Acta Linguistica Academica 73 (2026) 1, 4–18
DOI: 10.1556/2062.2025.00992

1828
AKADÉMIAI KIADÓ

The history of the Latin sound system of Etruria (Tuscany) from Augustus to Charlemagne

BÉLA ADAMIK[1,2*]

[1] Ca' Foscari University of Venice, Italy

[2] ELTE Research Centre for Linguistics, Hungary

Received: January 20, 2025 • Revised manuscript received: July 11, 2025 • Accepted: July 16, 2025
Published online: November 25, 2025

ABSTRACT

This paper presents the history of vowel mergers from the 1st century B.C. to the 8th century A.D. over five periods, analysing LLDB data of a purely phonological nature from various perspectives, such as the proportion of mergers compared to all vowel errors, the proportion of mergers involving front vowels compared to the proportion of mergers involving back vowels, and the proportion of mergers in stressed and unstressed syllables. The results of this study confirm that the Latin linguistic features of the 8th century parchment charters of the *Chartae Latinae Antiquiores* (ChLA) organically continue and complete the earlier processes in Latin mainly observed in inscriptions, leading to the development of the local Italo-Romance language in the 9th–10th centuries.

KEYWORDS

Latin, Italo-Romance, Tuscany, vowel mergers, parchment charters

The aim of my paper is to show how the inclusion of a group of sources hitherto neglected in research modifies and expands our knowledge of the late history of the subsystems of Latin, in this case the sound system. The source in question is a group of private law texts written on parchment, mostly from the 7th and 8th centuries, which survived in their original form (i.e. not in copy) and which were made available to researchers in the second half of the 20th century in the volumes of the *Chartae Latinae Antiquiores* (ChLA, see Bruckner and Marichal 1954–1998). This group of sources is currently being analysed from a linguistic-historical-dialectological point of view in the framework of an ERC project in an international cooperation related to

* Corresponding author. E-mail: bela.adamik@unive.it, adamik.bela@nytud.elte.hu

the development of the Computerized Historical Linguistic Database of the Latin Inscriptions of the Imperial Age (i.e. LLDB, https://lldb.elte.hu/).

The charter material that survived in Etruria (Tuscany) is particularly rich in data and contains an extraordinary wealth of variations from Classical Latin, especially Vulgar Latin phenomena.[1] Moreover, the amount of data added to the LLDB from this material so far (after volumes 23 and 38 of ChLA have been fully processed, and volumes 34 and 39 have been partially processed)[2] already allows for linguistic-historical-dialectological research. In my following presentation, I will demonstrate the outstanding linguistic historical value of this group of parchment sources for the so-called transitional phase of Latin (the 7th–8th century, immediately preceding the emergence of the Romance languages) by reviewing the history of two important changes of the Etrurian Latin sound system: primarily the *e–i* and *o–u* mergers, and contrastively the *b–w* mergers[3] (so far known only from the inscription material created until the end of the 6th century).

My paper will present the history of vowel mergers from the 1st century B.C. to the 8th century A.D. over five periods spanning two hundred years each, with the exception of the last, covering the 8th century A.D. alone, analysing database data of purely phonological nature from various perspectives.[4] The history of *b–w* mergers will be presented similarly, for contrastive purposes.[5]

Before we get to that, however, we should take a look at the starting point, that is, what the relevant literature has said about the phonetic history of the Latin of Etruria so far. The list of relevant pieces of research is quite short, as no separate study has yet been published on this

[1]For the concepts of Classical Latin and Vulgar Latin, cf. Herman (2000b, 1–8).

[2]According to the status of the Computerized Historical Linguistic Database of Latin Inscriptions of the Imperial Age (see http://lldb.elte.hu/, referred to as the Database or LLDB hereafter) on 31/03/2024.

[3]Illustrative examples from 8th century Etruria: LLDB-147838: e > I, *protigente* = *protegente*, ChLA 34, 985, 2, Luca (mod. Lucca), LLDB-152989: e: > I, *rignante* = *regnante*, ChLA 23, 735, 1 = CDL 1, 97, 1, Clusium, LLDB-150551: i > E, *rogavet* = *rogavit*, ChLA 38, 1105, 28, Luca, LLDB-149985: i: > E, *adfenitus* = *adfinitos*, ChLA 23, 732, 23 = CDL 1, 66, 23, LLDB-153012: é > I , *sorticilla* = *sorticellam*, ChLA 23, 735, 3 = CDL 1, 97, 3, Clusium, LLDB-150136: é: > I, *concide|re* = *concedere*, ChLA 38, 1104, 12, Luca, LLDB-147880: í > E, *dulcessimi* = *dulcissimi*, ChLA 34, 985, 10, Luca, LLDB-155457: í: > E, *iscrevere* = *scribere*, ChLA 38, 1120, 20, by Capannoli, LLDB-149701: o > V, *devulute* = *devolutae*, ChLA 38, 1100, 6, Luca, LLDB-148495: o: > V, *conpunamus* = *componamus*, ChLA 23, 730, 18 = CDL 1, 55, 18, Tuscana, LLDB-150254: u > O, *lectolo* = *lectulo*, ChLA 38, 1105, 6, Luca, LLDB-150480: u: > O, *argomenti* = *argumenti*, ChLA 38, 1105, 21, Luca, LLDB-153181: ó > V, *urto* = *hortum*, ChLA 23, 735, 6 = CDL 1, 97, 6, Clusium, LLDB-150609: ó: > V, *custudes* = *custodes*, ChLA 38, 1104, 17, Luca, LLDB-150093: ú > O, *col|tum* = *cultum*, ChLA 38, 1104, 7–8, Luca, LLDB-148218: ú: > O, *concta* = *cunctae*, ChLA 23, 730, 6 = CDL 1, 55, 6, Tuscana; LLDB-161308: (voc.)-v-(voc.) > B, *adopta|berunt* = *adoptaverunt*, ChLA 24, 751, 4–5, Clusium, LLDB-161223: (voc.)-b-(voc.) > V, *aveat* = *habeat*, ChLA 39, 1127, 23, Luca, LLDB-152360: v- > B, *binea* = *vineam*, ChLA 23, 734, 10 = CDL 1, 92, 10, Clusium, LLDB-155505: b- > V, *vonis* = *bonis*, ChLA 23, 740, 21 = CDL 2, 184, 21, Marta (Viterbo), LLDB-149196: -lv- > LB, *salbatoris* = *salvatoris*, ChLA 23, 732, 1 = CDL 1, 66, 1, Clusium, LLDB-155034: -rv- > RB, *parbulo* = *parvulo*, ChLA 23, 739, 10 = CDL 1, 174, 10, Clusium. For resolving abbreviations of inscriptional corpora used in this survey see: http://lldb.elte.hu/admin/abbrev_bibl.php.

[4]Such as the proportion of mergers compared to all vowel errors, the proportion of mergers involving front vowels compared to the proportion of mergers involving back vowels, and the proportion of mergers in stressed and unstressed syllables.

[5]First according to their proportion compared to all consonant errors, and then according to their subtypes, i.e. in the intervocalic, word-initial and *postconsonantal* positions.

topic. Of course, Etruria has been discussed in the history of Latin, also in terms of phonology, either as a separate territory or as part of a larger geographical unit, such as central Italy. I have also studied certain aspects of the history of the Latin sound system in Italy, namely the history of word-final *-s* and the history of vowel-mergers in Northern, Central and Southern Italy.[6] In that study, however, Etruria was discussed as only one of the provinces of central Italy, as a member of a larger region, and the focus of the analysis was on the development of Southern Italy and Sardinia. As a result, at least to my knowledge, the only study that treats Etruria as a separate territorial unit in the context of a historical study of the Latin sound system was published by József Herman, who investigated the phonetic system of five territories of Italy in the Christian, so late Latin period.[7] Before presenting the results of this previous study, I should note that the shortage of studies focusing on Etruria is primarily due to the shortage of inscriptional data pertaining to the area. This situation improved significantly only now, thanks to the involvement of the parchment charter material that is very rich in data (as illustrated in Diagram 1), showing the temporal distribution of Etrurian data.

In his study, Herman examined the sound system of the Christian inscriptions of five selected regions of Italy, and he found that the five provinces of late Italy he studied did not behave in a uniform way from a dialectological point of view, but could be divided into two contrasting groups.[8] In group A (Liguria and Transpadana in Northern Italy), there was a clear innovative vocalism and an explicit conservative consonant system, while, conversely, in group B (Sardinia and Etruria in Central Italy as well as Bruttium in Southern Italy), there was an explicit conservative or less innovative vocalism and a largely or significantly innovative consonant system (Diagram 2).

Herman's aim here was not to carry out sub-studies, but to demonstrate the viability of his own methodology for dialectological research, based on the distribution of error types reflecting various linguistic changes, by exploring the territorially divergent developmental trends of the major phonological subsystems. In any case, Herman's diagram of the distribution of selected

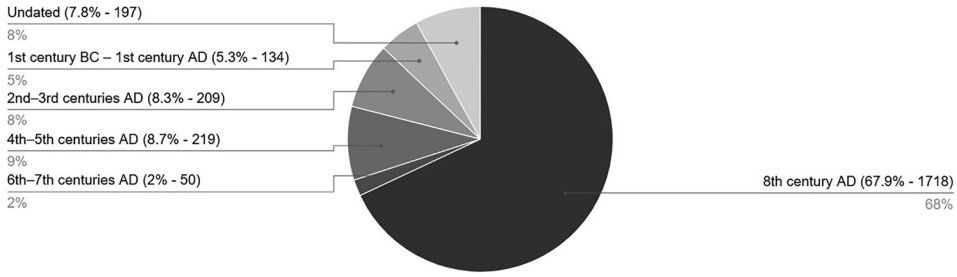

Diagram 1. Temporal distribution of Etrurian phonologial data (100% = 2,527)

[6] Adamik (forthcoming).

[7] Herman (2000a).

[8] Herman (2000a, 128–134), cf. also Adamik (2012, 134–138).

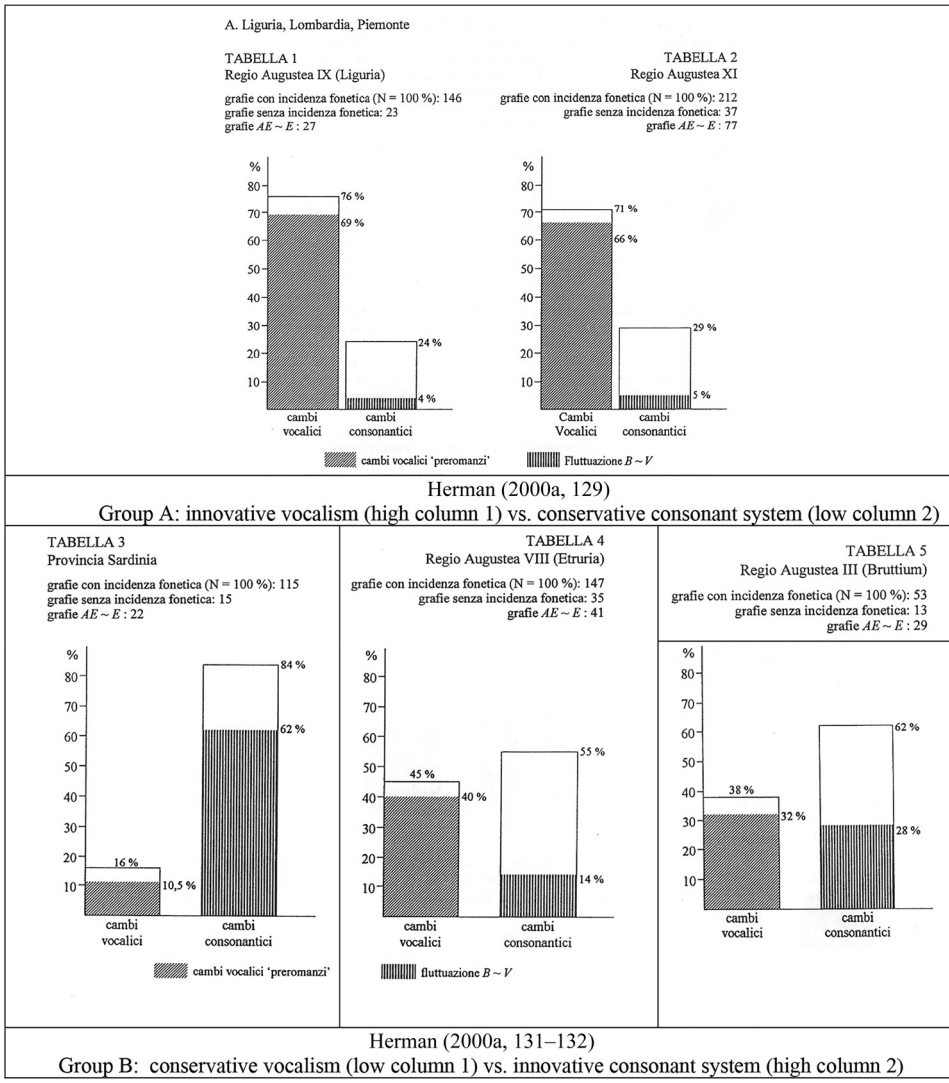

Diagram 2. The sound system of the Christian inscriptions of five selected regions of Italy according to Herman (2000a)

phonetic features of the inscriptional material of Christian Etruria was able to serve as a basis for my investigation. At the same time, a small correction can immediately be made to Herman's classification of Etruria. While according to his assessment, Etruria was listed as a member of Group B as a region with a conservative vowel system and an innovative consonant system, this is not justified if we measure its figures not only against the profile of the other provinces studied, but also against the expected ratio of distribution. If we do this, we will see that the figures (i.e. 45% cambi vocalici, 55% cambi consonantici) correspond to the average distribution

of vowels and consonants in Latin, considering that about 43% of Latin sounds are vowels and about 57% of them are consonants.[9] In his study, Herman himself also mentioned this expected ratio, not only in general (2000a, 128 fn. 10), but also in connection with Etruria (2000a, 131); however, he did not take it into account in the dialectological classification of the area, as Papini (2022, 354) also pointed out. In any case, if we also take this expected ratio into account, then based on Herman's figures for Etruria (i.e. 45% vs. 55%), we can say that Christian Etruria cannot be classified as an area with a conservative vowel system and an innovative consonant system at all, but rather as an area with a balanced system, meaning an essentially equal intensity of development of the vowel system and the consonant system in the 4th–7th centuries.

Now let us turn to the charts based on purely phonological data entered into the LLDB database by excluding both data that have morpho-syntactic or other non-phonological interpretations, and purely orthographic errors as non-linguistic data.[10] The basic data are indicated in Table 1,[11] but the analyses are carried out using the subsequent charts based on the data in Table 1.

If we look at Chart 1, which shows the proportion of vowel and consonant changes in Etruria in the five selected periods, we can see that, except for the earliest period in 1st century B.C. through 1st century A.D., when the consonant system was still undergoing a transformation less intense than expected (probably due to the initial state of the *b*–*w* merger, see Chart 2), the sound history of Etruria was always characterised by a certain balance in terms of vocalic and consonantal changes.

The observed proportions are close to the expected ones (43% vs. 57%) in every period for which we have sufficient data: in the 2nd through 3rd centuries (41.6% vs. 58.4%), in the 4th through 5th centuries (43.6% vs. 56.6%), and even in the 8th century (44.8% vs. 55.2%). The only outlying percentage pair (36% vs. 64%) is from the 6th through 7th centuries, but it is based on a very small data pool (of just 50 items) and cannot be taken into account in the evaluation; in line with this, the relevant 6th through 7th century Etrurian data are italicized in Table 1 and the accompanying charts. From just this basic analysis, it is already evident that the 8th-century parchment charter material reflects the trends of change and development of the two basic phonological subsystems of the Latin language essentially the same way as the earlier epigraphic material. This tells us that in this sense, the area was quite uniform from the 2nd century until the 8th century.

[9]See Herman (1968=1990, 196). Herman's calculations are essentially confirmed by my own calculations, according to which in a Latin text of roughly 50,000 letters (Cicero, Ad Atticum, Liber I) the proportion of vowels is 43.7%, that of consonants is 55.2%, and that of diphthongs is 1.1%.

[10]Throughout the current investigation I will consider only those LLDB data forms with phonetic main codes chosen from the list labelled as 'Vocalismus' or 'Consonantismus' in the Database that do not have an alternative code chosen from the lists labelled as 'Nominalia' or 'Verbalia' or 'Syntactica et lexica' in the Database. The easiest way to isolate or exclude orthographic codes (cf. Adamik 2022, 324) in the LLDB is to choose the "Code 1 O" or "Code 1a O" chart mode that separates purely orthographic code types as 'Orthographica' (https://lldb.elte.hu/admin/search_2.php). In this survey for denoting the various types of misspellings, I use the code-system of the Database (https://lldb.elte.hu/admin/abbrev_codes.php). As for the format of the codes, the sign ">" is to be interpreted as "represented in the text as", e.g. "é: > I" means "a Classical Latin stressed long *e* is represented in the text by the letter I".

[11]I excluded from the analysis of vowel mergers every data form with an alternative code chosen from the list labelled as 'Consonantismus', because having that alternative code means that those deviations can also be interpreted by a consonant change, such as LLDB-92284: o: > V / -m > ø, QVI | VIXI ANN VNV M III = *qui vixit anno uno mensibus III / annum unum menses III*, CIL 11, 3238, 3 = ILCV 3294, 3, Etruria / Regio VII, Nepet, 400–405 A.D.

Table 1. Phonological changes in Etruria in LLDB (status on 31.03.2024)[12]

1	2 [Chart 1]	3 [Chart 2]	4 [Chart 3]	5 [Chart 4]	6 [Chart 5]	7 [Chart 6]
(1) 1st century B.C. – 1st century A.D. (100 BC–100 AD) [inscriptions]						
100% = 134	V 56% = 75	100% = 75, E/I 14.7% = 11, O/U 2.7% = 2	E/I + O/U = 13 = 17.4%	E/I:O/U = 5.5	E/I/O/U:É/Í/Ó/Ú = 10 : 3 = 3.3	E/I: É/Í = 8 : 3 = 2.7 O/U: Ó/Ú = 2 : 0 = -
	C 44% = 59	100% = 59, B/V 3.4% = 2, -B-/-V- 0% = 0, B-/V- 1.7% = 1, CB/CV 1.7% = 1				
(2) 2nd–3rd centuries A.D. (101–300 AD) [inscriptions]						
100% = 209	V 41.6% = 87	100% = 87, E/I 10.3% = 9, O/U 4.6% = 4	E/I + O/U = 13 = 14.9%	E/I:O/U = 2.3	E/I/O/U:É/Í/Ó/Ú = 11 : 2 = 5.5	E/I:É/Í = 7 : 2 = 3.5 O/U:Ó/Ú = 4 : 0 = -
	C 58.4% = 122	100% = 122, B/V 15.6% = 19, -B-/-V- 10.7% = 13, B-/V- 3.3% = 4, CB/CV 1.6% = 2				
(3) 4th–5th centuries A.D. (301–500 AD) [inscriptions]						
100% = 219	V 43.4% = 95	100% = 95, E/I 25.3% = 24, O/U 8.4% = 8	E/I + O/U = 32 = 33.7%	E/I:O/U = 3	E/I/O/U:É/Í/Ó/Ú = 24 : 8 = 3	E/I: É/Í = 20 : 4 = 5 O/U: Ó/Ú = 4 : 4 = 1
	C 56.6% = 124	100% = 124, B/V 20.2% = 25, -B-/-V- 12.1% = 15, B-/V- 4.8% = 6, CB/CV 3.2% = 4				
(4) 6th–7th centuries A.D. (501–700 AD) [inscriptions]						
100% = 50	*V 36% = 18*	*100% = 18, E/I 16.7% = 3, O/U 27.8% = 5*	*E/I + O/U = 8 = 44.5%*	*E/I:O/U = 0.6*	*E/I/O/U:É/Í/Ó/Ú = 3 : 5 = 0.6*	*E/I: É/Í = 2 : 1 = 2 O/U: Ó/Ú = 1 : 4 = 0.25*
	C 64% = 32	*100% = 32, B/V 31.2% = 10, -B-/-V- 15.6% = 5, B-/V- 15.6% = 5, CB/CV 0% = 0*				
(5) 8th century A.D. (701–800 AD) [parchment charters]						
100% = 1,717	V 44.8% = 770	100% = 770, E/I 48.3% = 372, O/U 34.4% = 265	E/I + O/U = 637 = 82.7%	E/I:O/U = 1.4	E/I/O/U:É/Í/Ó/Ú = 370 : 267 = 1.4	E/I: É/Í = 205 : 167 = 1.2 O/U: Ó/Ú = 165 : 100 = 1.7
	C 55.2% = 947	100% = 947, B/V 29.4% = 278, -B-/-V- 22.4% = 212, B-/V- 5.2% = 49, CB/CV 1.8% = 17				

[12]Table 1 contains all the relevant data for Etruria, weighted. What this means here is that figures in regular (upright) font style represent that there is sufficient data, from which reliable linguistic inferences may be drawn; at the same time, figures in italics represent relatively small numbers that should be treated with caution. The data are displayed in the following manner. Column 1 displays the total number of all phonological data forms. Column 2 has the ratio of vocalic versus consonantal changes (abbreviated as V and C). Column 3 shows the exact numbers and proportions for E/I and O/U confusions in vocalic changes, and the exact numbers and proportions of B/V confusions in consonantal changes. Column 4 shows the totalized percentage of E/I and O/U faults compared to all vocalic errors, while Column 5 shows the E/I to O/U ratio. Column 6 then shows the incidence of these confusions in stressed and unstressed syllables, and Column 7 shows the same but separated by front and back vowels.

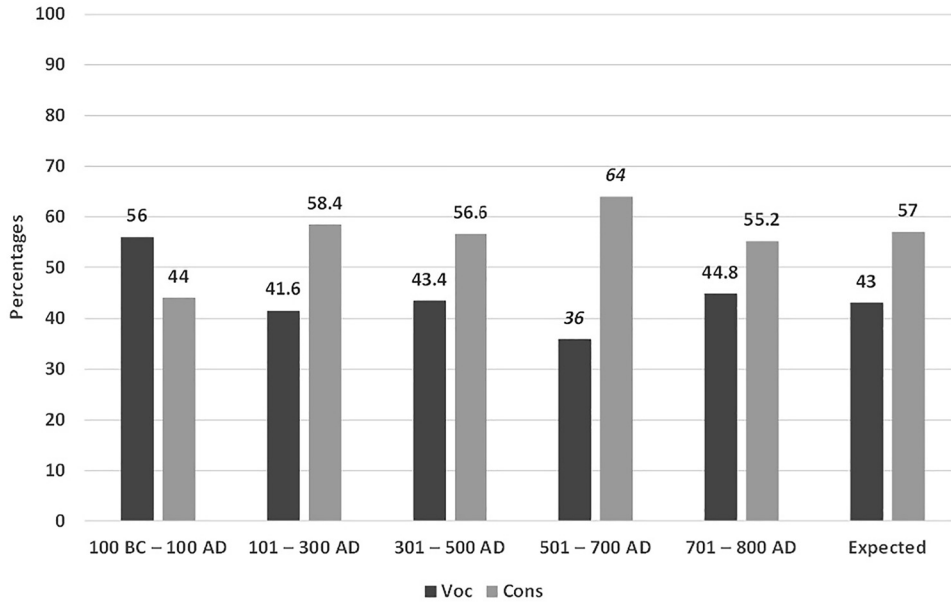

Chart 1. The proportion of vowel and consonant changes in Etruria in the five selected periods

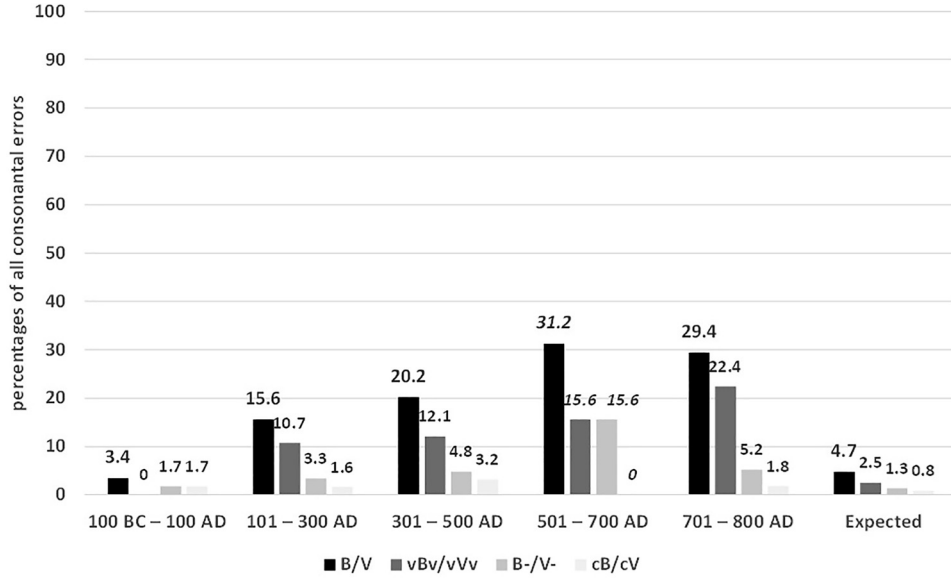

Chart 2. *b–w* merger reflected in the B/V letter confusions in Etruria in the five selected periods

In the next section, however, I will present separate phenomena within each subsystem, illustrating the dynamics of the spread of each linguistic phenomenon, and at the same time demonstrating how the parchment charter material of the 8th century takes over and continues the role of linguistic evidence of the epigraphic material originating from the earlier centuries.

Before we turn to the changes of the vowel system, let us have a brief overview of the *b*–*w* merger, reflected in the B/V letter confusions within the consonant system (Chart 2). The different columns in each period indicate different values: the percentage of all confusions in the consonant system, followed by the intervocalic, the word-initial position, and then the post-consonantal position. Just at first glance, it is obvious how this phenomenon became more and more prevalent in Etruria over the centuries.

As for total percentages, we start at 3.4% in the first period from 1st century B.C. through 1st century A.D., then the proportion skips to 15.6% (well above the expected proportion[13]) in the 2nd and 3rd century, continues to rise to 20.2% in the 4th and 5th century, and finally reaches 29.4% in the 8th century. You will note that I did not mention the results from the 6th and 7th century (31.2%) due to the low volume of data I have mentioned already. If we look only at the inter-vocalic *b*–*w* merger, which was a pan-Romance phenomenon, we can see that the 0% rate in the first period from the 1st century B.C. through 1st century A.D. increases to 10.7% in the 2nd through 3rd century (again, well above the expected proportion), then to 12.1% in the 4th through 5th century, and finally to 22.4% in the 8th century. From this, you can see that the inter-vocalic *b*–*w* merger shows a more radical increase than the cumulative proportion of B-V faults that includes both the word-initial and post consonantal *b*–*w* mergers, neither of which ended up as pan-Romance phenomena, unlike the intervocalic merger.[14]

The 8th-century parchment charter material, however, reflects the further development of earlier linguistic change processes (which can be detected on the basis of epigraphic material) not only regarding *b*–*w* mergers, but also regarding vowel mergers.[15]

If we look at Chart 3 showing the percentages of vowel mergers compared to all vowel related mistakes in each period, we can see that vowel mergers have been present in Etruria from the earliest period onwards. This is demonstrated by how vowel mergers already account for 17.4% of all vowel-related mistakes in the first period from the 1st century B.C. through the 1st century A.D. Then we see a very slight decrease in the 2nd through 3rd century (14.9%), and then a significant increase in the 4th through 5th century (33.7%). The spread of vowel mergers presumably continued in the 6th through 7th century (*44.5*%), but the low data volume in this period does not allow us to confirm this assumption. In any case, our 8th century parchment charter data attest to the completion of the merger process, since the 82.7% rate of vowel mergers exceeds even the expected 71%. This expected 71% ratio corresponds to the average

[13]The expected rate of a sound change (in this case, the *b*–*w* merger) is calculated from the average rate of occurrence of the relevant letters (in this case, *b* and *v*) in a given Latin text. According to my own calculations, a Latin text containing 27,630 (= 100%) consonant letters (Cicero, Ad Atticum, Liber I, cf. https://www.thelatinlibrary.com/cicero/att1.shtml) contains 1,292 examples of the letters *b* and *v* (4.7%), of which 679 (2.5%) are in intervocalic position, 355 (1.3%) in word-initial position and 232 (0.8%) in a position adjacent to a consonant.

[14]Cf. Herman (2000b, 45–46).

[15]In contrast, some document groups from Southern Italy from the 9th–10th centuries already show a more standardised language state in which *e*/*i* and *o*/*u* confusions are almost completely absent, cf. Sornicola (2012, 52).

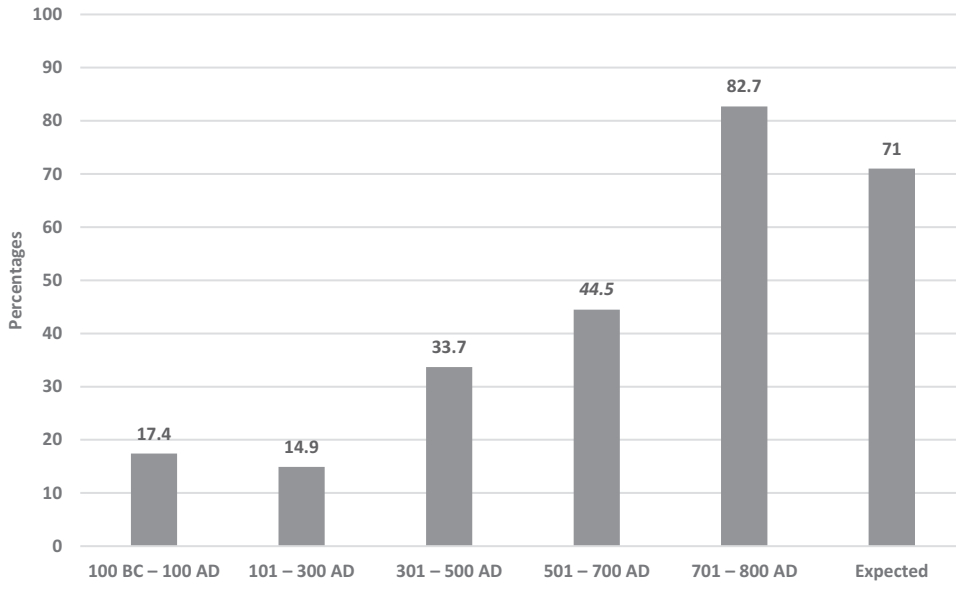

Chart 3. Percentages of vowel mergers (e/i + o/u faults) compared to all vowel related mistakes

proportion of *e-i* and *o-u* vowels in the Latin vowel system that could have been affected by the vowel merger.[16]

Now, the picture painted so far should be refined by an analysis of the proportions of E/I mistakes compared to O/U mistakes in Etruria in all five periods, see Chart 4 (and Table 1, columns 3 and 5). While evaluating the rates of *o–u* and *e–i* mergers as displayed there, I use the expected ratio of 1.9 as a reference number. This reference number indicates the case when the number of E/I confusions in the data pool is approximately the double of O/U confusions. This number also indicates that the two changes took place more or less at the same time and with the same intensity, since the number of the *e-i* sounds is approximately the double of *o-u* sounds in Latin. (Similarly, Herman used 2 as a reference number in his own study.)[17] Consequently, a numerical value considerably higher than 1.9 indicates that the merger of front vowels *e–i* was more advanced than that of back vowels *o–u* in a given area or period, or, in other words, that the merger of back vowels had just started or was underdeveloped compared to the merger of front vowels.

In light of this, let us look at the data for the five consecutive periods. In the earliest period, we have attested hardly any *o–u* mergers (just 2), while *e–i* mergers were a bit more frequent (with 11 records), which is reflected in the high ratio of 5.5 (11 : 2 = 5.5). In the 2nd and 3rd centuries, the *o–u* merger becomes more common, reflected in the ratio decreasing to 2.3 (9 : 4 = 2.3). However, it must be noted that the total number of vowel mergers in these first two

[16]Cf. Adamik (2022, 334 n. 27).

[17]Cf. Adamik (2022, 335 n. 30).

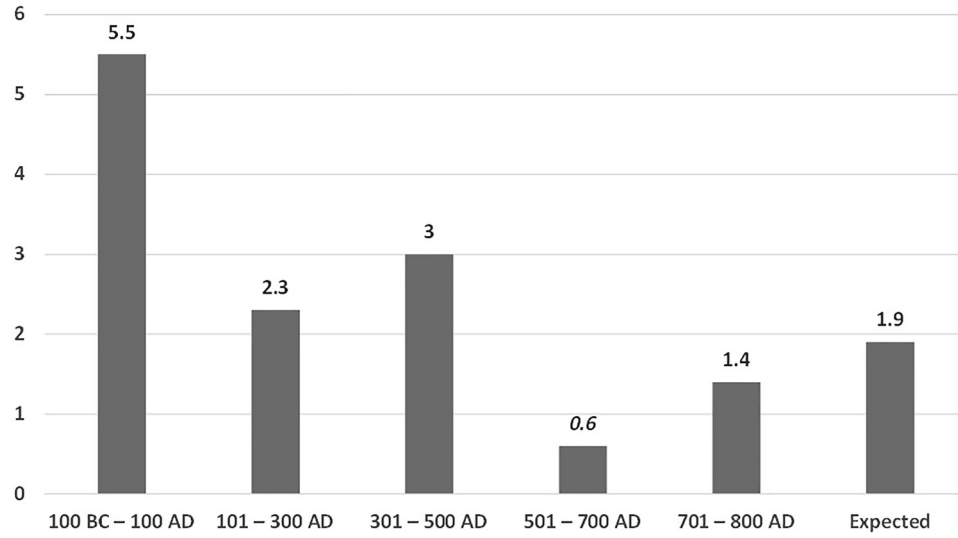

Chart 4. Proportions of E/I mistakes compared to O/U mistakes in Etruria

periods is quite low (13 records in each), which suggests caution in drawing conclusions from these data. In contrast, we already have a sufficient amount of data from the 4th and 5th centuries (32 records), which certainly confirms the trend of *o–u* mergers (8 records) catching up with *e–i* mergers (24 records), reflected in the ratio of 3 (24 : 8 = 3). The amount of data from the 6th–7th centuries is again too small with just 8 records to let us draw any conclusions, although the results still confirm the complete catching up of *o–u* mergers with *e–i* mergers (with the ratio dropping to just 3 : 5 = 0.6). That this catching-up did indeed take place is clearly shown by the data collected from the huge 8th century parchment charter material, in which, relatively, *o–u* mergers (260) are even more frequent than *e–i* mergers (372), exceeding all expectations. This is reflected in the ratio of 1.4 for the 8th century period (372 : 260 = 1.4). This means that in Etruria the *o–u* merger took place more intensively than the *e–i* merger in order to reach an equilibrium, expressed by the ratio of 1.9, when both mergers are taking place with the same intensity. Thus, in Etruria the common Romance vowel system, which realizes both mergers, was most probably developed by the 8th century.

Now, let us take a look at how our mergers behave in stressed and unstressed syllables (Charts 5 and 6). In Vulgar Latin, the *o–u* merger occurred later than the *e–i* merger, and similarly, vowel mergers in stressed syllables generally occurred and became widespread later than in unstressed syllables. This is already evident from the fact that the mergers did not involve as many vowels in stressed syllables as in unstressed syllables (this phenomenon is also evident in Romance languages, where the short *e* and *o* did not participate in the merger in stressed syllables, while it did participate in the merger in unstressed syllables).[18] Of course, I also use an expected ratio here, 1.7, which expresses that in Latin, about 63% of vowels in general occur in unstressed syllables and

[18]Cf. Herman (2000b, 34).

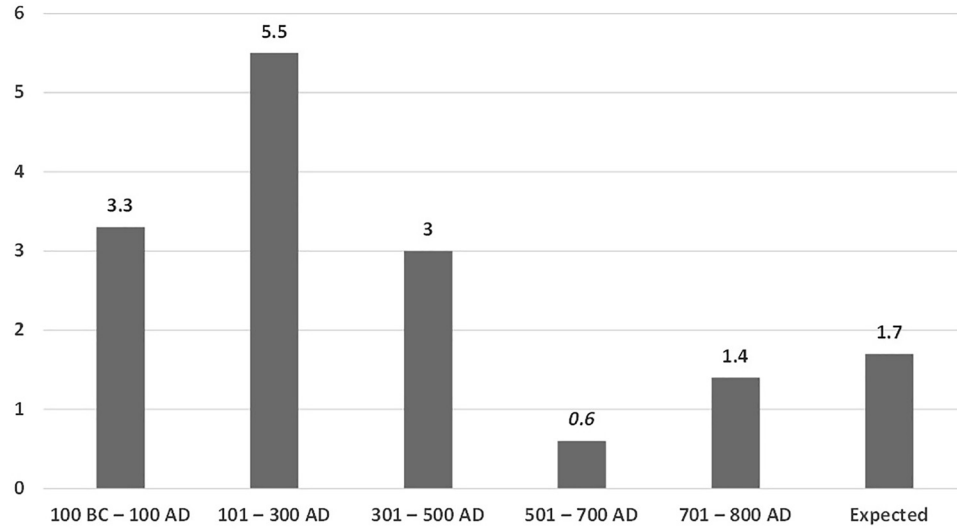

Chart 5. Distribution of vowel mergers in unstressed and stressed syllables (e/i/o/u to é/í/ó/ú ratio) in Etruria

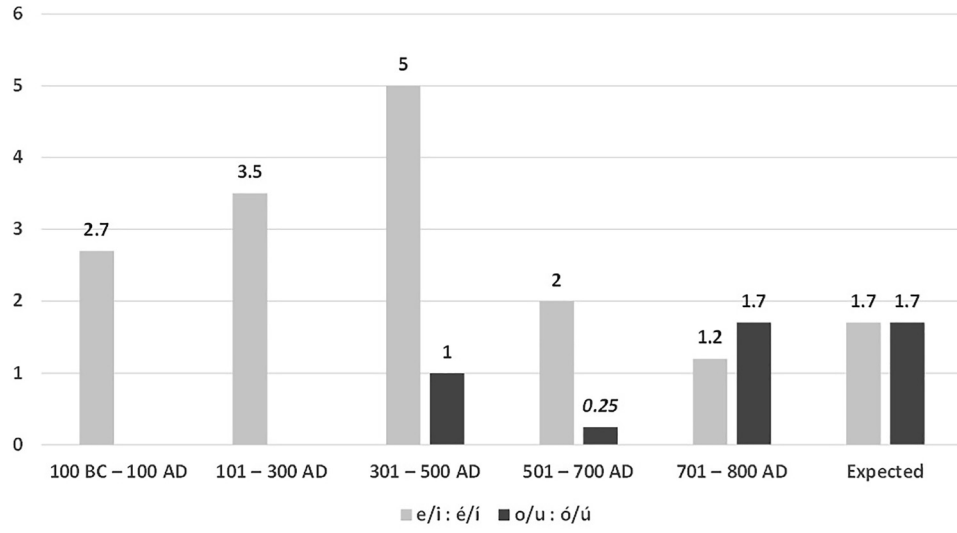

Chart 6. Distribution of *e-i* and *o-u* mergers in unstressed and stressed syllables (e/i to é/í and o/u to ó/ú ratio) in Etruria

37% in stressed syllables (62.8 : 37.2 = 1.69 = 1.7).[19] To this expected ratio of 1.7 I will compare the observed ratios of Etruria in all five periods. If the observed ratio in a given area is higher than the expected ratio (1.7), vowel mergers were much more intense in unstressed syllables than in

[19]Cf. Adamik (2022, 338 n. 33).

stressed syllables, and vice versa, if the observed ratio is lower than the expected ratio, the vowel mergers were much more intense in stressed syllables than in unstressed syllables. If the observed ratio is the same as the expected ratio (1.7) or very close to it, the vowel mergers took place with the same intensity in stressed and unstressed syllables.

If we look at Chart 5 (and column 6 of Table 1) addressing this topic, we can see that in the earliest period there are 3 stressed syllable confusions against 10 unstressed syllable confusions, which results in a ratio of 3.3. This increases to 5.5 in the 2nd and 3rd centuries, when there are 2 stressed syllable confusions against 11 unstressed syllable confusions. However, these figures should be treated with caution due to the low number of data (13 records each). The linguistic reality is much more likely to be reflected by the ratio of 3 we can see in the 4th through 5th century, which is the result of 8 stressed syllable confusions against 25 unstressed syllable confusions. The ratio of 0.6 for the 6th through 7th century can again be disregarded due to the extremely small number of data (8 records), while the ratio of 1.4 for the 8th century parchment charters is based on a very significant number of data (370 : 267 = 1.4), which means it must reflect the linguistic reality. The two periods for which we have sufficient data, the 4th through 5th century and the 8th century, therefore, reflect the expected linguistic development: merger in the 4th and 5th centuries did not yet affect the stressed syllable to the extent of the expected ratio (3 vs. 1.7), while merger in the 8th century already exceeded the expected ratio (1.4 vs. 1.7). This means that in 8th century Etruria, mergers took place more intensively in stressed syllables than in unstressed syllables in order to reach an equilibrium, expressed by the ratio of 1.7, when the merger takes place or has taken place with the same intensity in both stressed and unstressed syllables.

Now, we can further refine our analysis by separately considering the distribution of *e–i* and *o–u* mergers in unstressed and stressed syllables, see Chart 6 (and column 7 of Table 1). In this case, we can see that in the first two periods only the *e–i* merger occurs in both unstressed and stressed syllables, at a higher rate (2.7 and 3.5) than expected (1.7), while the *o–u* merger is only reported in unstressed syllables (2 and 4 records, respectively). This pattern for both early periods is certainly noteworthy, even if the low data density suggests caution. Compared to the earlier periods, in the 4th and 5th centuries the *o–u* merger practically breaks into the stressed syllable very intensively, which is shown by a ratio much lower than expected (4 : 4 = 1 vs. 1.7), even if the low volume of data (8 records) again warns us to be cautious. This process intensifies in the 6th and 7th centuries, when almost only stressed syllable *o–u* mergers were recorded (1 : 4 = 0.25), but of course the small volume of data (5 records) warns us to be extremely cautious here too. Finally, in the last period of the 8th century, the *o–u* merger occurs in the expected proportion of unstressed and stressed syllables, as shown by the ratio of 1.7 identical with the expected ratio. The *e–i* merger then seems to appear a little more intensively in stressed syllables, which could be inferred from the ratio of 1.2, but here too we might be seeing a case of a swing towards equilibrium, if this minimal difference between the ratio of *e–i* and *o–u* mergers (1.2 vs. 1.7) is statistically relevant at all.

In any case, from what we see when comparing mergers in stressed and unstressed syllables, we can conclude not only that stress generally delayed the occurrence and spread of mergers, but also that the delaying effect of stress was apparently stronger for the *o–u* merger than for the *e–i* merger.[20] It seems, therefore, that *o–u* mergers not only spread later in Etruria than *e–i* mergers,

[20]This has already been observed by Hinojo Andrés (1996, 721–722) in connection with the Hispanic inscriptions of the 4th–6th centuries, based on the data of Herman (1965=1990).

but they also appeared later in stressed syllables than in unstressed syllables. Still, we should be cautious about the latter conclusion, because the number of *o–u* confusions in the earliest two periods is very low (2 and 4 records respectively), so the absence of stressed syllabic merger does not seem conclusive here, although it is certainly noteworthy.

In conclusion, the Latin linguistic features of the 8th century parchment charters of the ChLA, in this case from Etruria, organically continue and complete the earlier Latin linguistic processes, mainly observed in inscriptions, which led to the development of the local Italo-Romance, i.e. Italian dialects, in the 9th and 10th centuries.[21] This is important to stress because the outdated view, dating from the late 19th century, that the history of Latin ends around 600 A.D.[22] and that the later Latin texts belong to some suspicious "Mittellatein", medieval Latin, is still held to this day. This is reflected, for example, in the division of labour between the *Thesaurus Lingae Latinae* and the *Mittellateinisches Wörterbuch*, the former covering the vocabulary of Latin texts from before about 600 A.D., the latter from about 600 A.D. onwards (until the end of the 13th century).[23] This misconception has caused a huge backlog in the linguistic-historical, dialectological use of the Latin text material that was created in the period after 600 A.D. but before the appearance of the Romance languages in the 9th and 10th centuries, so roughly between 601 and 800 A.D. The linguistic rehabilitation of this text material started only after the relevant research (mainly by Roger Wright and József Herman), based on a thorough analysis of metalinguistic sources, demonstrated that the transition from Latin to Romance occurred earliest in Gaul, in the second half of the 8th century, and then in Italy and Spain in the 9th and 10th centuries.[24] Consequently, the relevant 8th century texts of the ChLA are still part of the history of Latin, especially in Italy (where this can even be said of the 9th century ChLA texts, as the volume of studies edited by Sornicola, D'Argenio, and Greco pointed out, cf. Sornicola et al., 2017). As a result, the local, 8th-century linguistic situation reflected in these texts is better described as Latin than as Italian, as done for example by Zamboni 2000 (e.g. p. 194: "Condizioni generali dell'italiano nel sec. VIII.").

The overall linguistic picture that emerges from these texts showcases a language that is closer to Latin than to Italian.[25] It is true that the Italian material of the first series of the ChLA is its only material that already includes linguistic phenomena which will later continue in the

[21]The fact that the Etrurian material in the 8th century is the one closest to the Romance conditions regarding the aspects under study has nothing to do with the fact that the material of the 8th century is by far the largest, many times the size of the material of the earlier periods. It should be noted that the same or very similar evolutionary relationships can be observed if the 8th century Etrurian material is compared with e.g. the inscription material of the city of Rome from earlier periods, for example in terms of the frequency of vowel mergers and *b–w* mergers. Rome, vowel mergers, first period: E/I + O/U 10.8% = 74 (100% = 687), second period: E/I + O/U 15.5% = 332 (100% = 2,149), third period: E/I + O/U 29.4% = 1,073 (100% = 3,649), fourth period: E/I + O/U 38. 7% = 74 (100% = 191), and *b–w* mergers, first period: B/V 4.3% = 26 (100% = 604); second period: B/V 22.6% = 691 (100% = 3,066); third period: B/V 38.5% = 2,491 (100% = 6,465); fourth period: B/V 49.2% = 91 (100% = 185).

[22]Cf. Adamik (2015, 643–644).

[23]Cf. Prinz & Schneider (1959, IV).

[24]Cf. Herman (2000b, 115), Herman (1996=2006) and Wright (2002, 193–210, i.e. Chapter 13: Periodization and Language Names: Italo-Romance in 1000 A.D.).

[25]A similar (if still somewhat different) assessment is reflected in Greco's (2018, 174) view of the linguistic systems of a group of documents from 9th-century southern Italy (Cava de' Tirreni): "sistemi che non possiamo qualificare come completamente latini, ma nemmeno come romanzi."

Italian language, but other phenomena which will be distinctive in Italian are still missing in this 8th century material. Characteristics that point toward the development of Italian include the replacement of the plural nominative-accusative *-ēs* ending in the 3rd declension nouns by the 2nd declension ending *-ī* (e.g. *fuerunt anticessori = fuerunt antecessores*, ChLA 38, 1098, 20, Etruria, Luca, 785 A.D.). At the same time, there are no attestations of, for example, the diphthongization so characteristic of Italian (e.g. *pĕde* > *piede* / *pĕdi* > *piedi,* compare LLDB-155283: acc. pl. -I pro -es / decl. II pro III, *terrul̄ () | pedi sex = terrula () pedes sex*, ChLA 23, 740, 10 = CDL 2, 184, 10, Etruria / Regio VII, Marta (Viterbo), 765 A.D.). If we still want to label this 8th century linguistic state in relation to Italo-Romance or Italian, then "proto-Italo-Romance"[26] or "proto-Italian"[27] seem more appropriate. In that case, however, it would make more sense to label it "transitional Latin from Italy".[28]

ACKNOWLEDGEMENT

The present paper was prepared within the framework of the HORIZON-ERC-2022-ADG project no. 101098102 entitled Digital Latin Dialectology (DiLaDi): Tracing Linguistic Variation in the Light of Ancient and Early Medieval Sources and of the NKFIH (National Research, Development and Innovation Office) project no. K 135359 entitled Computerized Historical Linguistic Database of Latin Inscriptions of the Imperial Age (see: http://lldb.elte.hu/). Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Council Executive Agency. Neither the European Union nor the granting authority can be held responsible for them. I wish to express my gratitude to Zsuzsanna Sarkadi for her help in the revision of the English text.

BIBLIOGRAPHY

Adamik, Béla. 2012. In search of the regional diversification of Latin: Some methodological considerations in employing the inscriptional evidence. In Fr. Biville, M.-K. Lhommé and D. Vallat (eds.) Latin vulgaire – latin tardif IX: Actes du IX^{e} colloque international sur le latin vulgaire et tardif, Lyon, 6–9 septembre 2009. Lyon: Maison de l'Orient e la Méditerranée. 123–139.

Adamik, Béla. 2015. The periodization of Latin: An old question revisited. In G. Haverling (ed.) Latin linguistics in the early 21st century: Acts of the 16th International Colloquium on Latin Linguistics, Uppsala, June 6th–11th, 2011. Uppsala: Uppsala Universitet. 640–652.

Adamik, Béla. 2022. The transformation of the vowel system in Gallic Latin as evidenced in inscriptions and the problem of dialectal positioning of Roman Gaul. Acta Antiqua Academiae Scientiarum Hungaricae 62. 321–341.

[26]Cf. Repetti (1997, 52).

[27]Cf. Banniard (2017, 37): "protoitalien"

[28]Cf. Adamik (2015, 649–650).

Adamik, Béla. forthcoming. The dialectological situation of the Latin language in late Italy before and in the Langobard period as evidenced in inscriptions: The phonological aspect. In E. D'Argenio, R. Delle Donne and R. Sornicola (eds.) Lingue, scritture e società nell'Italia longobarda: Un percorso di socio-linguistica storica. Napoli: Federico II University Press.

Banniard, Michel. 2017. Niveaux de langue et strates écrites dans les documents juridiques des 8^{e}–9^{e} siècles: Sur le fonctionnement communicationnel des *Chartae Latinae Antiquiores* en Toscane. In A. García Leal and C. E. Prieto Entrialgo (eds.) XI Congreso International sobre el Latín Vulgar y Tardío (Oviedo, 1–5 de septiembre de 2014). Hildesheim: Olms-Weidmann. 17–37.

Bruckner, Albert and Marichal, Robert (eds.). 1954–1998. Chartae Latinae Antiquiores. Facsimile Edition of the Latin Charters Prior to the Ninth Century. Parts 1-49. Olten – Lausanne – Zürich: Urs Graf-Verlag.

Greco, Paolo. 2018. Linguistica e sociolinguistica nell'analisi delle carte notarili di Cava de' Tirreni (IX secolo): Qualche considerazione metodologica. In P. Greco, C. Vecchia and R. Sornicola (eds.) Strutture e dinamismi della variazione e del cambiamento linguistico: Atti del Convegno DIA III, Napoli, 24–27 novembre 2014. Naples: Società Nazionale di Scienze Lettere e Arti. 169–180.

Herman, József. 1965=1990. Aspects de la différenciation territoriale du latin sous l'Empire. In J. Herman. Du latin aux langues romanes: Études de linguistique historique. Edited by S. Kiss. Tübingen: Niemeyer. 10–28.

Herman, József. 1996=2006. The end of the history of Latin. In J. Herman. Du latin aux langues romanes II. Nouvelles études de linguistique historique. Edited by S. Kiss. Tübingen: Niemeyer. 195–213.

Herman, József. 2000a. Differenze territoriali nel latino parlato dell'Italia tardo-imperiale: Un contributo preliminare. In J. Herman and Marinetti (eds.) La preistoria dell'italiano: Atti della Tavola Rotonda di Linguistica Storica, Università Ca' Foscari di Venezia, 11–13 giugno 1998. Tübingen: Niemeyer. 123–135.

Herman, József. 2000b. Vulgar Latin. Translated by R. Wright. University Park, PA: The Pennsylvania State University Press.

Hinojo Andrés, Gregorio. 1996. El latín de las inscriptiones de Hispania. In A. Alonso González (ed.) Actas del III Congreso Internacional de Historia de la Lengua Española, Salamanca, 22–27 de noviembre de 1993, Vol. 1. Madrid: Arco Libros. 713–724.

Papini, Alessandro. 2022. *Ipsa latinitas et regionibus cotidie mutetur et tempore*: Some methodological considerations on the use of Herman's quantitative method. Listy filologické 145. 343–378.

Prinz, Otto and Johannes Schneider (eds.). 1959. Mittellateinisches Wörterbuch bis zum ausgehenden 13. Jahrhundert I(1). Berlin: Akademie-Verlag.

Repetti, Lori. 1997. The syllable. In M. Maiden and M. Parry (eds.) The dialects in Italy. London & New York, NY: Routledge. 52–57.

Sornicola, Rosanna. 2012. Bilinguismo e diglossia dei territori bizantini e longobardi del Mezzogiorno: Le testimonianze dei documenti del IX e X secolo. Naples: Accademia Pontaniana.

Sornicola, Rosanna, Elisa D'Argenio and Paolo Greco (eds.). 2017. Sistemi, norme, scritture: La lingua delle più antiche carte cavensi. Naples: Federico II University Press.

Wright, Roger. 2002. A sociophilological study of Late Latin. Turnhout: Brepols.

Zamboni, Alberto. 2000. Dell'Italiano: Dinamiche e tipologie della transizione dal latino. Rome: Carocci.