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Inscriptions in stone, literacy in question: The confusion between <B> and <V> in inscriptions from Roman Africa

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ABSTRACT

In this paper, a quantitative and qualitative analysis is conducted on the <B>/<V> alternations found in the epigraphic texts from three representative subsets of Roman African inscriptions from both urban centres and more peripheral areas (1st century BCE – 7th century CE). The distribution of the confusion has been related to the dating and provenance place of the inscriptions and the level of literacy of those involved in their crafting. The results show a difference in the distribution of <B>/<V> confusions in the three areas examined, with a higher incidence in later inscriptions from *Sabratha*. Thus, it is discussed whether the different distribution of the <B>/<V> confusions observed in the different regions might be a cue for internal diatopic variation.

KEYWORDS

Latin linguistics, phonology, epigraphy, corpus linguistics, historical linguistics

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1. INTRODUCTION

Among the graphemic alternations attested in the epigraphic texts of the Roman Empire, the confusion between <B> and <V> is one of the most widespread phenomena. Occurrences of alternations such as *beni* for *ueni* or *uene* for *bene* are found in inscriptions, at least from the first century CE,[1] as well as in non-literary sources such as the Bu Njem ostraca and the Albertini tablets.[2] Such confusions are traditionally explained as being due to a fricativization of /w/ and, in general, to the partial merger of the Classical Latin bilabial voiced stop /b/ and the labiovelar semivowel /w/ into a bilabial fricative [β], which are represented in Latin script either with <B> or <V>.[3] This hypothesis seems to be confirmed also by the testimonies of ancient grammarians: see e.g. Velius Longus (Keil *Gramm. Lat.* VII 58. 17–19), speaking of the pronunciation of /w/ *cum aliqua adspiratione*, and later Priscianus (Keil *Gramm. Lat.* V 23. 9–10: *Apud nos quoque est inuenire, quod pro u consonante b ponitur*). Confusions between /b/ and /w/ are also attested in the *differentiae uerborum corpus*, i.e. lists of Latin lexical couples including homophones, where couples such as *labat*/*lauat*, *iubat*/*iuuat* (see e.g. the *Appendix Probi*) are found.[4] The confusion is the subject of Martyrius' treatise on orthography *De B muta et V uocali* (Keil *Gramm. Lat.* VII 165–199), mentioning couples such as *uis*/*bis*, *bos*/*uos*. Although the treaty refers primarily to orthographic issues, this testimony might hint at a confusion of /b/ and /w/.[5]

Focusing on epigraphic attestations, the analyses carried out on the topic show an unequal diffusion of the phenomenon through the Empire.[6] Interestingly, Africa seems to be especially targeted, as was shown by Joseph Louis Barbarino[7] in his examination of the Latin Christian inscriptions dating back mainly to the 3rd–7th century CE from Northern Africa, Britain, the Balkans, Dalmatia, Spain, Gaul, Rome, and Italy. In this study, the relative frequency of the confusions between <B> and <V> is calculated over the corresponding Classical spellings, i.e. the number of instances of <B> for Classical Latin /b/ and <V> for Classical Latin /w/ for each area. The results show a higher incidence of the merger in Rome (27%), Southern Italy (23%) and Africa (16%), with higher percentages than Gallia Narbonensis, Baetica, Britain and the Balkans, which display an error rate of less than 5%. Interestingly, these data seem also to be confirmed by non-literary sources from Africa: in both the Bu Njem ostraca and the Albertini tablets a high incidence of <B>/<V> confusions is attested.[8]

The causes of the higher incidence of these alternations in Roman Africa, however, cannot be determined at the time of writing. The main explanations provided in the literature for the

[1] Sturtevant (1920) 43; Adams (2013) 183.

[2] Adams (2007) 644 ff.

[3] Allen (1965) 41; Herman (2000) 38–39; Adams (2013) 183–185; (Adamik 2017a) 15.

[4] Mancini (2005) 148.

[5] Pugliarello (2006, 2011); De Paolis (2010).

[6] Herman (1965); Barbarino (1978); Adamik (2017a, 2017b); Herman (2000); Lupinu (2000); Tamponi (2019, 2022).

[7] Barbarino (1978).

[8] See Väänänen (1965) and the figures reported by Adams (2007) 643 ff.

different incidences of <B>/<V> confusions throughout the Empire, e.g. language contact, do not hold for Africa. Greek influence[9] cannot be assumed, since Africa was not a predominantly Greek-speaking area, to an extent that would justify the transfer of a phonetic feature of Greek into African Latin.[10] Also, the hypothesis of a 'Libyan' influence mentioned by Acquati[11] to explain the higher frequency of confusion in Africa is problematic. Indeed, Libyan is attested by inscriptional evidence (see the texts included in the *Recueil des Inscriptions libyques* by Chabot).[12] However, these sources do not allow for a reconstructing of its phonology, since they are either difficult to interpret or consist mainly of proper names and formulae.[13]

Acknowledging this problematic issue, however, we believe that the high number of <B>/<V> confusions found in North African sources still deserves special attention. However, a fine-grained analysis of the confusion found in the inscriptions from this province is not available at the time of writing. Barbarino's examination does examine the African area in detail, although variables such as internal diatopic variation within Roman Africa and literacy level are not assessed. Furthermore, Africa was not examined in the other investigations on the topic, i.e. Herman's analysis and Adamik's (since the province was not yet included in the *LLDB* database at that time) quoted above. For this reason, in the next section, we will examine three sets of representative inscriptions from Africa Proconsularis, and consider linguistic and extra-linguistic variables such as the lemmas involved, the dating, provenance place and text type of the inscriptions in our analysis.

2. THE CORPUS

Our corpus contains 835 dated inscriptions from Africa Proconsularis, for a total number of 15,945 tokens. The texts have been selected through an examination of the inscriptions available in the *Epigraphik Datenbank Clauss-Slaby* database (https://db.edcs.eu/epigr/hinweise/hinweis-it.html), which is the most comprehensive digital source of Latin inscriptions available at the time of writing. To perform a more accurate linguistic analysis, only dated inscriptions were selected: the dating was determined by consulting the available editions of the texts and the information included in other online databases, such as the Epigraphic Database Roma (http://www.edr-edr.it/default/index.php).[14] Several areas are included in our corpus. Firstly, we selected *Lepcis Magna* and *Theueste*, since they display a high epigraphic density and a comparable number of dated texts (ca. 250 inscriptions);[15] the colony of *Sabratha* was also included

[9]See recently Adamik (2017b).

[10]See Adams (2007) 665; Adamik (2017b).

[11]Acquati (1974); see also Lancel (1981) 281.

[12]Chabot (1940–1941).

[13]Millar (1968); Adams (2007) 685.

[14]The datings provided on the basis of linguistic criteria were excluded to avoid the danger of circular argumentation in linguistic analysis.

[15]*Carthago*, *Thugga* and *Ammaedara* were not included in our corpus: since they feature a considerably higher number of texts (more than 400 for *Carthago* and *Ammaedara* and almost 300 for *Thugga*), their inclusion would have caused data imbalance as for the provenance place of the texts.

given its prominence in the Roman Empire,[16] although it displays a lower number of texts (88; see below). Finally, to compare these data with those from cities with an inferior epigraphic density, we decided to select a set of close areas with at least 10 inscriptions available (Fig. 1). This group, henceforth labelled as 'other areas', comprises the following locations: *Uchi Maius*, *Mustis*, *Thuburbo Maius*, *Mactaris*, *Sufetula*, *Cillium*, *Talah*, *Aradi*, *Limisa* and *Mascilianae*.

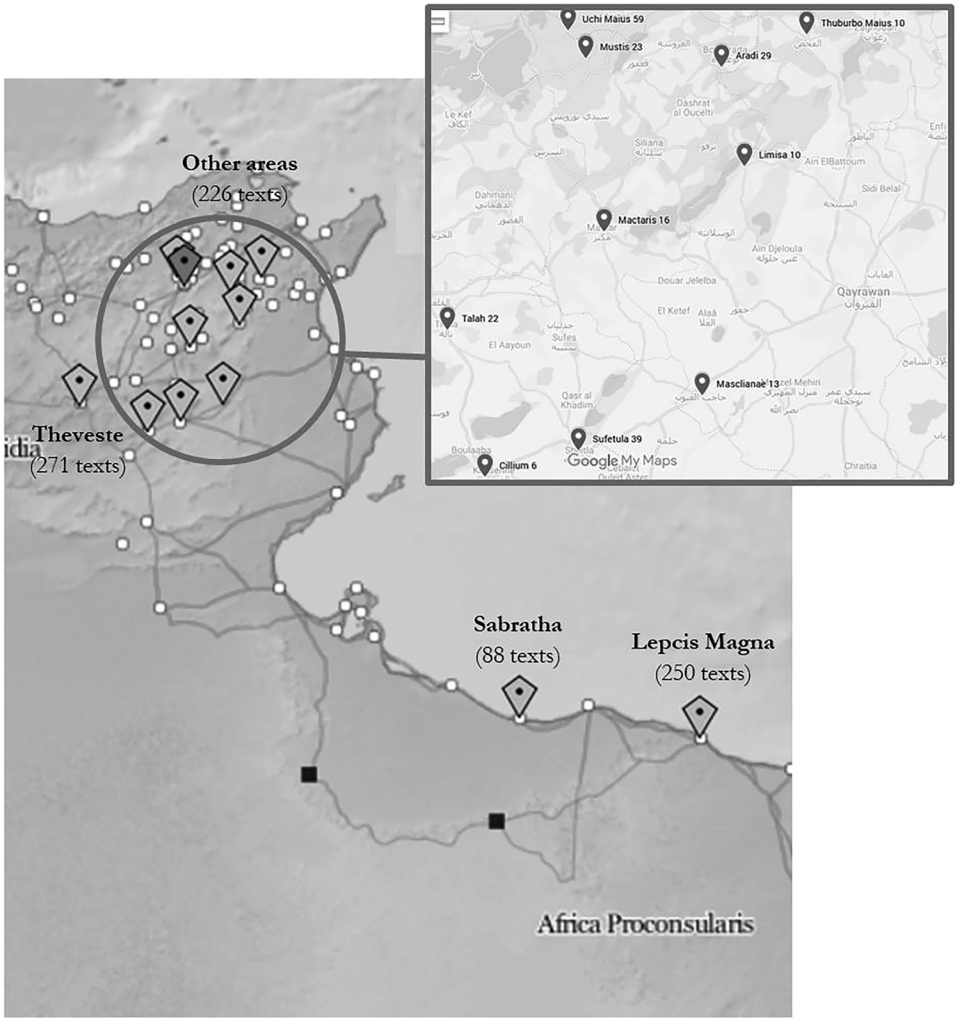

Fig. 1. Areas included in the corpus

[16]See e.g. Matthews (1957).

Providing more detail, the subset from *Lepcis Magna* contains 250 inscriptions (5,836 tokens). The texts date mainly from the 1st to the 7th century CE. However, the majority of them date back to the 1st–3rd century (187 texts, i.e. 75%). Several text types are available: funerary inscriptions, texts on public monuments, sacred texts and a small number of *instrumenta domestica*. However, most of them are *tituli honorarii*, i.e., inscriptions carved on public monuments (80% of the tokens belong to this category; see Table 1).

The 88 inscriptions from *Sabratha* (1,205 tokens) are more balanced in terms of dating (52% of the texts, i.e. 46, date back to the 1st–3rd century CE); like those in *Lepcis Magna*, public inscriptions are more represented than other text types (Table 2).

The subset from *Theueste* contains 271 inscriptions (4,324 tokens), mainly from the 1st–3rd century (259 texts, i.e. 96%). Unlike *Lepcis Magna* and *Sabratha*, funerary inscriptions are by far the most frequent among the attested text types in this area (Table 3).

Finally, the subset of inscriptions displaying an inferior epigraphic density contains 226 texts in total (4,570 tokens). Again, public inscriptions of the first centuries of the Empire are more represented (77% of the texts, i.e., 174, date back to the 1st–3rd century CE; see Table 4 for the distribution of text types).

One further remark is needed. The picture outlined above clearly shows that our data are not balanced in terms of dating and text type for the different areas. In addition, the inscriptions from *Sabratha* are less numerous than those from the other regions. This issue relates to the unbalancing in the documentation available for epigraphic texts, a well-known shortcoming of epigraphic studies that encompasses all the regions of the Empire. We will try to partially

Table 1. *Lepcis Magna*: text types

Text type	Tokens		Texts	
	N.	%	N.	%
Tituli sepulcrales	287	5%	18	7%
Tituli honorarii	4,698	80%	189	76%
Instr. dom.	5	0%	1	0%
Tituli sacri	846	15%	42	17%
Total	5,836	100%	250	100%

Table 2. *Sabratha*: text types

Text type	Tokens		Texts	
	N.	%	N.	%
Tituli sepulcrales	498	41%	37	42%
Tituli honorarii	675	56%	50	57%
Tituli sacri	32	3%	1	1%
Total	1,205	100%	88	100%

Table 3. *Theueste*: text types

Text type	Tokens		Texts	
	N.	%	N.	%
Tituli sepulcrales	4,048	94%	258	95%
Tituli honorarii	190	4%	9	3%
Tituli sacri	86	2%	4	2%
Total	4,324	100%	271	100%

Table 4. Other areas: text type

Text type	Tokens		Texts	
	N.	%	N.	%
Tituli sepulcrales	1,445	32%	113	50%
Tituli honorarii	2,651	58%	93	41%
Tituli sacri	474	10%	20	9%
Total	4,570	100%	226	100%

overcome this issue in two ways: (i) text type and dating will be taken into account as variables in our linguistic analysis, and a fine-grained examination of a subset of comparable texts of the same dating and type will be performed (§4); (ii) the error rate will be calculated as a relative percentage against the total number of possible contexts/other divergent spellings of both each subset and of the whole corpus so that the percentages can be 'weighed' so as to take into account the different sizes of the corpora (§§3–4).

3. ERROR RATE

3.1. <B>/<V> alternations in the corpus

As a first parameter, we examined the relative frequency of <B>/<V> alternations over the total number of possible contexts, i.e., of spellings displaying <B> and <V> according to the Classical norms. The frequency of the occurrences of <B> for <V> (e.g., *bixit* for *uixit*) and <V> for <B> (e.g. *nouilissimo* for *nobilissimo*) was calculated over the number of <B> and <V> 'Classical' spellings (e.g. *uixit*, *bene*, and the like). The results are represented in Tables 5 and 6.

The Tables show some discrepancies in the type of alternations. Firstly, the occurrences of <B> for <V> are far more attested than <V> for <B> in all areas. Only two instances of <V> for <B> are found, in inscriptions dating from the end of the 3rd century onwards. One occurrence is attested in *Lepcis Magna* (*laudauilis* for *laudabilis*, IRT 522, 291–295 CE) and one in *Theueste* (*nouilissimo* for *nobilissimo*, 337–240 CE), whereas the phenomenon is not attested in the other subsets, although possible contexts of occurrence for the phenomenon were available. The

Table 5. Occurrences of <B> for <V> (e.g., *bixit* for *uixit*)

	Lepcis Magna		*Theueste*		*Sabratha*		Other areas	
	N.	%	N.	%	N.	%	N.	%
<B>	16	3%	2	1%	35	33%	8	3%
<V>	551	97%	271	99%	70	67%	247	97%
Total	567	100%	273	100%	105	100%	255	100%

Table 6. Occurrences of <V> for <B> (e.g., *uene* for *bene*)

	Lepcis Magna		*Theueste*		*Sabratha*		Other areas	
	N.	%	N.	%	N.	%	N.	%
<V>	1	0.2%	1	1%	0	0%	0	0%
<B>	410	99.8%	128	99%	100	100%	247	100%
Total	411	100%	129	100%	100	100%	247	100%

frequency of <V> for <B> is therefore very low in all areas (i.e. equal or below 1%) coherently with the trend observed for other regions of the Empire.[17] For this reason, from now on we will focus on the instances of <B> for <V>.

Secondly, a difference in the incidence of the use of <B> for <V> is found in the examined areas (Table 5). A very high relative frequency is found in *Sabratha*, where nearly one-third of the instances display <B> for <V> (33%). Contrarily, in the other subsets the percentages are far lower, i.e. equal to or below 3%, with the smallest error rate found in *Theueste* (1%). Although the higher frequency found in *Sabratha* might be overestimated due to the quantitative unbalancing of the corpora, the difference is statistically significant (χ^2 (3) 332.23, *p-value* < 2.2e-16). This is confirmed also by the results obtained by calculating the relative frequency of the alternations over the total number of contexts available in the whole corpus (Table 7).

Table 7. <B> for <V> in the corpus: diatopic variation

	<B> for <V>		Total contexts
	N.	%	
Lepcis Magna	16	1.2%	1,287
Theueste	2	0.2%	
Sabratha	35	2.7%	
Other areas	8	0.6%	

[17] Barbarino (1978); Tamponi (2022).

Although the discrepancy is less marked, it is still evident that more alternations are found in *Sabratha*, where the frequency of <B> for <V> spellings is more than double *Lepcis Magna* (2.7% vs 1.2%) and far higher than the other areas.

3.2. <B> for <V>: dating and text type

Regarding dating, the occurrences of <B>/<V> alternations are found almost exclusively in later inscriptions dating from the 4th century onwards. This holds for all areas, despite the presence of possible contexts for the phenomenon available in both earlier and later inscriptions, as is shown in Tables 8 and 9.

Focusing on later texts, the discrepancy in frequency outlined above can still be observed: in *Sabratha* the relative frequency of the confusions is far higher than in the other regions (44% vs ≤12%; Table 9).

As far as text type is concerned, the phenomenon is particularly attested in funerary and public inscriptions (Tables 10–13). This is due to the unbalancing in the text types represented in the corpus since most of the available inscriptions are public or funerary (§2). Since *tituli sacri* and *instrumenta domestica* are less represented, not enough contexts of occurrences of the phenomenon are available to make valid observations on these epigraphic genres. As for earlier *tituli sacri* from *Lepcis Magna* and the 'other areas' subset, where a higher number of contexts are available, no confusion is attested: this is coherent with the data from the earlier funerary and public inscriptions.

Focusing on later funerary inscriptions, which cover most of the token instances, a discrepancy in the incidence of the phenomenon is still attested. *Sabratha* displays a far higher

Table 8. Incidence of <B> for <V> before 300 CE

Before 300 CE								
	Lepcis Magna		*Theueste*		*Sabratha*		Other areas	
	N.	%	N.	%	N.	%	N.	%
<B> for <V>	1	0%	1	0%	0	0%	0	0%
<V>	350	100%	258	100%	26	100%	191	100%
Total	351	100%	259	100%	26	100%	191	100%

Table 9. Incidence of <B> for <V> after 300 CE

After 300 CE								
	Lepcis Magna		*Theueste*		*Sabratha*		Other areas	
	N.	%	N.	%	N.	%	N.	%
<B> for <V>	15	7%	1	7%	35	44%	8	12%
<V>	201	93%	13	93%	44	56%	56	88%
Total	216	100%	14	100%	79	100%	64	100%

Table 10. <B> for <V> in *Lepcis Magna*: text type

Lepcis Magna		Before 300				After 300			
		Tit. Sep.	*Tit. Hon.*	*Instr*	*Tit. Sacr.*	*Tit. Sep.*	*Tit. Hon.*	*Instr*	*Tit. Sacr.*
<B> for <V>	N.	0	1	0	0	13	2	0	0
	%	0%	0%	0%	0%	62%	1%	–	–
<V>	N.	7	268	1	74	8	193	0	0
	%	100%	100%	100%	100%	38%	99%	–	–

Table 11. <B> for <V> in *Sabratha*: text type

Sabratha		Before 300				After 300			
		Tit. Sep.	*Tit. Hon.*	*Instr*	*Tit. Sacr.*	*Tit. Sep.*	*Tit. Hon.*	*Instr*	*Tit. Sacr.*
<B> for <V>	N.	0	0	0	0	35	0	0	0
	%	0%	0%	–	0%	70%	0%	–	–
<V>	N.	6	14	0	6	15	29	0	0
	%	100%	100%	–	100%	30%	100%	–	–

Table 12. <B> for <V> in *Theueste*: text type

Theueste		Before 300				After 300			
		Tit. Sep.	*Tit. Hon.*	*Instr*	*Tit. Sacr.*	*Tit. Sep.*	*Tit. Hon.*	*Instr*	*Tit. Sacr.*
<B> for <V>	N.	1	0	0	0	1	0	0	0
	%	0%	0%	–	0%	17%	0%	–	–
<V>	N.	235	16	0	7	5	8	0	0
	%	100%	100%	–	100%	83%	100%	–	–

Table 13. <B> for <V> in other areas: text type

Other areas		Before 300				After 300			
		Tit. Sep.	*Tit. Hon.*	*Instr*	*Tit. Sacr.*	*Tit. Sep.*	*Tit. Hon.*	*Instr*	*Tit. Sacr.*
<B> for <V>	N.	0	0	0	0	8	0	0	0
	%	0%	0%	0%	0%	24%	0%	–	0%
<V>	N.	60	109	1	21	25	28	0	3
	%	100%	100%	100%	100%	76%	100%	–	100%

frequency of confusion (70%), followed by the 'other areas' subset (24%). Although *Lepcis Magna* seems to display a high incidence of confusion (62%), the low number of token instances available for later funerary inscriptions (21 in total) impedes us from drawing reliable conclusions. Similarly, no valid observations can be made for *Theueste* because of the low number of occurrences (<15).

3.3. Lemmas involved

The alternations found in our corpus mainly involve the lemmas *uiuo* (in the form *bixit* for *uixit*) and *requiesco* (in the form *requiebit* for *requieuit*): this peculiarity seems to be due to the high number of funerary texts available in the corpus (§2) and to the limited number of lexemes found in the inscriptions. The complete list of the lemmas involved for each area is reported below:

(i) *Lepcis Magna*. <B> for <V>: lemma *uiuo* (in the forms *bixit* and *biuerunt*), 7 occurrences; lemma *seruator* (in the form *serbator*), 3 occurrences; lemmas *octauus* (in the forms *octabae*, *oktabae*) and *Lauinatium* (*Labinatium*), 2 occurrences; 1 occurrence of the lemmas *beneuolus* (*beniboli*) and *uir* (*bir*). As for <V> for <B>, one occurrence of the lemma *laudabilis* (in the form *laudauilis*) is attested.
(ii) *Sabratha*. <B> for <V>: lemma *uiuo* (in the form *bixit*), 26 occurrences; lemma *requiesco* (in the form *requiebit*), 6 occurrences; one occurrence of the lemmas *Nouember* (*Nobembris*), *uox* (*bocem*) and *uniuersus* (*unibersa*). No instances of <V> for <B> are recorded.
(iii) *Theueste*. <B> for <V>: one occurrence of the lemmas *uiuo* (in the form *bixit*) and *Nouember* (*Nobembres*). As for <V> for <B>, one occurrence of the lemma *nobilis* (*nouilissimo*) is attested.
(iv) Other areas. <B> for <V>: lemma *uiuo* (in the form *bixit*), 6 occurrences; one occurrence of the lemmas *requiesco* (*requiebit*) and *conuoco* (*conbocare*). No instances of <V> for <B> are recorded.

3.4. Context

Another important variable in the study of <B>/<V> alternations is their context of occurrence, i.e. the position in the word of the phoneme showing the confusion. This examination is particularly interesting given the difference in the target environment throughout the Empire evidenced by the literature.[18] For example, according to the data by Adamik,[19] some areas (e.g. Apulia et Calabria and Moesia Inferior) show a higher frequency of confusion in word-initial and post-consonantal position,[20] whereas others display a preference for the intervocalic context (e.g. Germania Superior and Venetia et Histria). The picture displayed by the African areas examined here, however, has not yet been examined in detail.

For this parameter, we focused on the instances of <B> for <V>, since the low number of attestations displaying <V> for <B> does not allow us to perform such an analysis. The data have been classified through the following labels: 'initial', when the confusion is found in an absolute

[18] Barbarino (1978); Adamik (2017b).

[19] Adamik (2017b).

[20] This datum led Adamik (2017b) to propose a Greek influence for the alternations, since in the Greek dialects the sound change [b] > [β] > [v] is attested in all positions, at least by the 1st century CE, and – unlike Latin – affected syllable-final position as well.

initial position; 'intervocalic', when the confusion is preceded by a vowel (including the occurrences where it is preceded by a word ending in a vowel, e.g., *qui bixit* for *qui uixit*); and post-consonantal, when the confusion is preceded by a consonant. According to our data, in almost all areas, the initial position seems to be more frequently targeted by the phenomenon.[21] However, when phonosyntax is taken into account (i.e. occurrences such as *qui bixit* are treated as intervocalic rather than in the initial position),[22] the phenomenon is mostly attested in the intervocalic context (Tables 14 and 15). A partial exception seems to be found in the 'other areas' subset, where confusions in intervocalic position are only half of the total; however, the low number of data forms from this area (<10 tokens) impedes us from making reliable observations.

Our results are thus coherent with the general trend evidenced by the Latin language[23] and Latin inscriptions from other areas of the Empire:[24] the merger of CLat. /b/ and /w/ is attested in intervocalic position, possibly also across word boundaries. No internal diatopic difference is found in our corpus.

Table 14. Context for <B> for <V>

Context	*Sabratha*		*Lepcis Magna*		Other areas		*Theueste*	
	N.	%	N.	%	N.	%	N.	%
Initial	27	77%	8	47%	6	74%	1	33%
Intervocalic	8	23%	6	35%	1	13%	2	67%
Post-consonantal	0	0%	3	18%	1	13%	0	0%
Total	35	100%	17	100%	8	100%	3	100%

Table 15. Context for <B> for <V> in phonosyntax

Context (phonosyntax)	*Sabratha*		*Lepcis Magna*		Other areas		*Theueste*	
	N.	%	N.	%	N.	%	N.	%
Initial	0	0%	1	6%	3	37%	0	0%
Intervocalic	35	100%	13	76%	4	50%	3	100%
Post-consonantal	0	0%	3	18%	1	13%	0	0%
Total	35	100%	17	100%	8	100%	3	100%

[21] In *Theueste*, the low number of data (only 2 occurrences) leads to an overestimation of the occurrences in intervocalic position, since one of the two instances of the phenomenon is found in *Nobembres* for *Novembres*, i.e. in intervocalic position. However, this datum is coherent with the general trend shown by the other areas when phonosyntax is examined (see *infra*).

[22] For this methodology, we followed Adamik (2017b).

[23] Niedermann (1991) 87–88; Väänänen (1963) 50.

[24] Adamik (2017b).

4. <B> FOR <V> IN LATER INSCRIPTIONS: DIFFERENT LEVELS OF LITERACY?

The diatopic difference in the incidence of the phenomenon evidenced in §3.1 deserves further attention. While considering the total contexts available as a variable, the methodology applied in the previous sections does not consider the literacy level of those involved in the crafting of the inscriptions. However, the available literature on epigraphic data shows that this variable cannot be disregarded in linguistic analysis. Theoretically, if the level of literacy of the author(s) was high, a lower frequency of divergent spellings found in a subset of inscriptions could be due to better knowledge of the Classical norms.[25]

For this reason, we accounted for the level of literacy following the methodology proposed by Herman.[26] We examined the frequency of the confusion between <AE> and <E> for the later texts, where most of the <B>/<V> alternations are attested. According to Herman, this datum could provide a sort of 'cultural index' for each region. Since the monophthongization *ae* > *e* was accomplished centuries before the end of the Empire, <AE>/<E> confusions in later texts might depend on the low orthographic competence of the author(s).[27]

In other words, following this hypothesis, a high frequency of <AE>/<E> confusions (calculated over the total number of other divergent spellings) might hint at a low level of literacy of those involved in the crafting of the inscriptions and thus help with the interpreting of our data. The results are displayed in Table 16 below and are calculated for later public and funerary inscriptions (after 300 CE), which display most of the <B>/<V> alternations examined here.[28]

Table 16. <AE>/<E> confusions in public and funerary inscriptions (after 300 CE)

	Sabratha		Other areas		*Lepcis Magna*		*Theueste*	
	N.	%	N.	%	N.	%	N.	%
<AE>/<E>	36	35%	7	17%	8	14%	1	6%
Other divergent spellings	68	65%	34	83%	51	86%	15	94%
Total	104	100%	41	100%	59	100%	16	100%

[25]Among Herman's and Adamik's studies, see e.g. Herman (2000) and Adamik (2012).

[26]Herman (2000); see also Adamik (2012) 135.

[27]Herman (2000) 126, n. 7: "Segnaliamo un punto di particolare importanza: dato che alla fine dell'impero la monottongazione *ae* > *e* era un processo compiuto da secoli, le frequentissime fluttuazioni e incertezze fra AE e E sono semplicemente ortografiche, senza incidenza fonetica. La loro frequenza dipende dal livello culturale, di competenza ortografica, e non dalla pronuncia."

[28]If we examine separately funerary and public inscriptions, the data are too scanty to make valid observations. In particular, in *Sabratha* and *Theueste*, almost all the data belong to funerary texts (only two other divergent spellings are found in *tituli honorarii* from *Sabratha* and four in those from *Theueste*); the number of tokens for public inscriptions from the 'other areas' subset is also low (only 10 instances are available). However, in *Lepcis Magna*, where more data are available, the results do not change significantly. The frequency of <AE>/<E> confusions is 14% in funerary inscriptions and 13% in public texts (vs 13% reported in Table 16).

A different incidence of <AE>/<E> confusion can be spotted in the examined areas. *Sabratha* displays the highest frequency of confusion (35%), whereas the 'other areas' subset and *Lepcis* Magna display a lower incidence of confusion (17% and 14%, respectively). Not enough data are available for *Theueste* to make valid observations. Of course, the data sparseness forces us to proceed with caution. However, following Herman's hypothesis, *Sabratha* seems to display a lower level of literacy than the other areas examined – a variable that might affect our data.

Given these results, it is important to consider literacy as a variable. To do so, we adopted the methodology proposed by Herman and more recently by Béla Adamik,[29] i.e. the relative frequency of the <B>/<V> confusions was calculated over the total number of other consonantal divergent spellings found in each area.[30] Since most of the data involve the use of <B> for <V> in public and funerary inscriptions dating from 300 CE onwards (§3.2), we limited our analysis to these occurrences. The results are reported in Table 17 below.[31]

These results allow us to make two important observations. Firstly, the validity of the <AE>/<E> confusions as a 'cultural index' seems to be confirmed by the higher number of total consonantal divergent spellings found in *Sabratha* in comparison with the other areas (54 vs. <40), although a smaller number of texts is available for this subset (88 vs ca. 250; §2).

Secondly, although <B>/<V> confusions are attested in all areas, the application of this methodology on a subset of synchronic inscriptions seems to confirm the higher frequency of the phenomenon found in *Sabratha* (65%), which almost doubles the one found in *Lepcis*

Table 17. <B> for <V> in public and funerary inscriptions (after 300 CE) and other consonantal divergent spellings

	Sabratha		*Lepcis Magna*		Other areas		*Theueste*	
	N.	%	N.	%	N.	%	N.	%
<B> for <V>	35	65%	15	38%	8	24%	1	10%
Other C	19	35%	24	62%	25	76%	9	90%
Total	54	100%	39	100%	33	100%	10	100%

[29]See e.g. Herman (1965, 2000); Adamik (2012, 2017a, 2017b).

[30]The other consonantal divergent spellings taken into account are the following: omission of consonants (final *-s*, *-m*, *-t*), insertion of consonants, consonant doubling, occurrences of single for double consonants, confusion between voiced and voiceless stops.

[31]Public inscriptions were included since occurrences of <B> for <V> are found in *tituli honorarii* from *Lepcis Magna* (2 occurrences vs 17 other consonantal divergent spellings); in the other areas, no confusions are attested in this text type, although other divergent spellings are found (2 in *Sabratha*, 4 in the other areas, 3 in *Theueste*). However, even excluding public inscriptions from the analysis, the results still indicate a higher frequency of the confusions in *Sabratha*, although the difference with *Lepcis Magna* is less marked: the instances of <B> for <V> cover 67% of the consonantal divergent spellings in *Sabratha* (35 occurrences vs 17 other spellings) and 65% in *Lepcis Magna* (<B> for <V>: 13 occurrences; other consonantal divergent spellings: 17); their frequency is lower in the other areas (28%, i.e. <B> for <V>: 8; other divergent spellings: 21) and in *Theueste* (14%, i.e. <B> for <V>: 1; other divergent spellings: 6).

Magna (38%) and in the other areas (24%). For *Theueste* the data are too scanty to make valid observations (10 total tokens). The causes of this internal diatopic difference are not clear: as was already mentioned for the whole of Roman Africa, the traditional explanations involving e.g. contact with Greek or 'Libyan' do not apply to these areas. There is no evidence of a strong Greek influence in the examined regions that would justify the transfer of a phonetic feature of Greek into African Latin, and little information is available on the phonology of the local languages in contact with Latin (except for Punic) that were part of the complex linguistic background of Roman Africa.[32] Further research is needed to address this issue.

5. SOME CONCLUSIONS AND METHODOLOGICAL REMARKS

The fine-grained examination of a subset of inscriptions from North Africa illustrated so far allows us to add new data regarding the incidence of <B>/<V> confusions and the literacy level in the examined areas, on the one hand, and to make some methodological observations, on the other.

Firstly, most of the alternations involve the use of <B> for <V> and are found in later texts (after 300 CE) in intervocalic position, also when phonosyntax is considered, coherently with the trend evidenced for Latin inscriptions from other areas of the Empire.[33] Furthermore, a diatopic differentiation seems to be found, also when dating, text type, available contexts and literacy level are considered: *Sabratha* seems to display a higher incidence of confusion than the other areas examined. The causes of this internal diatopic difference are unclear, and we intend to tackle this issue in the near future.

Secondly, different levels of literacy seem to be attested in the several areas examined, with *Sabratha* displaying the lowest literacy level among the examined regions. In this respect, the frequency of <AE>/<E> confusions seems to be a valid 'cultural index' to be considered when carrying out linguistic analysis.

In addition, a few methodological remarks are needed. Firstly, caution is needed due to the low number of available data, which is an inescapable shortcoming of epigraphic texts. The reliability of our observations might also be compromised by the imbalance in the size of the corpora. However, we believe that these issues might be at least partially overcome by calculating the relative frequency of the examined spellings and by taking into account extra-linguistic variables such as dating and text type. Finally, we believe it is vital to consider the level of literacy of the writers, in addition to the total number of available contexts of occurrence of the phenomenon: only in this way are we able to make more reliable observations, despite the imbalance in the available data.

[32] Se e.g. Millar (1968) and Clackson–Horrocks (2007) 86–87 on Libyan.

[33] Barbarino (1978); Adamik (2017b); Tamponi (2022).

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