

## Vowel length in Vulgar Latin: transphonologization of quantitative into qualitative distinctions.

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1. Since it surpasses the limits –both of content and, basically, of chronology– imposed by the title of this paper, we shall postpone until a later occasion a discussion of the obscure and ever controversial problem of the historical Latin accent.

We shall therefore not discuss the numerous hypotheses concerning its inscrutable nature (whether it was tonal or one of intensity) which are to be found in the copious bibliography on the subject; nor shall we even attempt to analyse the apparent plausibility of the prehistoric initial stress accent proposed by Dietrich to explain phonetically the considerable changes which the Latin vowels in non-initial syllable underwent.

2. We thus take as our starting-point a presumably musical accent –without discarding, needless to say, a certain degree of hypothesis and conjecture– the phonological (or phonemic) aspect of which was to prove fundamental in the Vulgar Latin evolution with which we are concerned here.

It must be borne in mind that in Classical Latin this tonal accent was regulated by both vowel length and syllabic structure, which makes it more than likely that the accent itself had no distinguishing function (and it certainly had none in the period in question).

This non-phonological nature of the Classical accent –irrelevant with regard to semantic distinctions– was to undergo modification in Late Latin (undoubtedly, as suggested by Mariner (24, 271), from the second century A.D. on, if not earlier) as an immediate consequence of the dephonemisation of length oppositions. The accent, which could no longer be regulated by an element of quantity which would never again be a distinctive feature of the vowel system, was now automatically freed from its previous dependence and able on its own to give rise to differences in meaning.

But the change in the Vulgar Latin accent was to go beyond the bounds of the

purely phonological and affect another conflictive aspect: its very nature. For by the first century A.D. the arguments in favour of an intensive, and not tonal, accent become decisive: arguments as solid as the regular intensive stress system of the various Romance languages and, above all, the avalanche of stress-based metrical schemes (a point to which we shall return later), together with the ever more numerous faults in the quantitative schemes; all this before referring to the by no means insignificant linguistic testimony of the post fourth century grammarians.

A phonetic detonator as potent as the dephonemicisation of vowel length was needed to modify the nature and phonological value of a stress-system which almost 20 centuries later is still preserved by the Romance languages with no signs of any change to come.

3. It is therefore worth giving a detailed account of the circumstances –phonetic, phonological and also chronological– in which the distinguishing nature of Latin vowel length began to lose its force. To do so, a clear picture of the Latin vowel system is called for: how many vowels did it have?; what were the distinguishing features which made for internal oppositions?; what, in short, was the phonological situation of the system?

It is now several years since Avalle (3, 50-51), in his brief essay on the Late Latin vowel system, clearly set out the three classes of distinguishing features which served to define the five known Latin vowels:

- the point of articulation, enabling us to distinguish between front vowels (e, i), back vowels (o, u) and one neutral vowel (a).
- quantity, producing opposing pairs depending upon whether the vowels were long or short ( $\bar{i}/\acute{i}$ ,  $\bar{e}/\acute{e}$ ,  $\bar{a}/\acute{a}$ ,  $\bar{o}/\acute{o}$ ,  $\bar{u}/\acute{u}$ ), and
- quality, that is, differing degrees of aperture, doubling the vocalic series once again, this time in gradual opposition ( $\bar{i}/\acute{i}$ ,  $\bar{e}/\acute{e}$ , a,  $\bar{o}/\acute{o}$ ,  $\bar{u}/\acute{u}$ ).

We thus obtain the following combined result: ( $\bar{i}/\acute{i}$ ,  $\bar{e}/\acute{e}$ ,  $\bar{a}$ ,  $\bar{o}/\acute{o}$ ,  $\bar{u}/\acute{u}$ ).

4. The strict distinction of vowel length inherited from Indo-European, with its phonological value, is undoubtedly an important and unchallengeable characteristic of the simple Latin system, constituting one of the distinguishing features –in this case prosodic and non-intrinsic, like the degree of aperture or the point of articulation– through which the various vocalic phonemes are opposed. We know, in fact, of numerous contrasting pairs based simply on vowel length, these distinctions being both lexical, as in *mālum/mālum*, *pōpulus/pōpulus*, *lēuis/lēuis*, *pīlum/pīlum*, *sōlum/sōlum*, *fūror* (vb.) / *fūror* (n.), *mēto* (<*mētāre*>)/*mēto* (<*mētēre*>), *uīncit* (<*uīncīre*>)/*uīncit* (<*uīncēre*>), and also morphological, as in *Romā* (abl.)/*Roma* (nom.), *uēnit* (pres.)/*uēnit* (perf.), *fructūs* (nom.)/*fructūs* (gen.).

A distinguishing feature, in short, which speakers must have perceived as natural, as is attested by Cicero: “*omnium longitudinum et breuitatum in sonis... iudicium ipsa natura in auribus nostris collocauit*” (*Or.* 5, 173).

What is more, it still seems a sufficiently vigorous feature to Quintilian,

who considers length oppositions a natural phenomenon necessary in any language: “neque enim loqui possumus, nisi syllabis breuibus ac longis” (*Inst. Orat.* IX, 4, 61).

However, we must not forget that alongside quantity, and independently of it, there existed from the earliest stages of the language other distinctions, namely of quality. We go along with Iso Echevoyen’s assertion (19, 101 ff.) that quality too –and why should not it be?– was an important phonological feature; and as regards our approach to the present problem this is more important than it might appear to be at first sight.

We are accustomed to being presented with, and even conceiving and accepting, the phenomenon of the loss of vocalic length oppositions in Vulgar Latin as a fairly direct consequence of the steadily increasing importance of distinctions in quality. Subtle distinctions of length were gradually lost on the ear, to be followed by what Lausberg (20, 209) termed the “collapse” of the quantitative system. But does this really give us grounds for stating that it was only then that the distinctive feature of aperture became important and not, as some would claim, redundant? What sort of authority –whether based on theory or the documentary evidence– could induce us to consider a loss of quantitative distinctions as being explained simply by the qualitative feature of aperture in the short series of Latin vowels?

5. Neither, of course, should we underestimate the possibility of a certain articulatory interplay between these two phonological features over a great part of Romania. There are signs based on theory and the written sources which point to an open realization for the short vowels and a closed for the long. And alongside admittedly isolated examples in archaic inscriptions such as TEMPESTATEBUS X TEMPESTATIBUS, MAGESTER X MAGISTER, OXSOR X UXOR, FILICITER X FELICITER, PUNERE X PONERE, UXURE X UXORE and ERODITA X ERUDITA, there is a generalized linguistic conviction –as we are reminded by Tekavčić (32, 12)– that it is not only in Latin that we can observe this relationship between shortness / greater aperture and length / lesser aperture (the vowel *a*, whether long or short, being unable to participate in these realizations, representing as it does the maximum degree of aperture).

In any case, it is not only the opinion of Tekavčić that prompts us to accept the possibility of this interplay of features, but also the precedent offered to us by the ancient grammarians. To be exact, the first testimony of the differences in quality between the long and short variants of the vowels dates back to Terentianus Maurus (end of the second to the beginning of the third century A.D.) and refers to the pronunciation of *o*. In *De Litteris* (GL VI, 329, 13-134) he makes the following recommendation for the pronunciation of *ō*: “...sonitum reddere cum uoles minori, retrorsus adactam modice teneto linguam, rictu neque magno sat erit patere labra” that is, with the tongue slightly retracted and the lips half open.

And for *ō*: “at longior alto tragicum sub oris antro molita rotundis acuit sonum labellis”, that is, with the lips rounded to obtain a more solemn sound. And a couple of centuries later the grammarian Pompeius, again quoting Terentianus Maurus, writes: “E aliter longa aliter brevis sonat...dicit ita Terentianus ‘quotienscumque E longam uolumus proferri, uicina sit ad I litteram’...quando dicis *euītat*, uicina debet esse (sic pressa, sic angusta ut uicina sit) ad I litteram. Quando uis dicere breuem E, simpliciter sonat” (*GL V*, 102, 4).

Consentius, a contemporary of Pompeius, was likewise to take an interest in these phenomena of aperture and transformation. In order to distinguish between the two different qualities of *ī* and *ĩ*, this grammarian of Gaulish origin observes that the latter was pronounced with a sound midway between *e* and *i*: “mihi (...) uidetur, quando producta est (*ī*), uel acutior uel plenior esse, quando breuis est (*ĩ*), medium sonum (sc. inter *e* et *i*) exhibere...” (ed. Niedermann, Neuchâtel 1937, 16, 2-4).

6. However, in spite of the evident interplay between the two distinguishing features, the reasons for the system's being able to survive the loss of quantitative distinctions must be sought in the feature of quantity itself, in its very nature, and in its effectiveness as a phonological characteristic.

Let us first recall the perceptive observation made by Tekavčić (32, 11) when he speaks of Latin vowel length as a distinguishing feature of a prosodic nature, which in principle immediately distinguishes it from the other two –degree of aperture and point of articulation– which are inherent by nature. This prosodic element might have made quantity increasingly irrelevant, to the point where it was no longer indispensable for the users of the system. And it was just at that stage, when it was no longer necessary, that the system would have been likely to abandon it.

In addition, speakers would obviate this neutralization by various means: the use of prepositions, or the replacement of one or both terms, but above all by placing greater emphasis on the quality of the vowels: and hence, perhaps, the cause-effect relationship usually established between the greater relevance of quality and the loss of length distinctions.

The reasons for this significant process were undoubtedly varied and inter-related, but among the most important Mariner (22, 50) suggests the spreading of Latin to non-native speakers (representing up to 90% of the Imperial population in the time of Hadrian). However, the scientific precision of causes such as immigration or substrate can reasonably be placed in doubt.

And among the possible causes we cannot but mention the disconcerting problem of the monophthongization of *ae* into an apparently long and open *e*: a clearly “intrusive” phoneme which did not fit into the system of closed long and open short vowels and which might have introduced the first symptoms of imbalance. In spite of the fact that Hispanists, Romanists and Latinists have concerned themselves for some time with the reflex of this old Latin diphthong, a definitive quality or length can still not be proposed, although all the

signs point to the long quantity and open quality posited above.

Several decades ago Marouzeau pointed out that from very early on *ae* had served as a graphic marker for an open *e*, and Bonfante (8, 157-158), who declared himself in agreement with this early claim, saw it as an explanation for spellings like *SCAENA* and *SCAEPTRUM*. The same author observed that the long open *e* of three languages –Greek, Celtic and Germanic– had been transcribed by *ae* in Latin: and not haphazardly, but in popular words, well testified and no later than the first century A.D. The Latins can be assumed to have done so because their  $\bar{e}$ , being closed, did not represent the foreign sound adequately.

However, the most recent studies by Coleman (11 and 12) and Spence (31) stir up once again the old polemic surrounding the length, and not the quality, of the monophthong. Coleman presents documentary evidence for the epigraphic substitution of / $\bar{e}$ / and / $\bar{e}$ / for /*ae*/: a twofold substitution which he explains (12, 89) without difficulty by centering on the long, open monophthong we have mentioned.

But although confusion with / $\bar{e}$ / might be more to be expected, given that quantity was the principle distinguishing feature in the system that held, this confusion is negligible (it occurs only rarely at Pompeii) and becomes even less frequent with the passing of time, as is shown by Coleman (12, 89) for the centuries covered by the CIL.

This orthographic factor, in short, far from confusing the situation, allows us to draw some important conclusions, namely: that from the beginning quality was probably a distinguishing feature constantly working against and alongside quantity (and why should we not consider the mixed system proposed by Spence (31, 83)?) –as is proved by the early replacement, at times by / $\bar{e}$ / and at other times by / $\bar{e}$ /– until it became the dominating characteristic in the Latin of the Imperial period; only then, when / $\bar{e}$ / and / $\bar{i}$ / had exchanged their respective qualities in a system which now lacked all length distinction, did the orthographic confusion tilt the balance definitively in favour of / $\bar{e}$ /.

In view of all this, the monophthong under discussion does not seem to be responsible, in spite of all the phonological uncertainty surrounding it, for introducing quality into the system (Coleman (11, 182) shows that the confusion between *e* and *i* occurred in Oscan without any change into *ae*, while in Sardinian, although *ae* was reduced, *e* and *i* were not confused). Nor need we consider –like Spence (31, 83)– a scarcely plausible resulting short monophthong (how, then, for example, could the early cases of confusion with  $\bar{e}$  be explained?), arising simply in order to eliminate a transitory imbalance which the very evolution of the system would eventually accept.

In fact, the replacement of quantity varies according to dialect and period and, as we shall see at the end of this paper, Romania presents a picture that is far from being homogenous.

7. Whatever the causes that triggered it off –it would appear that at the phonetic level clear explanations are not always possible, a detailing of the facts and of

the scope of their repercussions being the most that can often be offered – what cannot be doubted is that the change took place and proved decisive for the formation of the Romance languages. But what are the chronological limits? Where does the process begin, and where does it reach its culminating point?

It is generally accepted nowadays that the phenomenon dates from as early as the Latin, and not from the Romance period, as was argued until only a few decades ago. In the opinion of Tekavčić (32, 13), the mere fact that none of the Romance languages preserve length distinctions justifies our considering a loss of distinction in the Late Latin period. Even within the purest Latin period, however, there is still controversy and chronological disagreement concerning just how early the beginning of the change can be dated.

Those who argue in favour of a late loss of quantity are for the most part Romanists, who place it around the sixth century, coinciding with the dismembering of the Roman Empire. Their strongest argument, which we shall expand upon later, is based on loan-words. Those who incline towards the earlier period – mainly Latinists – contemplate a loss of quantity about the second century A.D., basing their arguments principally upon a stress-based metrical system demonstrated for the third century, but also, as we shall see immediately below, upon the testimony of the grammarians and on epigraphical evidence.

8. It would not be too rash to believe –following Väänänen (35, 18)– that by the time speakers had become fully aware of this crucial transformation, it must not only have been well advanced but practically concluded. However, it is worth analysing one by one, and with examples, the various lines of argument which justified adherence to one chronological theory or the other. Modified or conservative spellings, metrical situations representing a certain compromise between stress and quantity, the at times fairly explicit testimony of ancient grammarians, and Latin loan-words of dubious probative value all serve as support for one theory or the other. We shall therefore consider each of the arguments in some detail, from an essentially critical stance, free as far as possible of theoretical preconceptions.
9. Spelling is of little relevance for the dating of these transformations, since there was no graphic distinction between long and short vowels. In spite of this, in view of the phonemic nature of Classical Latin quantity various devices were used in an attempt to represent the long vowel: repetition of the symbol of the corresponding short vowel, the *I longa*, the diacritic sign of the “apex”... Devices which, as Mariner (23, 122) points out, when they did not actually disappear within a century of their introduction, passed from general to specialized use (a typical characteristic of orthographic resorts representing obsolescent linguistic phenomena), finally becoming extremely infrequent, at least from the fourth century on. Those who argue in favour of a late date latch on to this superficial survival of the *I longa* or the apex as a still relevant symptom of the continuity of quantitative distinctions, without stop-

ping to consider that their use is not only infrequent but also suspiciously inappropriate.

In addition, the Pompeian materials, as Väänänen himself shows (36, §§42-51), contain phonetic peculiarities which demonstrate the obsolescent condition of quantitative rhythm. The presence in Pompeii of SUPSTĒNET (with apex) in place of SUSTINET, FILIX X FELIX, FLUX X FLOS, and MULIEREBUS X MULIERIBUS offers evidence of confusion at an early date (certainly before 79 A.D.) between *e* and *i* in favour of the more open *e*. And, again at Pompeii, we should not fail to mention cases of confusion like ADVAENTU, where we would expect ADVENTU, MARCELLAE X MARCELLE, VICINAE X VICINE, GRAPICAE X GRAP(H)ICE, NUMAERIO X NUMERIO, SAECUNDAE X SECUNDAE, VENAERIA X VENERIA and AED(E)O X EDO: from the long but open pronunciation of *e* which had arisen from the diphthong *ae* –the problem we have just discussed– it was the feature of aperture rather than length which imposed itself upon the linguistic consciousness of speakers.

However, there are cases of different spellings not only at Pompeii but over the whole of the Empire. Colin (13, 901) presents us with British examples from the third century –with an at least apparently archaizing linguistic system– like MINTLA X MENTULA or SIMPER X SEMPER and even others in an atonic vowel like MENERVAE X MINERVAE or HELARITAS X HILARITAS, or in the final vowel, like CIVES X CIVIS, where signs of the abovementioned evolution can be detected; and at the same time Herman (15, 1055) with his early Gaulish testimony, to which he alludes without citing, completes the picture of the development in Romania.

In spite of this profusion –relative profusion, at least– of orthographic changes (to be followed by phonetic, or rather phonological changes) in the series of palatal vowels (SCRIBET X SCRIBIT, FELICETER X FELICITER, INEMITABILI X INIMITABILI, COMIDI X COMEDI, SEDECE X SEDECIM, MINSIS X MENSES etc.) we are forced to recognize just how uncertain, scanty and dubious –to echo Bonfante (6, 417)– is the epigraphic testimony supporting the development of (originally short) open *u* to *o* (ANEMOLA X ANIMULA, COIOGI X CONIUGI, FILIU X FILIO, SO X SUM etc.); perhaps as a result of Oscan influence, perhaps because there was no monophthongization of *au* parallel to that of *ae*, or perhaps for simple physiological reasons (the articulatory organs concede more space to the front than to the back vowels). However, we are faced with certain doubts in this matter, because while Colin (13, 901) notes hardly any British cases (just the odd example and in internal post-tonic syllable: TUMOLO), Herman (15, 1055), who concentrated on the Gaulish material and is perhaps a pioneer in this process of transphonologization, although he admits a certain delay in the appearance of this confusion between *o* and *u*, tends to justify the relative lack of testimony on grounds of proportionality: the vowels in the back series were less frequent than their palatal counterparts. However, Herman offers us no hard facts and figures to inspire confidence in his attractive criteria of proportionality. And the fact is that from a

small statistical examination carried out on the Vulgar wall-inscriptions in the second edition of Pisani (*Testi latini arcaici e volgari*, Torino 1956), in an attempt to compare orthographic changes in the front and back vowel series, we have obtained data which in no way favour Herman's hypothesis. A total of 118 examples came under statistical examination, of which 54 correspond to the series of front vowels and 64 (!) to the back series (velars, therefore, do not appear to be any less frequent); and, in addition, of the 118 examples there are 9 cases of orthographic alterations, 6 in the palatal series (that is, 11.1%) and only 3 (4.6%) in the back series. All of which prompts us to maintain our belief in the traditional hypothesis concerning the chronological difference between the two series.

10. For those who held that the phenomenon was a late one, practically in the Romance period, metrics represented a decisive argument. Quantitative verse was still being written between the third and sixth centuries, and even up until the Middle Ages; and Mukarovsky points out that the basic procedures of versification in a language are founded not only on phonetic or acoustic factors, but necessarily on phonemic or phonological considerations too. Despite its apparent plausibility, the argument is in no way valid; verse could still be written (as it has continued to be written down to the present day) on the basis of ancient prosody, in a system no longer instinctively felt but learnt through a study of quantity in the Classical poets. But it must be acknowledged, following Mariner (21, 135 ff.), that this Classical-style prosody, as soon as its quantitative basis ceased to be part of the living language, would be followed by another, founded not on a recollection of the past but on a specific linguistic phenomenon: the stress accent; and it was even possible, as Nicolau believed, for quantitative and stress-based compositions to exist side by side. Both theoretical situations –the dogged persistence of quantitative metrics and the clear signs of the new accentual prosody –can be illustrated by means of significant examples. The Christian poet Commodianus, who can now be placed with almost complete certainty in the third century, wrote in hexameters, but with a great many errors from the point of view of Classical quantitative prosody. Since the author's quantitatively irregular metrics cannot be attributed to reasons of vulgarism or lack of education –as has been done with epigraphic verse– attempts have been made to explain the irregularities on the basis of the poet's African origins. But the mistakes are just too numerous, and include some perfectly palpable cases, like considering a vowel followed by two consonants to be short:

PĚDĚRĚNT / tĕrrĕm,

or one vowel followed by another to be long:

mĭsĕrĕt / Dĕŭs.

Commodianus wrote, in effect, "*quasi uersus*" –to use the words of his biographer Gennadios– although not because of a lack of education or his African origins but because, lacking a linguistic awareness of differences in quantity, his possibilities could not enable him to determine whether a syllable



was long or short. He was not then trying to write a quantitative hexameter, the rhythm of which could no longer be felt, but rather tending towards the coincidence of the word-accent and the heavy beats.

The suspicion of a foreign background which fell upon Commodianus cannot be applied to the case of St. Augustine, professor of rhetoric at Milan, in whose verse numerous quantitative anomalies can be detected which present serious problems to those who argue for a late dating for the phenomenon which concerns us in this paper. In his "Psalmus Abecedarius", which is deliberately adapted to the language of the people, there appears the verse  $\check{A}B\check{U}N/d\acute{a}nt\check{i}\check{a} / p\check{e}cc\grave{a}/t\acute{o}r\check{u}m / S\acute{O}L\check{E}T / fr\acute{a}tr\check{e}s / c\check{o}nt\check{u}r/b\acute{a}r\check{e}$  which has all the appearances of a trochaic octonarius, but with an anomaly in the first and fifth feet, due to the presence of an iambus in each, and with special care taken with the word-accent.

Alongside the literary testimony we have an early epigraphical corpus plagued with metrical errors. Classic examples are lines like the following:

$\check{u}n\check{u}s / H\acute{O}M\acute{O} / m\check{i}ll\check{e} / m\check{i}ll\check{e} / m\check{i}ll\check{e} / d\acute{e}c\check{o}l/l\acute{a}v\check{i}m\check{u}s$   
 $t\acute{a}nt\check{u}m / v\check{i}n\check{i} / H\acute{A}B\check{E}T / n\acute{e}m\acute{o} / qu\acute{a}nt\check{u}m / f\check{u}d\check{i}t / s\acute{a}ngu\check{i}n\check{i}s$

with quantitative errors in the second and third feet respectively. Such verses, sung by Aurelian's soldiers in the third century A.D., are nevertheless correct if we consider the stress rhythm.

In short, these are points which suggest an early phonological change, from the first centuries of the Imperial Era.

11. A third argument is taken from the testimony of the ancient grammarians, who have little to say on this matter –it is understandable that they should have had difficulty in observing changes which were taking place only gradually– but whose remarks are sufficiently enlightening.

Apart from the references made by Consentius (5th c.) in his *Ars* (V, 392-3) to the fact that the Africans could not perceive differences in length: ("temporis, ut quidam dicunt 'piper' producta priore syllaba, cum sit brevis, quod uitium Afrorum familiare est") and the earlier statement of St. Augustine's in his treatise *De Musica* II, 1: ("reprehendet grammaticus, custos ille uidelicet historiae, nihil aliud asserens cur hanc corripere oporteat, nisi quod hi qui ante nos fuerunt, et quorum libri exstant tractanturque a grammaticis, ea correpta, non producta usi fuerint") or his observation in *De Doctrina Christiana* 4, 10, 24: ("ubi Afrae aures de correptione uocalium uel productione non iudicant") which reveal how by the end of the fourth century it was impossible to fall back on the immediate testimony of the living language in order to teach quantity; apart from all this, as we were saying, in the second century the grammarian Sacerdos, in addition to recording that the loss of distinctions in vocalic length was a "barbarism of our time" (*GL* VI, 494), affords us, while dealing with metrics, some indirect arguments concerning this loss of quantitative distinctions: in the old Greek and Latin terminology *arsis* denotes the light beat and *thesis* the heavy beat (the terminology being taken from dancing: *arsis* = the raising of the foot, *thesis* = putting it down on the ground).

By the third century A.D. the meaning of the two terms had been reversed, since verse was now read with a stress rhythm, *raising* the voice on the heavy beats (*arsis*).

12. Perhaps the weightiest argument in favour of a late dating for the phenomenon –and with this we conclude our discussion of the topic– is the subsequent development of Latin loan-words, basically in Germanic. We are concerned here with loans adopted around the fourth and fifth centuries A.D. which still demonstrate the differing products of long and short vowels. This might appear to put difficulties in the way of the earlier dating towards which we have been inclining; it must be borne in mind, however, that when we say that length lost its phonological value we are not stating that quantity as such, in its purely phonetic aspect, has disappeared (or at least not for all speakers); this apart from the fact that if the adoptive language was still characterized by phonetic and phonological differences in length –as is the case with Germanic or Celtic– then it imposed on the loan-words its own distinction between long and short vowels.
13. At this stage of the discussion it only remains to examine in concrete detail what this decisive alteration in the vocalic system consisted in. And let us remember that although there was a pan-Romance abandoning of length opposition, the move from quantity varies depending on dialect and period; it is consequently impossible to talk about a single, uniform and homogenous process of dephonemicisation.

In conclusion we indicate the principal groups that can be established for Romania, taking into account, of course, the different evolution of tonic syllables –where the results are more complex– and atonic syllables.

#### A. TONIC SYLLABLES

*Classical system	ī	ĩ	ē	ĕ	ă	ō	ō	ŭ	ū
a) VULGAR SYSTEM	i	e	e	a	o	o		u	

In essence the change consists in the coming together of *ĩ* and *ē* on the one hand, the quality of *e* becoming predominant, and, on the other, the merger of *ō* and *ŭ*, under the predomination of the quality of *o*, this giving rise to a seven-vowel system.

Geographically, this system covers: central Italy, the northern part of the south of Italy (Campania, Abruzzi, northern and central Apulia as far as Brundisium, and the north of Lucania), northern Italy, Dalmatia, Istria, Rhaeto-Romania, Roman Gaul and Roman Iberia.

*Classical system	ī	ĩ	ē	ě	ǎ	ō	ō	ŭ	ū
b) ARCHAIC SYSTEM	i		e		a	o		u	

This involves, quite simply, the disappearance of length oppositions. Geographically, the system covers: Sardinia, Lucania, Africa, an isolated zone of the Italian peninsula (the northern strip of Calabria and southern Lucania) and a mountainous belt stretching from the Polycastrian Gulf to the Ionian Sea.

*Classical system	ī	ĩ	ē	ě	ǎ	ō	ō	ŭ	ū
c) COMPROMISE SYSTEM	i	e		e	a	o		u	

This involves the adoption of the Italic or Vulgar system for the palatal vowels, the Classical lengths being conserved in the velars for a longer period, although in the end this velar series also undergoes a fusion which leaves it without qualitative distinctions.

Geographically, this system occupies a small zone in the mountains of eastern Lucania, and it is represented on the other side of the Adriatic in the Romance of the Balkans, particularly in Dacia.

These results demonstrate that the transformation of the vocalic system did not take place simultaneously, but began with the front vowels, only later to reach the back; it should be recalled that Dacia remained isolated by the Barbarian invasions of the third and fourth centuries, as a result of which it followed its own particular evolution in the velar series:

*Classical system	ī	ĩ	ē	ě	ǎ	ō	ō	ŭ	ū
d) SICILIAN SYSTEM	ĩ	ĩ	ě	a	ō	u		u	
	i		ě	a	ō	u			

The system develops in two stages and geographically occupies Sicily, Calabria and the south of Apulia, all zones with considerable Greek adstrate or substrate.

### B. ATONIC SYLLABLES

The lesser complexity of changes here consists in reducing differences between the vowels to a minimum –the reduction is even greater in final vowels, tending towards a system with only three vowels–, the Vulgar system ending up with five instead of seven vowels, having simplified the difference of aperture between tonic *e* and *o*; the archaic system maintains its five vowels; the compromise system brings all the velars together into *u*, and the Sicilian does the same, in addition to bringing the palatals together into *i*, with a consequent reduction to a three-vowel system.

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