit *bhárāmasi*; reduplicated perfect Sanskrit *jajā́na* ~ Greek γέγονε 'she begat' (← *gagána*, *ergo* with an accentual shift after the action of the phonematization rule of the old vowel allophony).

What is stated in points ‖ 3 ‖ and ‖ 7 ‖ is congruent with the situation that we find in words such as *cakāra* 's/he did', perfect reduplication of the verb *kr̥*- 'to do' in Sanskrit, where, as we see, "the consonant of the reduplication

is the corresponding palatal"[11] (Lazzeroni 1993: 139), since the vowel of the reduplicated syllable (*ca*–) is not only short with respect to the stem vowel (–*kā*–) but also enables the palatalization of /k/ (→ /tʃ/), which suggests a more raised ([ɛ] or similar) pronunciation.

The fact is that "we have evidence from three branches of IE for a somewhat stronger status of *o in contrast to *e and its tendency to be longer than any other short vowel" (Kümmel 2012: 310).

To sum up, in the words of Kümmel (2012: 291): "*o was the reflex of a pre-PIE long *ā in contrast to PIE *e/a resulting from pre-PIE short *a", just not in a *pre-Proto-Indo-European* but probably and simply in *Proto-Indo-European*. In sum, although certainly of dissimilar probative value, the arguments or indications presented here seem sufficient to us to reject the original proposal of Schmitt-Brandt of a general trend */ˈa → e/ and */a → o/ and instead propose a basic trend */a/ → [ɛ] and */ˈa/ → [ˈɔ], already operating in Proto-Indo-European.

References

Abbreviations

Le lingue… = A. Giacalone Ramat & P. Ramat curr. (1993). *Le lingue indoeuropee*. Bologna: Società Editrice Il Mulino.

Phonologies… = A.S. Kaye ed. & P.T. Daniels adv. (1997). *Phonologies of Asia and Africa*. Indiana: Eisenbrauns, II vol.

The Germanic… = E. König & J. Van der Auwera edd. (2002 [= 1994]). *The Germanic Languages*. London / New York: Routledge.

The Semitic… = R. Hetzron ed. (1997). *The Semitic Languages*. London / New York: Routledge.

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[11] "la consonante del raddoppiamento è la palatale corrispondente".

Studies

Andersson, Erik (2002). Swedish. *The Germanic…*, 271-312.

Benveniste, Émile (1973⁴ [= 1935]). *Origines de la formation des noms en indo-européen*. Paris: Librairie d'Amérique et d'Orient Adrien Maison-neuve.

Campbell, George L. (2000). *Compendium of the World's Languages*. London / New York: Routledge, II vol.

Cavazza, Franco (2001). *Lezioni di indoeuropeistica con particolare riguardo alle lingue classiche (sanscrito, greco, latino, gotico) I*. Pisa: Edizioni ETS.

Corriente, Federico (1996). *Introducción a la Gramática Comparada del Semítico Meridional*. Madrid: Consejo Superior de Investigaciones Científicas.

Crothers, John (1978). Typology and Universals of Vowel Systems. In J. H. Greenberg (Ed.), *Universals of Human Language. Volume 2 Phonology*. Stanford: Stanford University Press, 93-152.

Daniels, Peter T. (1997). Classical Syriac Phonology. *Phonologies...*, 127-140.

Dini, Pietro U. (2014). *Foundations of Baltic Languages*. M. B. Richardson & Robert E. transl. Richardson, Vilnius: Vilnius University.

Elfenbein, Josef (1997). Pashto Phonology. *Phonologies...*, 733-760.

Elfenbein, Josef (1997). Balochi Phonology. *Phonologies...*, 761-776.

Faber, Alice (1997). Genetic Subgrouping of the Semitic Languages. *The Semitic...*, 3-15.

Greenberg, Joseph Harold (2005). *Language Universals with Special Reference to Feature Hierarchies*. Berlin / New York: Mouton de Gruyter.

Gutt, Ernst-August (1997). The Silte Group (East Gurage). *The Semitic...*, 509-534.

Hackstein, Olav (2017). The phonology of Tocharian. In J. Klein, B. Joseph & M. Fritz, *Handbook of Comparative and Historical Indo-European Linguistics*, Berlin/Boston: De Gruyter Mouton (II), 1304-1335.

Himmelmann, Nikolaus P. (2005). The Austronesian languages of Asia and Madagascar: typological characteristics. In A. Adelaar & N. P. Himmel-

mann (Eds.), *The Austronesian Languages of Asia and Madagascar*. London / New York: Routledge, 110-181.

Hopper, Paul J. (1990). Where do words come from. In W. Croft, K. Denning & S. Kemmer (eds.), *Studies in Typology and Diachrony*. Amsterdam/ Philadelphia: John Benjamins Publishing Company, 151-160.

Kümmel, Martin Joachim (2012). Typology and reconstruction. The consonants and vowels of Proto-Indo-European. In B. N. Whitehead, T. Olander & J. E. Rasmussen (Eds.), *The Sound of Indo-European. Phonetics, Phonemics and Morphonemics*, Copenhagen: Museum Tusculanum Press, 291-329.

Ladefoged, Peter (2001). *Vowels and Consonants. An Introduction to the Sounds of Languages*. Oxford: Blackwell Publishers.

Lazzeroni, Romano (1993). Sanscrito. *Le lingue*..., pp. 123-149.

Lehmann, Winfred P. (2002). Gothic and the Reconstruction of Proto-Germanic. *The Germanic*..., pp. 19-37.

Loprieno, Antonio (1997). Egyptian and Coptic Phonology. *Phonologies*..., 431-460.

Malbran-Labat, Florence & Vita, Juan Pablo (2005). *Manual de lengua acadia. Volumen I: Gramática*. Zaragoza: Instituto de Estudios Islámicos y del Oriente Próximo.

Mańczak, Witold (1997). La désinence primaire de la I[re] pers. sing. des verbes thématiques: *-ō* ou *-omi*. *Lingua Posnaniensis*, *39*, 51-56.

McCone, Kim (1995). *L'irlandese antico e la sua preistoria*. trans. E. Roma, Alessandria: Edizioni dell'Orso.

Meillet, Antoine (1984). *Les dialectes indo-européens*. Paris: Librairie Honoré Champion.

Pulleyblank, Edwin G, (1965). The Indo-European Vowel System and the Qualitative Ablaut. *Word* (21.1), 86-101.

Rendsburg, Gary A. (1997). Ancient Hebrew Phonology. *Phonologies*..., 65-83.

Schmitt-Brandt, Robert (1966). Probleme des indogermanischen vokalismus. *Kratylos*, *11*, 166-174.

Schmitt-Brandt, Robert (1973[2]). *Die Entwicklung des Indogermanischen Vokalsystems (Versuch einer inneren Rekonstruktion)*. Heidelberg: Julius Groos Verlag.

Segert, Stanislav (1997). Phoenician and Punic Phonology. *Phonologies*..., 55-64.

Skalmowski, Wojciech (1986). Języki irańskie i dardyjskie. Języki nowoirańskie. In L. Bednarczuk (Ed.), *Języki indoeuropejskie*. Warsaw: Państwowe Wydawnictwo Naukowe (I), 161-244.

Testen, David (1997). Ossetic Phonology. *Phonologies*..., 707-731.

Villar, Francisco (1991). *Los indoeuropeos y los orígenes de Europa. Lenguaje e historia*. Madrid: Gredos.

Weber, Dieter (1997). Pahlavi Phonology. *Phonologies*..., 601-636.

Winter, Werner (1993). Tocario, *Le lingue*..., 181-196.

Zimmermann, Wolfgang y Hasheela, Paavo (1998). *Oshikwanyama Grammar*. Windhoek: Gamsberg Macmillan Publishers.