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POTENTIAL GREEK INFLUENCE ON THE VULGAR LATIN SOUND CHANGE [b] > [β]: DIALECTOLOGICAL EVIDENCE FROM INSCRIPTIONS*

Summary: This paper intends to investigate Greek influence on the Latin sound change [b] > [β] suggested occasionally in the literature by surveying not only the relevant linguistic data of Latin/Romance and Koine/Modern Greek but also the relevant literature and by involving and analyzing data sets recorded from 18 Roman provinces and the city of Rome in the Computerized Historical Linguistic Database of the Latin Inscriptions of the Imperial Age (cf. <http://lldb.elte.hu/>) by a more differentiated phonological approach considering external sandhi rules and in a chronological distribution more detailed than any applied before. In the end, the influence of Greek has been evidenced at least for some areas and especially for the early period (1st–3rd century AD), which is more important in this respect than the late period (4th–6th century AD), since then the merger can also be explained by developments in Latin itself beside a supposed external influence.

Key words: language contact, Greek influence on Latin, phonology, regional diversification of Latin, Latin dialectology, Koine Greek, Vulgar Latin

1. INTRODUCTION

The idea that the Vulgar Latin sound change [b] > [β] (later > [v]) and the same change in Koine Greek might somehow be connected is not a new one. The potential connection and contact between the two languages in this special phonological respect has been occasionally discussed in the literature in different ways. Kramer briefly dealt with this phonological parallelism as a potential case of linguistic convergence

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within the concept of the so-called ‘Sprachbund’ adopted by him to refer to an assumed ‘language league’ of Greek and Latin.¹ Politzer explained this Latin sound change by Greek influence in the wider phonological framework of the transformation of Latin voiced stops into voiced continuants.²

The Greek influence on the Latin sound change discussed here was (rather implicitly) suggested occasionally also by scholars who, while treating territorial aspects of epigraphical Latin, observed a potential correlation between the incidence of B/V confusion (motivated by the merger of /b/ and /w/ to [β]) in Latin inscriptions and the degree of linguistic Hellenization in the relevant areas, for instance briefly by Baehrens regarding word-initial positions,³ and in detail by Gratwick regarding all intervocalic positions (see below in detail).⁴ Concerning Gratwick’s observations, J. N. Adams drew attention to the fact that “the confusion is attested not only in southern Italy and at Rome, areas where its frequency might seem to fit in with the hypothesis, but also in Spain, northern Italy and central Italy, even if it is not as frequent there”. In the end, however, Adams left his own question unanswered: “The real question is whether, if we allow that Greeks did merge Latin *b* and consonantal *u*, the case can be sustained that the widespread spelling confusions in imperial Latin between B and V (and the mergers, such as they are, in the Romance languages) can ultimately be traced back to the influence of Greeks or bilinguals speaking Latin.”⁵

In our paper we will attempt to answer this question of Adams. We will do so on the one hand by surveying not only the relevant linguistic data of Latin/Romance and Koine/Modern Greek, but also the relevant literature, and, on the other hand, by involving and analysing relevant data sets recorded from 18 Roman provinces and the city of Rome in the Computerized Historical Linguistic Database of the Latin Inscriptions of the Imperial Age⁶ by a more differentiated phonological approach considering external sandhi rules (which operate across word boundaries) in a chronological distribution in more detail than so far. Through this, we hope to take away the edge, at least as for the Greek language, of the next statement of Adams: “The case of B and V has proved a happy hunting ground in this respect, with a variety of other languages allegedly causing the confusion.”⁷

¹ KRAMER, J.: Der kaiserzeitliche griechisch-lateinische Sprachbund. In REITER, N. (ed): *Ziele und Wege der Balkanlinguistik. Beiträge zur Tagung vom 2.–6. März 1981 in Berlin*. Berlin 1983, 115–131 (=KRAMER, J.: *Von der Papyrologie zur Romanistik*. Berlin 2011, 57–80). Against his concept, see BINDER, V.: *Sprachkontakt und Diglossie. Lateinische Wörter im Griechischen als Quellen für die lateinische Sprachgeschichte und das Vulgärlatein*. Hamburg 2000, 106. Kramer’s concept of a Graeco-Latin linguistic league was transformed by Adrados into a concept of Graeco-Latin referring to a kind of hellenized or mixed Latin, cf. ADRADOS, F. R.: *A History of the Greek Language from Its Origins to the Present*. Leiden–Boston 2005, 211 and 217–218.

² POLITZER, R. L.: On B and V in Latin and Romance. *Word* 8 (1952) 211–220, 215.

³ BAEHRENS, W. A.: *Sprachlicher Kommentar zur vulgärlateinischen Appendix Probi*. Halle 1922, 80.

⁴ GRATWICK, A. S.: Latinitas Britannica: Was British Latin Archaic? In BROOKS, N. (ed.): *Latin and the Vernacular Languages in Early Medieval Britain*. Leicester 1982, 1–79, 25, 32.

⁵ ADAMS, J. N.: *The Regional Diversification of Latin 200 BC–AD 600*. Cambridge 2007, 629, 663–665.

⁶ Cf. <http://lldb.elte.hu/>

⁷ ADAMS (n. 5) 663.

The starting point for our survey must be a short evaluation of the situation as for the sound change [b] > [β] > [v] in ancient and modern Greek and then in Latin and Romance. Since the phenomenon under consideration, as we shall see, turned up in Greek earlier than in Latin, we assume that if there was any connection between these two languages in this special issue, then it was rather Greek that influenced Latin than the other way round. This chronological evidence compels us to start with Greek.

2. THE GREEK EVIDENCE

First of all, it is worth mentioning that the so-called Koine Greek was a kind of somewhat Ionicised Attic language, i.e. an amalgam of dialects which had neither a labio-velar semivowel [w], nor a bilabial fricative [β], nor a labiodental fricative [v]. Such fricatives existed only in those dialects of ancient Greek, such as Aeolic and Doric, which in essence did not have any impact on the formation of the Koine. In these dialects outside of the Koine the sound [w] was written with the letter digamma Ϝ, and the bilabial voiced stop [b] was written with the letter beta β, therefore the very first signs of a sound change [b] > [β] or even a merger of [b] and [w] into a [β] in these dialects are to be found in the occasional confusion of the letters beta β and digamma Ϝ in inscriptions of the 5th–3rd centuries BC.⁸

In the dialects which formed the Koine, for the lack of [w] in syllable-initial position and the correspondent letter digamma Ϝ, another kind of misspelling helps us observe a merger of [b] and [w] into a [β] as early as in the 2nd century BC. After the second element of the original diphthongs /au/, /eu/ gained a (more) consonantal character, i.e. they turned into [aw, ew] and then into [aβ, eβ], a potential change of [b] into [β] became again visible by the confusion of the letters upsilon υ and beta β in diphthongal or pseudo-diphthongal environments, i.e. in syllable-final position.⁹ Such inverse spellings as ἐνδομον for ἔβδομον attested in Boeotia from the end of the 3rd century BC and ῥαυδους for ῥάβδους in Egypt from 156 BC clearly show that the change of [b] into [β] came into action in some territories of the Koine language area in the 2nd century BC the latest. As Gignac formulates: “The shift of the classical voiced

⁸ E.g. Doric Εὐβάλλης for Εὐράλλης (att. Εὐάλλης), Cretan διαβεπάμενος for διαφειπάμενος (att. διειπάμενος), Elean βοιζίαρ for φοιζίαρ (att. οἰζίας), cf. SCHWYZER, E.: *Griechische Grammatik I*. München 1939, 207–208.

⁹ HORROCKS, G. C.: *Greek: A History of the Language and Its Speakers* (Second Edition). Chichester 2010, 169: “The progressive narrowing of the articulation of the second element of the original diphthongs /au, eu/, beginning in the 3rd century BC and leading, via [aw, ew], to audible friction, i.e. [aϕ^w /aβ^w, eϕ^w /eβ^w], is first attested in the spellings α(υ)ου/ε(υ)ου, which seem to reflect the consonantal character of the second element. By the Roman period, after the loss of the simultaneous lip-rounding, we seem to be dealing simply with a pronunciation [aϕ /aβ, eϕ /eβ], or perhaps even [af/av, ef/ev] as in Modern Greek; spellings with β (which by this time represented /β/ or /v/, see below) become increasingly common in late Roman and early Byzantine documents.”

stop /b/ to a fricative /β/ is first attested in the second century BC but does not appear widespread until the 1st century AD.”¹⁰

According to Gignac, this pronunciation is indicated in the papyri by a) the occasional interchange of β with the second element of an αυ or ευ diphthong (which was pronounced as a bilabial fricative), e.g. προσαγόρεβσε for προσαγόρευσε (5th/6th cent. AD) or, conversely, the above mentioned ῥάνδους for ῥάβδους from 156 BC and ἐνδόμη for ἐβδόμη (4th cent. AD); b) the occasional insertion of β to represent a [w] glide between vowels, e.g. προσαγοεύβομε for προσαγορεύομαι (4th/5th cent. AD); and c) transcriptions of Latin consonantal *u* (*v*) with the Greek β with increasing frequency from the first century AD on, e.g. ἡβο[χᾶτ]ος for ἡνο[χᾶτ]ος (= *evocatus*, 2nd cent. AD) or βικαρίος for οὐνικαρίος (= *vicarius*, 6th cent. AD).¹¹

To sum up, by the 1st century AD the original voiced stop /b/ in the Koine generally changed to a fricative /β/ and later to a labiodental fricative [v] in all positions (possibly except after nasals¹²), a situation which can be also found in modern Greek where the pronunciation of β is [v]/[f] as follows: β=[v] (Βασίλης [Vasilis]), αυ=[av] (αυλός [avlos]) / [af] (αυτός [aftos]).

Before turning to Latin, a short remark should be made upon Gignac's last point of evidence, based on the transcriptions of Latin consonantal *u* (*v*) with the Greek β: in cases like Λιβίου for Λιούιου (gen. sg. = *Livii*) or Νέρβα for Νέρουνα (gen. sg. = *Nervae*), etc. we cannot tell for sure whether the relevant *betas* display a Latin orthographic and linguistic feature (i.e. a Latin misspelling like *Libii* for *Livii* or *Nervae* for *Nervae*)¹³ or the contemporary Greek pronunciation (i.e. β=[β]/[v]), since the relevant sound changes can be evidenced in both languages by the 1st century AD.¹⁴ For this very reason the Greek transcriptions of Latin lexical items should rather be excluded in this special regard.

3. THE LATIN AND ROMANCE EVIDENCE

Now we can turn to the problem of the sound change [b] > [β] (> [v]) in Latin, which, together with the sound change [w] > [β] (> [v]), is known as the merger of *b* and

¹⁰ GIGNAC, F. T.: The Pronunciation of Greek Stops in the Papyri Source. *TAPhA* 101 (1970) 185–202, 200.

¹¹ Cf. GIGNAC (n. 10) 188. One of his relevant examples, i.e. Σερβικίου (to be found on a papyrus from 68 AD) does not stand for an otherwise unattested *Servicius* as Gignac assumes but simply displays a misspelling by omission of letters, i.e. Σερβικίου stands for Σερβίου Σουλπικίου (i.e. Λουκίου Λιβίου Σερβ < ιου Σουλπ > ικίου Γάλβα for Λουκίου Λιούιου Σερούιου Σουλπικίου Γάλβα = *Lucius Livius Servius Sulpicius Galba*).

¹² Cf. HORROCKS (n. 9) 170: “Fricativization then affected the labial /b/ (β=β/ by the 1st century AD, except after nasals).” This exception after nasals might have been later overruled, if ever existed, since it has no traces in Modern Greek where β is generally pronounced as [v] after nasals too, e.g. λαμβάνω as [lamˈvano], etc. (for this addition I am indebted to Dóra Solti).

¹³ Cf. *Libius* for *Livius* in *CIL* (= *Corpus Inscriptionum Latinarum* 1–. Berlin 1863–) 14, 5359 (Ostia, Italy) and *Nerba* for *Nervae* in *AE* (= *L'Année Epigraphique* 1–. Paris 1888–) 1966, 488, but from Cyprus in a bilingual inscription and therefore rather to be put down to the influence of Greek.

¹⁴ Cf. ADAMS (n. 5) 664.

w, i.e. [b] > [β] < [w]. In the first century AD, this merger was triggered by the convergence through which the labial velar semivowel phoneme /w/ developed a bilabial fricative articulation [β] in syllable-initial position and the bilabial voiced stop phoneme /b/ began to be fricativized to [β], at least in word-medial, intervocalic position: this partial merger of /w/ and /b/ motivated the confusions in spelling B for V (e.g. DONABIT for *donavit*) and, sometimes, V for B (like OVITI for *obiti*).¹⁵ Later on the pronunciation of the relevant fricative (developed from the original semivowel [w]) changed from bilabial [β] to a labiodental [v] at least in some areas as early as in the 2nd century AD as it is evidenced on inscriptions by such rare spellings as IMVENIAS for *invenias* (i.e. for the bilabial pronunciation [β]), and by EVNVE for *eumve* (i.e. for the labiodental pronunciation [v]).¹⁶

We have already mentioned the partial nature of this merger of /w/ and /b/ in Latin. Partial here refers firstly to the fact that – contrary to Greek – this merger did not affect the syllable-final position. Thus, as opposed to the syllable-initial position, the second element of the diphthong *au* (written as AV) did not change from the labial velar semivowel phoneme [w] to the bilabial fricative [β] and therefore did not take part in the spelling confusion between B and V. This is the reason why we cannot cite any examples from Latin inscriptions for the misspelling of the diphthong *au* as AB and, conversely, for the misspelling of the sequence *ab* as AV, thus such forms as *CLABDIVS for *Claudius* or *TABRVM for *taurum* and *FAVRVM for *fabrum*, etc. do not turn up in the Latin epigraphic material at all.¹⁷

Secondly, this merger was partial in Latin, at least in its latest form prior to the birth of Romance, inasmuch as it did not affect the word initial position or it did so only in a geographically restricted area. In this special respect there is an interesting contrast between the Latin and the Romance data, and, since the key to understanding the situation in Latin lies in the Romance evidence, we are forced to start with the latter.

It is a well-known fact that the Romance continuation of Latin intervocalic *b* is always and everywhere a fricative, either a bilabial or a labiodental one, cf. lat. *caballum* > sp. *caballo* [β], fr. *cheval*, it. *cavallo* [v], etc., thus the fricativisation in intervocalic position can be regarded as the general case.¹⁸ More complicated is the relevant Romance evidence as for word-initial and post-consonantal (i.e. post-liquid)

¹⁵ Cf. STEPHENS, L. D.: The Role of Palatalization in the Latin Sound Change /w/ > /β/. *TAPhA* 118 (1988) 421–431; 421, and HERMAN, J.: *Vulgar Latin*. Transl. by R. Wright. The Pennsylvania State University Press 2000, 39, 45–46. ‘Rarer’ means here that e.g. of the 355 items of all sorts of B/V confusions recorded (concerning the status on 01.06.2016) in the Database from later Italy (4–7 century AD) 311 (88%) are of the V → B type and only 44 (12%) are of the B → V kind.

¹⁶ Cf. the data forms LLDB-41173 (IMVENIAS) and LLDB-9851 (EVNVE) in the above mentioned Database.

¹⁷ Fricativization affected the labial /b/ before /r/ only after the birth of Romance but even then not generally, see the Romance continuations e.g. of Vulgar Latin *fabru(m)* as Italian *fabbro*, Old French *fevre*, Occitan *faure* etc. (REW no. 3120); cf. also BANFI, E.: Tendenze romanze comuni I. Fonetica. In HOLTUS, G. et al. (eds): *Lexikon der Romanistischen Linguistik*. Bd. II.1: *Latein und Romanisch: Historisch-vergleichende Grammatik der Romanischen Sprachen*. Tübingen 1996, 163–199, 193; and TAMÁS, L.: *Einführung in die historisch-vergleichende romanische Sprachwissenschaft*. Gerbrunn bei Würzburg 1983, 76.

¹⁸ See BANFI (n. 17) 185 and HERMAN: *Vulgar Latin* (n. 15) 45.

positions. However, it can be stated that, with some exceptions to be discussed later, Romance languages did not merge *b* and *v* in those positions, as it is clear from the next examples: lat. *bonum* > rum. *bun*, dalm. *bun*, it. *buono*, fr. *bon*, occ., cat. *bo*, por. *bom*, sp. *bueno* [b] (only intervocally in external sandhi position [β]) vs. lat. *vacca* > rum. *vacă*, it. *vacca*, fr. *vache*, occ., cat. por. *vaca* [v], sp. *vaca* ([b]/[β] depending on the external sandhi positions).¹⁹

There are of course notable exceptions to this default configuration of keeping *b* and *v* separate word initially, such as the general Sardinian continuation of both sounds in a stop *b*- as it is shown e.g. by (log.) *bakka* from lat. *vacca* and (log.) *bonu* from Latin *bonus*, etc., or the fricative continuation of *b*- as *v*- as it is found in some Romance dialects, e.g. in southern Italian where we have *vocca* corresponding to Italian *bocca* from Latin *bucca*, and (log.) *vinu* from latin *vinum*.²⁰ However, these exceptions are to be explained by processes which took place not in Latin but in the Romance languages,²¹ since assuming that *b* and *v* were merged in a fricative again word-initially just as intervocally but later restored would be more problematic.²²

As for the post-consonantal, i.e. post-liquid position, a very similar conclusion can be drawn. In this position, if a sound change happened at all, then it was not the stop *b* that fricativized to bilabial [β] and then to labiodental [v], but conversely, the fricative [β] / [v] developed to a stop [b] after the liquids *l* and *r*, but, rather than uniformly and generally, in a geographically limited and inconsistent way, as you can see on the following examples: lat. *corvus* > rum. *corb*, occ. old fr. *corp* (fr. *corbeau*), cat. *corb* vs. it. por. *corvo*, sard. log. *korvu*, sp. *cuervo*, and lat. *servare* > rum. *sărba*, it. *serbare* vs. sard. log. *servare*, occ., cat., old sp. *servar*. Therefore the default configuration in post-consonantal, i.e. post-liquid position must have been the keeping of *b* and *v* separate in the latest Vulgar Latin before the transition from Latin to Romance.²³

This situation of keeping *b* and *v* separate word-initially and post-consonantly but merging them intervocally, which can be reconstructed from Romance for the latest phase of Latin, stands in sharp contrast to the Koine Greek situation of fricativizing the

¹⁹ See POLITZER (n. 2) 211, BANFI (n. 17) 185 and TAMÁS (n. 17) 62. For a detailed analysis of the complex Romance evidence see WEINRICH, H.: *Phonologische Studien zur romanischen Sprachgeschichte*. Münster 1958, 82–104 (chapter 4: ‘Die Labialkonsonanten’).

²⁰ See TAMÁS (n. 17) 62.

²¹ As it is assumed by HERMAN: Vulgar Latin (n. 15) 46 as for the situation found in Spanish. Cf. also WEINRICH (n. 19) 91: “Der Betazismus [v- > b-] der Ibero-Romania ist sekundär.”

²² As it is accepted e.g. by VÄÄNÄNEN, V.: *Introduction au latin vulgaire*. Paris. 1981³, 50: “toute-fois *b* a été rétabli à l’initiale, sauf pour une zone méridionale comprenant le sarde, les parlers italiens du sud, l’espagnol, le catalan et le gascon, où ce phonème est réalisé [b] ou [β] selon la phonétique syntactique.” This explanation, i.e. assuming a restoration process in Late Latin which otherwise could have been based merely on literary tradition and school education, i.e. on the written language use, etc., is totally in contradiction with the concept of “Vulgar Latin as so defined is in essence the spoken language of people who were scarcely influenced at all by the literary tradition”, as defined by HERMAN: Vulgar Latin (n. 15) 7.

²³ As it is assumed by POLITZER (n. 2) 211 and TAMÁS (n. 17) 62. To the transition from Latin to Romance see HERMAN: Vulgar Latin (n. 15) 109–115 and ADAMIK, B.: The Periodization of Latin: An Old Question Revisited. In HAVERLING G. (ed.): *Latin Linguistics in the Early 21st Century: Acts of the 16th International Colloquium on Latin Linguistics, Uppsala, June 6th–11th, 2011*. Uppsala 2015, 640–652, 649–650.

stop *b* to bilabial [β] and then to the labiodental fricative [v] in every position (possibly except after nasals). Just this contrast will help us not only to detect a potential contact between the two languages in this very respect but also to understand the situation of the merger of *b* and *w* in the Vulgar Latin of the Imperial Era and around and after the fall of the Empire as it is evidenced by inscriptions.

4. EVALUATION OF THE RELEVANT LITERATURE

The most obvious feature of the relevant literature dealing with the problem of contactology to be noticed is that it discusses the Latin material in an undifferentiated way regarding both the chronological and the phonological aspect.

By an undifferentiated phonological and chronological approach I mean that the Latin merger has so far been discussed mostly by lumping together items from different positions in the word and from different periods.²⁴ The former one, i.e. an undifferentiated phonological approach and the negligence of different positions in the word can be traced back at best to inaccurate generalizations deduced from otherwise correct statements to be found in the literature on Vulgar Latin emphasizing that the spelling confusion between *b* and *v* was common in Latin inscriptions not only intervocally but also in word-initial position and after a consonant as well.²⁵ But such important details of some statements emphasizing an uneven geographical distribution of the phenomenon in word-initial and post-consonantal positions in sharp contrast to the geographically much more even distribution of the data in intervocalic position were left out of consideration.

An undifferentiated chronological approach to the relevant epigraphic data for this merger is, however, employed due to the peculiarities of the relevant literature, since by an obsolete habit of publishing masses of inscriptions undated in several epigraphic corpora,²⁶ scholars are compelled to treat linguistic phenomena without any chronological distribution (as Gratwick did) or to treat only the Christian inscriptions with an implicit later date in relation to the pagan ones (as Barbarino did it concerning all the Latin part of the Empire except Britain and the Balkans, i.e. Moesia and Thracia).²⁷

The use of a differentiated phonological and chronological approach in this issue is vital because a simple comparison of the territorial distribution of the data for this merger of *b* and *w* with the geographical spread of Hellenization in the Roman Empire is unsatisfactory as we shall see. For example Gratwick, who treated the inscriptional

²⁴ Cf. ADAMS (n. 5) 638.

²⁵ Such as in HERMAN: Vulgar Latin (n. 15) 45f: "In wide areas of the Empire – in Italy, the Balkans, North Africa; much less so in Hispania, and hardly at all in Gaul – spelling confusion between *b* and *u* (usually writing *b* instead of *u*, rather than the other way round) was common in word-initial position and after a consonant as well."

²⁶ E.g. the older volumes of *CIL* or the volumes of *ILN* (= GASCOU, J. et al.: *Inscriptions latines de la Narbonnaise* 1–, Paris 1985–) published recently.

²⁷ BARBARINO, J. L.: *The Evolution of the Latin /b/–/u/ Merger: A Quantitative and Comparative Analysis of the B–V Alternation in Latin Inscriptions*. Chapel Hill 1978.

material without any chronological and phonological differentiation, concludes on the B/V confusion as follows: “There is a significant local variation in its incidence. It is most frequent in those parts where we must reckon with Greek as a major language (especially Rome, Ostia, and environs; south Italy and the islands). In Gallia Cisalpina and in the whole of Transalpine Europe for <V> is markedly rare.” Gratwick then generalises as follows: “The variation is sufficiently well marked to imply a material difference between Transalpine Latin in general and the Latin of more directly Hellenized parts of the Empire.”²⁸

J. N. Adams, after (almost rightly) criticising the methodology used by Gratwick for establishing rates of B/V confusion,²⁹ drew attention to the fact that “the confusion is attested not only in southern Italy and at Rome, areas where its frequency might seem to fit in with the hypothesis, but also in Spain, northern Italy and central Italy, even if it is not as frequent there”, and he objected that by Gratwick “no account is taken of Africa. Africa (if one leaves aside Cyrenaica and Egypt) was not a predominantly Greek-speaking region but it is a place where the confusion of B and V is as well attested as anywhere, and from an early date.”³⁰

The studies of József Herman also warn against drawing far-reaching conclusions from a simple comparison of the spread of the relevant merger undifferentiated as for the positions in the word and the spread of Hellenization in the Roman world. As it is clearly visible from a map in his study on the territorial differentiation of Latin published in 1985, the B/V confusions are frequent not only in areas strongly influenced by Hellenization like Southern Italy and Rome, or in the vicinity of Hellenized territories like Dalmatia as the northern neighbour of Macedonia, but also in areas which were not affected by Hellenization at all like Northern Italy.³¹

The geographical approach must consequently be supplemented first of all by a more differentiated phonological approach based on the contrast between a general fricativisation in Greek and a limited, i.e. merely intervocally general fricativisation in Latin as for the same sound change [b] > [β]. Accordingly, if a prevalence of the areas under Greek influence can be established as for the word-initial and post-consonantal merger in Latin, we are entitled to assume a Greek influence upon the correspondent Latin sound change. On the other hand, a chronological differentiation of the relevant data is also relevant for detecting a potential Greek influence by the division of the material into at least two periods: an early period of the 1st–3rd centuries and a later period of the 4th–6th/7th centuries – considering the long time span of ancient times. This chronological division seems to be highly relevant if we want to apply a historical linguistic consideration for the assumed Greek influence, since the later the merger occurred and spread, the more probable it is due to the inner developments of Latin rather than to any Greek influence.

²⁸ GRATWICK (n. 4) 25 and 32.

²⁹ ADAMS (n. 5) 629.

³⁰ ADAMS (n. 5) 665.

³¹ HERMAN, J.: *La différenciation territoriale du latin et la formation des langues romanes* (1985). In HERMAN, J.: *Du latin aux langues romanes. Études de linguistique historique*. Réunion. S. Kiss. Tübingen 1990, 62–92.

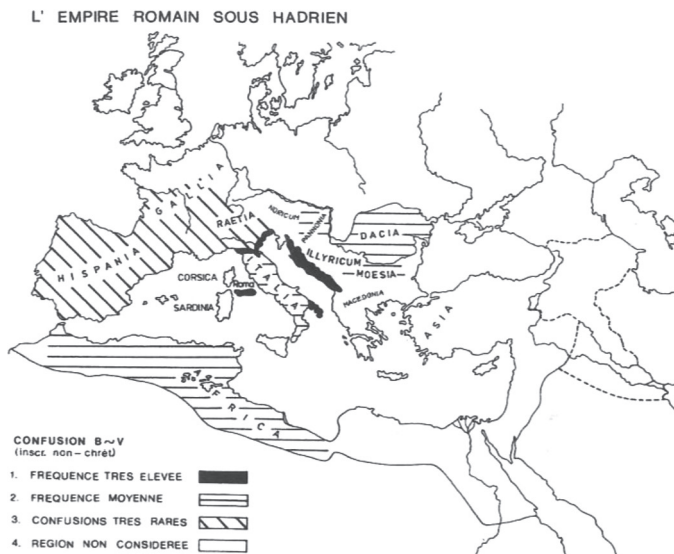


Fig. 1.

HERMAN: La différenciation territoriale (n. 31): Figure III: general frequency of B/V confusions according to the non-Christian inscriptions

If we consider the adequacy and relevance of the related literature concerning the requirements outlined above, we can quickly realize that relevant studies are somehow more or less defective: either there is no chronological differentiation at all, or there is no phonological differentiation according to the positions in the word.

For example, the only monograph on the Latin merger of *b* and *w*, i.e. that of Barbarino 1978, is based in essence on a representative collection of Latin Christian inscriptions (i.e. on Diehl's *ILCV*)³² and as such it can be used only for the analysis of the later period, and not at all for the early period vital for this issue. At the same time, if we take a look at the first chart summarizing the results of Barbarino's research, we can notice a prevalence of the merger in the city of Rome (37%) and Southern Italy (30%), a notable frequency is to be recorded for Africa (19%) and a considerable one in Hispania Citerior alias Tarraconensis (9%), then less and less frequencies in Middle Italy (8.5%), Northern Italy (8%), Dalmatia (7.5%) and Gallia Lugdunensis (6%) and a scarcity in the remaining areas (Lusitania 5%, Gallia Narbonensis 3.5%, Baetica 3%, Balkans 1.5%).

However, it has to be noted that Barbarino's methodology for measuring frequency is a very questionable one, because the rates of the relevant misspellings for this *b/v* merger are measured not in relation to misspellings of other types (e.g. to the other consonantal faults or something else) but to their correspondent correct forms.

³² *ILCV*=DIEHL, E. : *Inscriptiones Latinae Christianae Veteres* 1–4. Berlin 1925–1967.

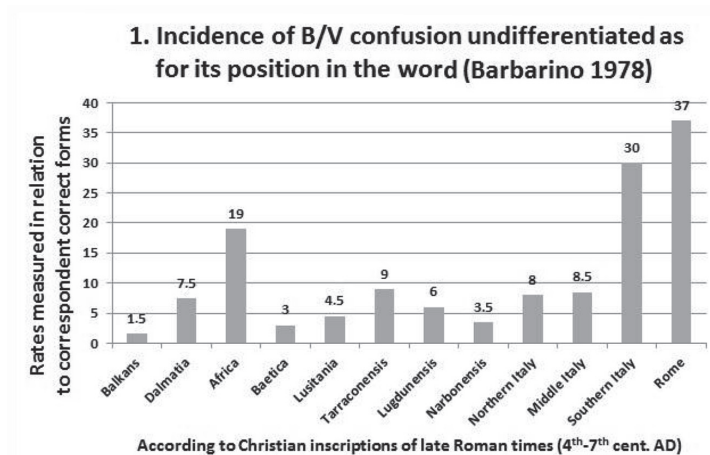


Chart 1.

This way his rates may misrepresent the linguistic reality by involving extra-linguistic, i.e. cultural factors (namely that of language correctness).³³

Fortunately enough, Barbarino published the absolute figures for B/V confusions also differentiating concerning their positions in the word. This way the issue considered here can be tested with his data as displayed on Chart 2 (data sets with less than 10 items, which may or may not display the linguistic reality properly, are excluded from the charts used here and later on in the survey).

Based on Chart 2 it can be stated that as for both, i.e. word-initial (WI) and post-consonantal (PC) confusions, which are highly relevant for evidencing a potential Greek influence, Rome is again in the first place with 65% (WI 62%+PC 3%) followed again by Southern Italy in the second with 58% (WI 54%+PC 5%), and Africa in the third with 55% (WI 41%+PC 14%), Dalmatia in the fourth position with 47% (WI 36%+11%), Middle Italy in the fifth with 39% (WI 32%+PC 7%), Northern Italy in the sixth with 38% (WI 29%+PC 9%), Hispania Citerior alias Tarraconensis is seventh with 35% (WI 21%+14%), Gallia Narbonensis is in the eighth position with 27% (WI 27%+PC 0%) and Gallia Lugdunensis is the last, i.e. the ninth with 12% (WI 6%+PC 6%).

Based on Barbarino's data on the word-initial and post-consonantal positions, a geographical distribution of incidence can be established. This fits in with the theory of Greek influence quite well, inasmuch as the relevant confusion is observed with the highest rate at places with strong Greek (substrate-) influence like in the city of Rome and in Southern Italy (i.e. in the former Magna Graecia), then with a considerable rate

³³ As for methodology, see ADAMIK, B.: In Search of the Regional Diversification of Latin: Some Methodological Considerations in Employing the Inscriptional Evidence. In BIVILLE, FR. et al. (eds.): *Latin vulgaire – latin tardif IX. Actes du IX^e colloque international sur le latin vulgaire et tardif*, Lyon, 6–9 septembre 2009. Lyon 2012, 123–139.

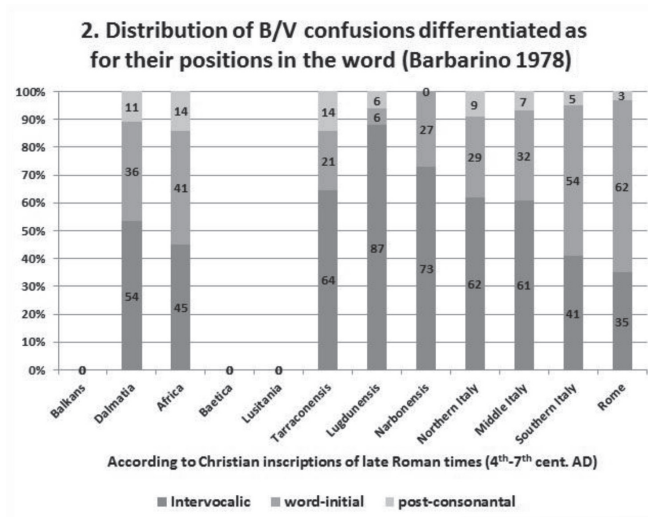


Chart 2.

in areas like the so-called Latin (i.e. Western) Africa adjacent to Greek (i.e. Eastern) Africa or in Dalmatia adjacent to Greek Macedonia. The farther the relevant area lies from the Hellenized part of the Empire, the lower the rate of B/V confusion is.

Similar conclusions can be drawn from a study of József Herman from 1965, which published data for a general distribution of the B/V confusion undifferentiated as for its position in the word according to a reliable methodology by measuring the rates of the relevant misspellings for this *b/v* merger in relation to all other phonological misspellings.³⁴ As displayed in Chart 3, concerning Herman's survey, Southern Italy is in the first place with 27%, the city of Rome in the second with 24%, Dalmatia in the third with 17%, Hispania got the fourth position with 10%, Northern Italy the fifth with 6%, and Southern Gaul (Vienna and Lugdunum) the last, i.e. the sixth with 3%.

Herman also published the absolute figures for B/V confusions differentiated according to their position in the word. Here the figures for word-initial and post-consonantal positions are totalized and contrasted with the intervocalic ones, as displayed on Chart 4. His procedure does not hinder us to involve his data in the present issue, since we regard exactly such totalized figures of the word-initial and post-consonantal positions as relevant for detecting a potential Greek influence on the merger of *b* and *w* in Latin.

According to Chart 4, Southern Italy is again the first with 49%, the city of Rome is the second with 46%, Dalmatia is the third with 35%, Northern Italy is the fourth with 31%, Hispania is the fifth with 27%, and Southern Gaul is the sixth and last with 0% (while it could be left out of consideration because of its very low figure of 8 items

³⁴ HERMAN, J. : Aspects de la différenciation territoriale du latin sous l'Empire (1965). In HERMAN: *Du latin aux langues romanes* (n. 31) 10–28.

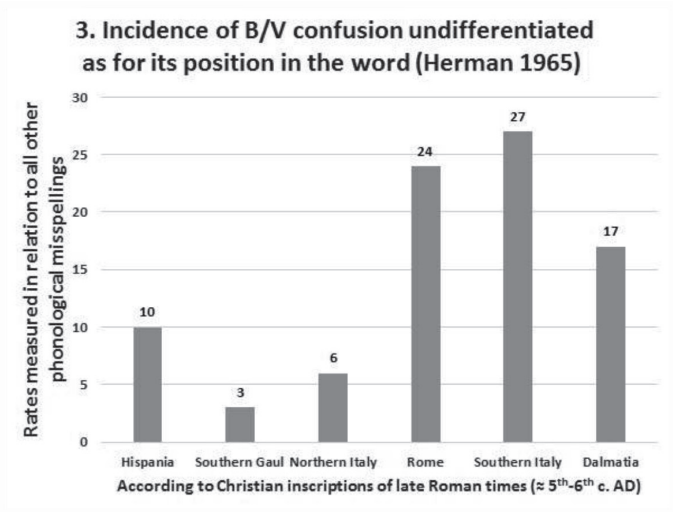


Chart 3.

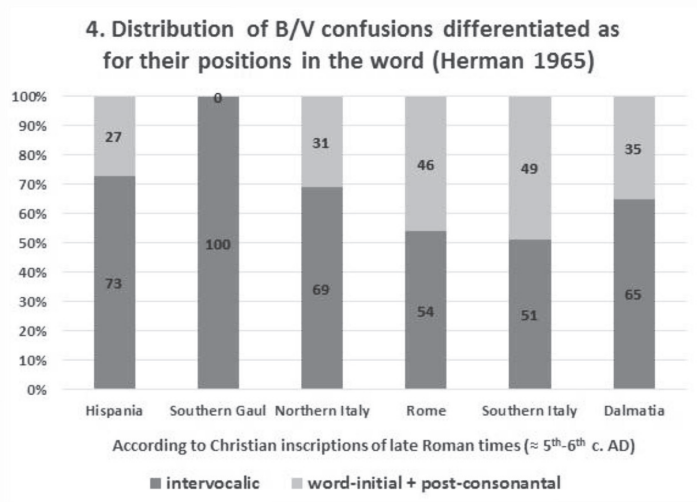


Chart 4.

and thus remaining under the exclusion limit of less than 10 items as defined above; however, it is displayed in the chart nevertheless because of its potential representativity as containing intervocalic items only). Thus the ranking of the relevant areas differentiated according to the position in the word is nearly the same as the undifferentiated one displayed on Chart 3, with the difference that Hispania switched position with Northern Italy (4 ↔ 5). The most conspicuous result of Herman’s survey – at least in comparison to Barbarino’s – is that Southern Italy ranked first instead of the city

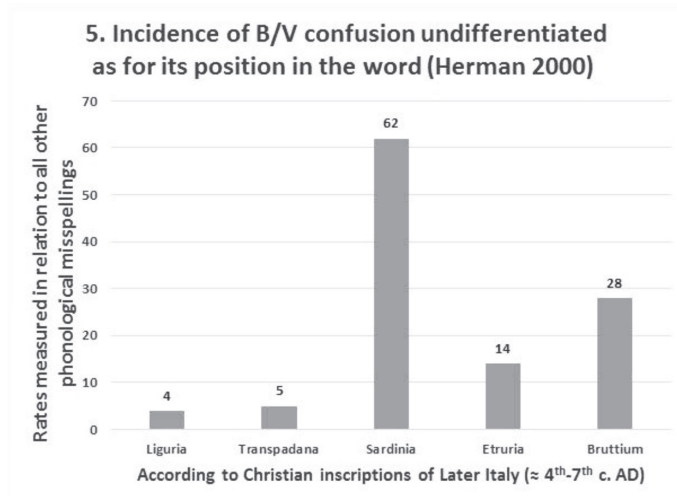


Chart 5.

of Rome as in Barbarino's survey, which can be interpreted as a further argument in favour of the theory of Greek influence.

The relevant pieces of research of both Barbarino and Herman inform only about Christian inscriptions, i.e. those from the later period. This is a problem which becomes even more serious if we also consider the relevant results of a study of Herman published on the phonology of the Christian inscriptions of Later Italy in 2000, as displayed in Chart 5.³⁵

In the five areas of Later Italy considered by Herman in his analysis of the incidence of B/V confusions as measured in relation to all phonological faults, not Bruttium at Lucania (i.e. the third Augustan region of Italy) lying in Southern Italy, i.e. in the former Magna Graecia was the first with 28%, but Sardinia, with an overwhelming ratio of 62%! Sardinia, to the best of our knowledge, never belonged to any significant sphere of the influence of Hellenization despite the fact that some Greek colonies, as e.g. an Olbia and a Neapolis were founded on the island due to the waves of colonization processes reaching also Sardinia in the archaic age.

The incidence of B/V confusions extracted from the Christian inscriptions of late Roman times must be treated very carefully as for evidencing a potential Greek influence on the Latin merger, since, as mentioned above, a late incidence and spread of the merger might be traced back to inner Latin developments rather than to any Greek influence – at least theoretically. This assumption is now evidenced by the chronological distribution of the Sardinian data for B/V confusions. From the 45 occurrences recorded in our LLDB-database extracted from the Sardinian inscriptions edited in

³⁵ HERMAN, J.: Differenze territoriali nel latino parlato dell'Italia tardo-imperiale: un contributo preliminare. In HERMAN, J. – MARINETTI, A. (eds.): *La preistoria dell'Italiano. Atti della Tavola Rotonda di Linguistica Storica, Università Ca' Foscari di Venezia 11–13 giugno 1998*. Tübingen 2000, 123–135.

ILSard,³⁶ only 8 items (18%) belong to the early period of the 1st–3rd centuries AD and all other 37 items (82%) can be listed in the later period of the 4th–7th centuries AD. Though *ILSard* corpus is not too extensive, containing some 380 inscriptions supplementing the corpus of *CIL*, the conclusions to be drawn from it must be relevant if correlated with those of the study of Lupinu based on all Sardinian inscriptions:³⁷ her data sets show that the B/V confusion appears in the 1st–2nd centuries AD, becomes more frequent in the 3rd century and then overwhelmingly frequent in the Christian period. More exact conclusions can be formulated only after all the Sardinian material will be recorded in our Database. What is more, in Africa Proconsularis all 96 dated occurrences recorded to date in our Database (from the corpora of *ILTun*, *IRT* and *ILAlg*) can be listed in the later period of the 4th–7th centuries AD.³⁸

At this point we could even finish our survey with the conclusion that a Greek influence on the merger concerned here may be considered probable especially as for the word-initial and post-consonantal positions based on the geographical distribution of the relevant data fitting in quite well with the spread of Hellenization in the Roman Empire. However, the cases of Sardinia and Africa Proconsularis remind us that such a conclusion would be unsafe with regard to the late chronology of the data sets used in the relevant literature because, as we have seen, the later incidence of this confusion can be traced back to inner Latin developments rather than to any Greek influence.

5. INVOLVING A PHONO-SYNTACTIC APPROACH IN THE PROBLEM OF GREEK INFLUENCE

Beyond the practical necessity for a new survey of the issue considered here, i.e. the need for now including also the material of the early Imperial period, of the 1st–3rd centuries AD neglected so far, other theoretical considerations suggest we involve a new approach which might contribute to the further clarification of the problem of Greek influence in a relevant way.

It is possible and even probable that a part of the word-initial B/V confusions, namely those occurring after a word ending with a vowel, are still to be regarded as of the Latin type (e.g. FRATRI VENE MERENTI for *fratri bene merenti* in *CIL* 6, 9886) and thus excluded from the group relevant for evidencing the Greek influence on the Latin merger. Some considerations suggest we assume that in Vulgar Latin the intervocalic merger of *b* and *w* into a [β] might have operated across word boundaries, i.e. affected the intervocalic positions emerging between juxtaposed words as well, i.e. a *fratri bene merenti* might have been realized according to external sandhi, i.e.

³⁶ According to the status of the Database on 01.03.2016. *ILSard*=SOTGIU, G.: *Iscrizioni latine della Sardegna*. Padua 1961.

³⁷ LUPINU, G.: *Latino epigrafico della Sardegna. Aspetti fonetici*. Nuoro 2000, 49–53.

³⁸ According to the status of the Database on 01.06.2016. *ILTun*=MERLIN, A.: *Inscriptions latines de la Tunisie*. Paris 1944, *IRT*=REYNOLDS, J. M. – WARD-PERKINS, J. B.: *The Inscriptions of Roman Tripolitania*. Rome 1952 (enhanced electronic reissue 2009 by G. BODARD – Ch. ROUECHÉ, cf. <http://inslib.kcl.ac.uk/irt2009/>) and *ILAlg*=GSELL, S. et al.: *Inscriptions latines d'Algérie 1–*. Paris 1922–.

phono-syntactic rules as [*fratri βene merenti*], similarly to what happened in some Romance languages.³⁹ For example in Spanish, this phenomenon can be exemplified by the word *banca*, which is pronounced [ˈbaŋka] in absolute word-initial position or after a pausa, but as [la ˈβaŋka] after the article *la*, i.e. in intervocalic position according to external sandhi rules. Since in Spanish *b* and *v* are not separate phonemes but merely allophones, the distribution of their realization concerning the position in the word also extends to the *v*, and thus *vaca* is pronounced [ˈbaka], but together with the article as [la ˈβaka].⁴⁰

As for the present analysis involving the phono-syntactic approach outlined above, all this means that we have to select and filter the relevant data more precisely than it has been done so far. Those items for word-initial B/V confusions regarded as of the intervocalic type concerning phono-syntactic rules are to be excluded from the survey, and only the word-initial confusions of the non-intervocalic type, i.e. confusions occurring after a consonant (such as CILIVS VONIFATIVS for *Cilius Bonifatius*, LLDB-42356 or INFELIX BIOCONTIA for *infelix Vocontia*, LLDB-20268) or in absolute word initial (i.e. sentence initial) positions (like IVALNEV[M] for *balneum*, LLDB-18197, or IBALERIA for *Valeria*, LLDB-36792) are to be included in the analysis as potentially influenced by the Greek language.

Such an analysis can now be realized by the Computerized Historical Linguistic Database of Latin Inscriptions of the Imperial Age, where also the phono-syntactic approach can be considered by coding those relevant cases of word-initial confusions again by the correspondent alternative code of intervocalic confusions like QVI BIXIT for *qui vixit* (LLDB-14279) coded as v- > B but alternatively also as (voc.)-v-(voc.) > B, and they can be separated from cases like ET BIXIT for *et vixit* (LLDB-36052) coded merely as v- > B.

In the following paragraphs we present the results of our analysis as for the potential Greek influence by involving the phono-syntactic point of view based on the material from those areas where we have a comparatively large data set recorded in the LLDB Database. Accordingly, we considered 18 provinces and the City of Rome where we have at least 700 or more recorded data forms of the relevant phenomena.⁴¹

³⁹ Cf. TAMÁS (n. 17) 61, VÄÄNÄNEN (n. 22) 50 and WEINRICH (n. 19) 66–67.

⁴⁰ Cf. TAMÁS (n. 17) 61–62 and BANFI (n. 17) 185: “Tale instabilità fonetica si ritrova nelle lingue romanze: se il toscano (e, quindi l’italiano) e il francese distinguono oggi /v-/ da /b-/ (it. *vino*, fr. *vin* / it. *bocca*, fr. *bouche* rispettivamente derivati da VĪNU, BŪCCA), in altre lingue romanze i due fonemi sono normalmente confusi: così nello spagnolo (*vino*, *boca*: /b/ all’inizio di parola; con allofono [β] all’interno di parola e di frase), nel catalano (*vi*, *boca*: /b/), nel sardo (*binu*, *bukka*: /b/), nei dialetti italo-meridionali (*vinu*, *vukka*: /v/). Nello spagn. a. frequente è la presenza del grafema in inizio di parola in forme quali *bivir*, *bibdas* per *viudas*; *biltança* (< VĪLITANTIA); *bistades* (< *vestir*); *bolber* per *volver*; *boz* per *voz*; *buelta* per *vuelta*.”

⁴¹ The data forms referred to in this survey represent the status of the Database on 31.01.2016. They may be retrieved with the Extended Search module of the LLDB Database (http://lldb.elte.hu/admin/search_2.php) using the settings and restrictions outlined in the following footnotes.

Charts 6–9 display the distribution of B/V confusions according to their positions in the word.⁴² First we chronologically divided all the material into an early period (ca. before 300) as displayed in Charts 6–7, and a later period (ca. after 300) as displayed in Charts 8–9.⁴³ Within each period we display the data first disregarding the phono-syntactic approach as displayed in Charts 6 and 8, then with regard to it as in Charts 7 and 9. It has to be emphasized that there are big differences in the incidence of the phenomenon considered here between the 19 territorial units included in our analysis, so merely four areas are to be compared for both their subsequent early and later periods, as we shall see. Moreover, data sets with less than 10 items, which may or may not display the linguistic reality properly, are again excluded from the charts used here in the survey.

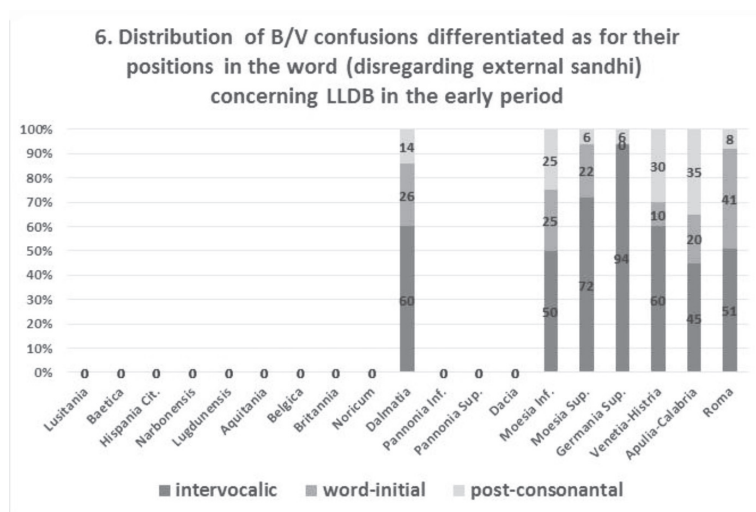


Chart 6.

⁴² In the Database the B/V confusions of intervocalic types are coded either by (voc.)-b-(voc.) > V or (voc.)-v-(voc.) > B, those of word-initial types either by b- > V or by v- > B, and those of post-consonantal types alternatively by the following ones: -sb- > SV, -rb- > RV, -rv- > RB, -lv- > LB, -nv- > NB, -mv- > MB, -dv- > DB. In this investigation we excluded data forms pertaining to inscriptions imported to each region (thus not created locally) and data forms which might be regarded as correct and were therefore labelled as *'fortasse recte'* in the Database. Moreover, for establishing general frequency of B/V confusions in relation to all other consonantal faults concerning the 19 territorial units considered here, as displayed in chart 10 below, we excluded data forms with a morphosyntactic alternative code (labelled as 'Nominalia', 'Verbalia', or 'Syntactica' etc. in the Database), and considered only those with phonetic main codes. We also excluded data forms with an alternative code labelled as 'Vocalismus' or as a purely orthographic phenomena (i.e. the codes x > SX / CS / XS / XSS / XX, c > K, k > C and g > C).

⁴³ In order to do so, we have excluded data forms with a datation not suitable for our purposes, i.e. with missing dates or with dates not fitting the current division (e.g. those dated to 201–400 AD). In the case of Venetia et Histria, where the data were dated to 27 BC – 312 AD, the data were included in the profile of the early period (1–300 AD).

As for the potential Greek influence, the ranking of the relevant areas will be established by comparing the rates for intervocalic B/V confusions (considered here as of the Latin type) with the totalized rates of the B/V confusions in word-initial and post-consonantal positions (considered here as of the Greek type) as displayed in the relevant tables below. In the first step, we disregard the phono-syntactic point of view (as in Chart 6 and 8) which, however, will be taken into consideration in the second turn (as in Chart 7 and 9). This means that the rates for the word-initial confusions of the intervocalic type according to phono-syntactic or external sandhi rules will be added to those of the confusions of the word-internal intervocalic type and displayed accumulated or totalized.

If the figures for word-initial (WI) and post-consonantal (PC) confusions are lumped together and measured against those for intervocalic items, the following rank-

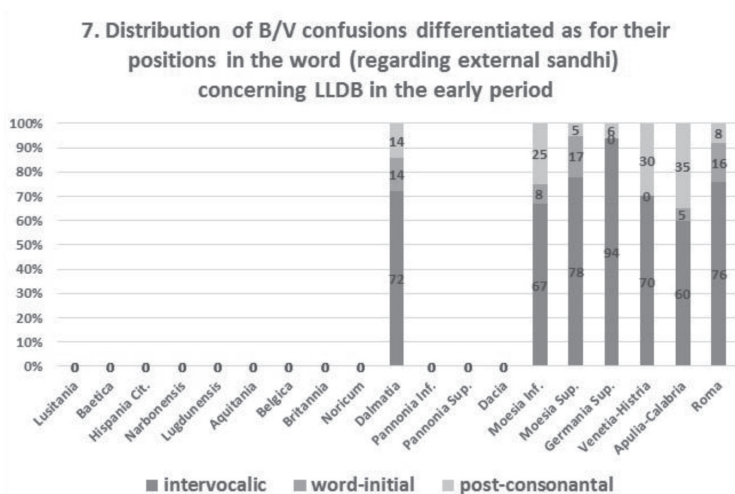


Chart 7.

ing of areas can be established for the early period: the first is Apulia et Calabria with (WI 20%+PC 35%=) 55% of confusions of the so-called Greek type, the second is Moesia Inferior with (WI 25%+PC 25%=) 50%, the third is Rome with (WI 41%+PC 8%=) 49%, and the fourth and fifth place are held by Dalmatia with (WI 26%+PC 14%=) 40% and Venetia et Histria again with (WI 10%+PC 30%=) 40%, while Moesia Superior got the sixth position with (WI 22%+PC 6%=) 28% and Germania Superior the seventh and last position with (WI 0%+PC 6%=) 6%.⁴⁴

⁴⁴ The absolute figures corresponding to the percentages displayed on Chart 6 in distribution concerning intervocalic, word-initial and post-consonantal types of B/V confusions (put between brackets) are as follows: Dalmatia (21) 60%+(9) 26%+(5) 14%=(35) 100%; Moesia Inferior (6) 50%+(3) 25%+(3) 25%=(12) 100%; Moesia Superior (13) 72%+(4) 22%+(1) 6%=(18) 100%; Germania Superior (15) 94%+(0) 0%+(1) 6%=(16) 100%; Venetia et Histria (6) 60%+(1) 10%+(3) 30%=(10) 100%; Apulia et Calabria (9) 45%+(4) 20%+(7) 35%=(20) 100%; Rome (42) 51%+(34) 41%+(7) 8%=(83) 100%.

In the second step, i.e. by separating the figures for word-initial confusions of the intervocalic type from the word-initial confusions of the non-intervocalic type and adding them to the intervocalic confusions occurring word-internally, the ranking of the relevant areas could be established as follows: Apulia et Calabria (AC) is again in the first place with (WI 5%+PC 35%=) 40%; Moesia Inferior (MI) is again in the second with (WI 8%+PC 25%=) 33%, Venetia et Histria (VH) in the third with (WI 0%+PC 30%=) 30%, Dalmatia (DA) in the fourth with (WI 14%+PC 14%=) 28%, Rome (RO) is the fifth with (WI 8%+PC 16%=) 24%, the sixth is Moesia Superior (MS) with 22% (=WI 17%+PC 5%) and the seventh and last is Germania Superior (GS) with a low 6% (=WI 0%+PC 6%).⁴⁵ In the next table we can summarize the ranking of the relevant areas according to the two kinds of tests applied in Charts 6 and 7 as follows:

Table 1

Chart 6	1. AC 55%	2. MI 50%	3. RO 49%	4. DA 40%	5. <i>VH</i> 40%	6. MS 28%	7. GS 6%
Chart 7	1. AC 40%	2. MI 33%	3. <i>VH</i> 30%	4. DA 28%	5. RO 24%	6. MS 22%	7. GS 6%

From these Charts 6 and 7 and Table 1, the conclusion can be drawn that in the early period vital from a contactological point of view the confusions of the so-called Greek type prevailed according to both tests in areas of a strong Greek influence like in Apulia et Calabria in Southern Italy (i.e. in the former Magna Graecia) with 55% and 40%, respectively, and Moesia Inferior (never mentioned in this context so far) including the former *Ripa Thraciae* together with its several Greek cities (of the *polis* type) with 50% and 33%, respectively.

Against the theory of Greek influence, however, one could refer to the remarkable position of Venetia et Histria in Northern Italy. It is an area which was never Hellenized, and which yet ranked in the fifth place with 40% according to the first test and in the third position with 30% according to the second test. However, Venetia et Histria stands just at the limit of exclusion because of its very low total number 10 for all kinds of B/V confusion and is perhaps to be excluded from the survey (therefore the relevant data are displayed italicized in the table above).

If we leave Venetia et Histria out of consideration because of its very low attestation of the confusion, the ranking started by areas under remarkable Greek influence as Apulia et Calabria and Moesia Inferior continues with other areas of considerable Greek impact like the city of Rome (with 49% and 24%), and Dalmatia (with 40% and 28%, respectively) as the northern neighbour of Hellenized Macedonia. Both are areas

⁴⁵ The absolute figures corresponding to the percentages displayed on Chart 7 in distribution concerning intervocalic, word-initial and post-consonantal types of B/V confusions (put between brackets) are as follows: Dalmatia (25) 72%+(5) 14%+(5) 14%=(35) 100%; Moesia Inferior (8) 67%+(1) 8%+(3) 25%=(12) 100%; Moesia Superior (14) 78%+(3) 17%+(1) 5%=(18) 100%, Germania Superior (15) 94%+(0) 0%+(1) 6%=(16) 100%; Venetia et Histria (7) 70%+(0) 0%+(3) 30%=(10) 100%; Apulia et Calabria (12) 60%+(1) 5%+(7) 35%=(20) 100%; Rome (63) 76%+(13) 16%+(7) 8%=(83) 100%.

with a very rich attestation of the confusion, standing in the third and fourth position alternately according to the two tests. The remarkable data concerning the sixth-ranking Moesia Superior (with 28% and 22%, respectively) is understandable with regard to its geographical position in the neighbourhood of Hellenized Macedonia and Thracia. It is also clear why Germania Superior, situated far from any Hellenized areas, stands in the last place with its low rate of 6% concerning both tests. To sum it up, the territorial distribution of the relevant data, i.e. of the confusions of the so-called Greek type fits quite well with the theory of Greek influence as for the early period.

Now we might turn to the later period, i.e. the age of Christian inscriptions and to its data displayed in Charts 8 and 9.

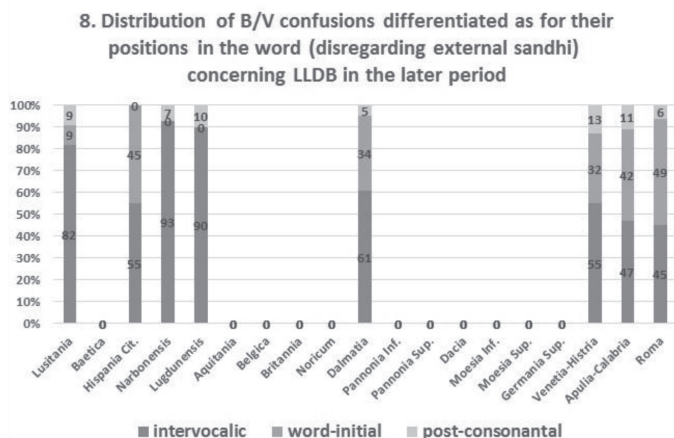


Chart 8.

As displayed in Chart 8, where, by disregarding the phono-syntactic point of view, we lumped together the rates for word-initial and post-consonantal confusions and measure them against those of intervocalic items, the following ranking of areas can be established for the later period: Rome got the first place with (WI 49%+PC 6%=) 55% for confusions of the so-called Greek type, Apulia et Calabria got the second one with (WI 42%+PC 11%=) 53%, Hispania Citerior with (WI 45%+PC 0%=) 45% and Venetia et Histria with again (WI 32%+PC 13%=) 45% are in the third and fourth place, Dalmatia got the fifth position with (WI 34%+PC 5%=) 39%, Lusitania is in the sixth place with (WI 9%+PC 9%=) 18%, the seventh is Lugdunensis with (WI 0%+PC 10%=) 10% and the eighth and last is Narbonensis with (WI 0%+PC 7%=) 7%.⁴⁶

⁴⁶ The absolute figures corresponding to the percentages displayed on Chart 8 in distribution concerning intervocalic, word-initial and post-consonantal types of B/V confusions (put between brackets) are as follows: Lusitania (9) 82%+(1) 9%+(1) 9%=(11) 100%; Hispania Citerior (6) 55%+(5) 45%+(0) 0%=(11) 100%; Narbonensis (13) 93%+(0) 0%+(7) 1%=(14) 100%; Lugdunensis (18) 90%+(0) 0%+(2) 10%=(20) 100%; Dalmatia (37) 61%+(21) 34%+(3) 5%=(61) 100%; Venetia et Histria (26) 55%+(15) 32%+(6) 13%=(47) 100%; Apulia et Calabria (25) 47%+(22) 42%+(6) 11%=(53) 100%; Rome (75) 45%+(82) 49%+(10) 6%=(167) 100%.

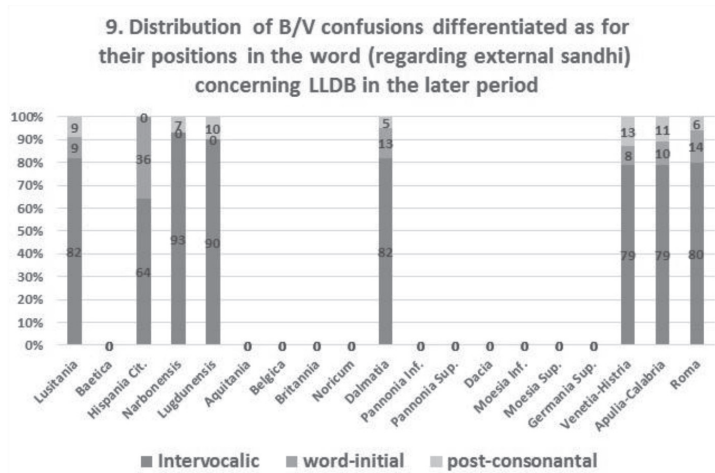


Chart 9.

In the second step, i.e. by separating the figures for word-initial confusions of the intervocalic type from the word-initial confusions of the non-intervocalic type and adding them to the intervocalic confusions occurring word-internally, the ranking of the relevant areas changes in the later period as follows: first is Hispania Citerior (HC) with 36% (=WI 36%+PC 0%), Apulia et Calabria (AC) in Southern Italy with (WI 10%+PC 11%=) 21% and Venetia et Histria (VH) in Northern Italy with again (WI 8%+PC 13%=) 21% are in the second and third place, Rome (RO) is the fourth with (WI 14%+PC 6%=) 20%, Dalmatia (DA) with 18% (=WI 13%+PC 5%) and Lusitania (LUS) again with 18% (=WI 9%+PC 9%) are in the fifth and sixth position, Lugdunensis (LUG) is again in the seventh position with (WI 0%+PC 10%=) 10% and the eighth and last is again Narbonensis (NA) with 7% (=WI 0%+PC 7%).⁴⁷ In the next table we can summarize the ranking of the relevant areas according to the two kinds of test applied in Charts 8 and 9 as follows:

Table 2

Chart 8	1. RO 55%	2. AC 53%	3. HC 45%	4. VH 45%	5. DA 39%	6. LUS 16%	7. LUG 10%	8. NA 7%
Chart 9	1. HC 36%	2. AC 21%	3. VH 21%	4. RO 20%	5. DA 18%	6. LUS 18%	7. LUG 10%	8. NA 7%

⁴⁷ The absolute figures corresponding to the percentages displayed on Chart 9 in distribution concerning intervocalic, word-initial and post-consonantal types of B/V confusions (put between brackets) are as follows: Lusitania (9) 82%+(1) 9%+(1) 9%=(11) 100%; Hispania Citerior (7) 64%+(4) 36%+(0) 0%=(11) 100%; Narbonensis (13) 93%+(0) 0%+(7) 1%=(14) 100%, Lugdunensis (18) 90%+(0) 0%+(2) 10%=(20) 100%; Dalmatia (50) 82%+(8) 13%+(3) 5%=(61) 100%; Venetia et Histria (37) 79%+(4) 8%+(6) 13%=(47) 100%; Apulia et Calabria (42) 79%+(5) 10%+(6) 11%=(53) 100%; Rome (133) 80%+(24) 14%+(10) 6%=(167) 100%.

As for the relevant areas, a kind of settlement or balance evolving in the later period has to be noticed between the areas formerly Hellenized and those never Hellenized, concerning both approaches, i.e. by excluding and also by including phono-syntactic points of view. The prominent position of Hispania Citerior advancing from the third position in the first test up to the first position in the second test is conspicuous. It is also remarkable how Lusitania, which had only 16% in the first test, caught up with Dalmatia in the second (as Dalmatia had 39% in the first test while both provinces had 18% in the second). But caution is warranted for both Hispanian provinces since their total number of 11 items is just above 10, the limit of exclusion.

The same settlement or balance can be recorded also within Italy, where Venetia et Histria in Northern Italy, nearing (with its 45%) Apulia et Calabria (with 53%) in the first test, caught up with it with the same 21% in the second test. Beyond the obvious conservatism of the provinces of Gaul, i.e. Lugdunensis (with 10%) and Narbonensis (with 7%), where word-initial confusions are lacking, the radical change in the position of Rome has to be noticed. Though Rome ranked first concerning the first test disregarding the external sandhi rules, it was the fourth in the second test with regard to the external sandhi rules (1→4). Since Rome was forced back also as for the early period from its third place gained in the first test to the fifth place obtained in the second test (3→5), we may infer that the central role of Rome in initiating or forwarding linguistic changes must have been decisive first of all as for the spread of the intervocalic merger of *b* and *w* operating across word boundaries (namely here the 45% rate of intervocalic confusions operating within words increased up to 80% by integrating the 35% rate of those operating across word boundaries in the later period).

Similar conclusions can be drawn for the other areas of Italy considered and for Dalmatia, where the rates of intervocalic confusions operating within words considerably increased everywhere by integrating the corresponding rates of intervocalic confusions operating across word boundaries: as in Rome (45% > 80%) by 35%, so in Apulia et Calabria (47% > 79%) by 32%, in Venetia et Histria (55% > 79%) by 24% and in Dalmatia (61% > 82%) by 21%. Since in the early period the corresponding increase of rate was remarkably lower than in the later period, i.e. in Rome (51% > 76%) 25%, in Apulia et Calabria (45% > 60%) 15%, in Venetia et Histria (60% > 70%) 10%, and in Dalmatia (60% > 72%) 12%, from all this we might infer that in the later period the sound change considered here had already been separated or was being separated from its presumed Greek background and it was operating and spreading merely as an inner Latin process independently of any Greek influence. This way the sound change reached the state before the birth of Romance, which we presented in the first part of our paper as reconstructed from Romance.

Since only these last four areas have a relevant and comparable amount of data for both the early and the later period, another phenomenon has to be noticed. According to the first test, i.e. by disregarding the phono-syntactic aspect, the rate of word-initial confusions has considerably increased in all four areas by the later period if compared with the early period: in Venetia et Histria (10% > 32%) and in Apulia et Calabria (20% > 42%) by 22%, in Rome (41% > 49%) and Dalmatia (26% > 34%) by 8%. However, if we exclude the word-initial confusions which can be interpreted as

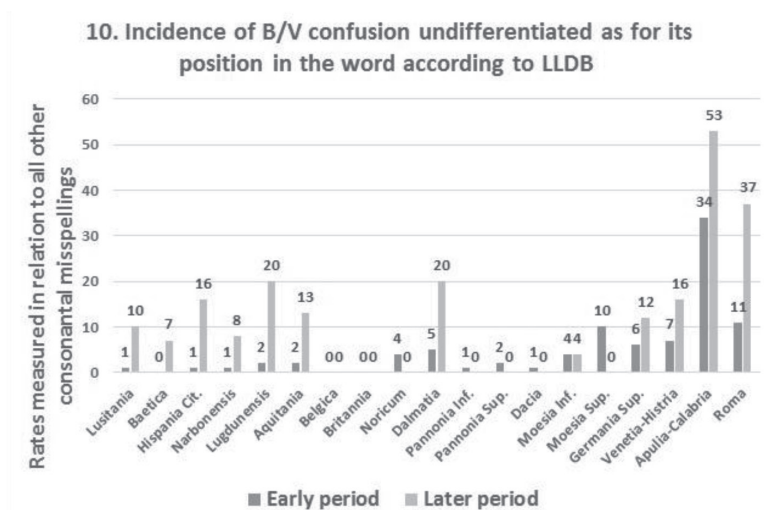


Chart 10.

intervocalic according to the sandhi rules in the second test, the picture outlined above changes as follows: in the later period as compared to the early one the rate of word-initial confusions decreased in Dalmatia (14% > 13%) by 1% and in Rome (16% > 14%) by 2%, but increased in Venetia et Histria (0% > 8%) by 8% and in Apulia et Calabria (5% > 10%) by 5%. As for Venetia et Histria, of course, we cannot tell if the increase is an actual one because of the low total number 10 of the data, which is on the limit of exclusion, so Venetia et Histria should rather be left out of consideration. Only the 5% increase recorded for Apulia et Calabria as an area Hellenized all along in Roman times remains on stage, a moderate increase which can, however, be spectacularly contrasted with the slight decrease by 2% and 1% recorded for Rome and Dalmatia, respectively. While the later increase in Southern Italy can probably be attributed to the influence of Greek, the later decrease in Rome and Dalmatia might advance the development of the majority of Romance languages by keeping *b* and *v* separate word initially.

6. FINAL CONCLUSIONS

As we have demonstrated above, a simple comparison of the territorial distribution of the undifferentiated data for the merger of *b* and *w* with the geographical spread of Hellenization in the Roman Empire is unsatisfactory, either for neglecting the different positions in the word, or for disregarding the necessary chronological differentiation, or for ignoring both these two vital aspects. Though by a chronological division into an early and a later phase a considerable number of coincidences is to be recorded, also within an undifferentiated phonological approach, between the spread of the relevant sound change and that of Hellenization for the early period as in the case of Apulia et

Calabria as displayed in Chart 10, such an undifferentiated method fails in cases like Venetia et Histria and Germania Superior. However, with the help of a differentiated phonological approach which considers not only the different positions in the word but involves also external sandhi phenomena operating across word boundaries, we believe we were able to evidence the influence of Greek at least for some areas and especially for the early period vital for the issue in question. Moreover, for the later period, we were able to separate processes which can be considered pure Latin developments rather than only an effect of Greek influence. This way Adams' statement⁴⁸ that "[t]he case of B and V has proved a happy hunting ground in this respect" can be regarded as valid, provided happy here means successful.

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⁴⁸ ADAMS (n. 5) 663.