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REMARKS ON VOWEL DELETION IN LATIN INSCRIPTIONS FROM SARDINIA

BY LUCIA TAMPONI
University of Pisa
lucia.tamponi@fileli.unipi.it

Abstract: This paper focuses on the frequency of vowel deletion in a corpus containing the available Latin inscriptions from Sardinia. The frequency of the phenomenon has been examined with reference to the amount of other deviant spellings displayed in the epigraphic texts, the dating and the type of the inscriptions involved. The results of the analysis show a very low frequency of vowel deletion in the inscriptions from the island, which is consistent with the Romance evolution of the Sardinian varieties. In particular, late syncope is infrequent, especially when its relative frequency is compared with that provided for other areas of the Empire. Therefore, though it is possible to find a correlation between the data from Latin inscriptions and Romance, our results reinforce the conclusions put forward by Adamik,[1] according to which the allegedly high frequency of syncope in late Latin and the assumption of a pan-Romance core of Romance syncope is not supported by inscriptional evidence.
Keywords: historical linguistics, Sardinia, Latin linguistics, phonology, corpus linguistics.

1. Vowel deletion

Vowel deletion is attested in Latin as well as in the Romance languages. As is well known, the main targets of the phenomenon are unstressed vowels, being less prominent than accented ones.[2] In particular, while tonic and semitonic vowels (i.e. bearing secondary stress) are generally preserved, pre-tonic and post-tonic ones are more subject to vowel reduction and deletion.[3]

As far as Late Latin is concerned, Grandgent,[4] among others, lists the environments in which unstressed vowels tended to fall in Late Latin, underlying that initial ones were the most resistant.[5] On the contrary, medial pre-tonic and post-

[1] Adamik 2016.
[2] Lausberg 1956, It. transl. 1971, 252.
[3] Lausberg 1956, It. transl. 1971, 254; Schmid 2016, 475–476; Marotta 2016a, 484, 490–491.
[4] Grandgent 1907.
[5] Grandgent 1907, 102.

tonic vowels tended to be omitted more frequently, such as in *oc(u)lus*, *vir(i)dis*.[6] Likewise, Menéndez-Pidal[7] highlighted that unstressed vowels tended to fall especially in post-tonic and pre-tonic medial position, whereas initial and final vowels are more resistant to deletion.

As far as the Romance languages are concerned, as is known, the distribution of the phenomenon is unequal.[8] In particular, post-tonic vowels are generally preserved in paroxytones in the Sardinian varieties and, though with exceptions, in the Central and Southern Italian varieties. On the contrary, vowel deletion is more pervasive in Romanian and even more in Spanish and Portuguese. Finally, French, Provençal, Catalan, Rheto-Romance and Gallo-Italic dialects show a greater pervasiveness of deletion of unstressed vowels (e.g. Lat. *dormitoriu(m)* > French *dortoir*; Lat. *tepidu(m)* > French *tiède*).[9]

2. Late syncope

Among the types of vowel deletion, the most relevant process for Latin and Romance linguistics is the so-called 'late syncope', i.e. the loss of short pretonic or post-tonic medial vowel at the time when the Penultimate Stress Rule was operating, such as in *oculum* > *oclum* "eye".[10] The phenomenon of late syncope is thus extensively examined in the most well-known reference studies on Latin and Romance. As illustrated by Väänänen,[11] among others, it is not easy to determine the exact context for late syncope. In general, according to the scholar, vowels tended to be omitted in the following contexts: l_m, l_d, l_p, r_m, r_d, s_t (e.g. *cal(i)du*, *pos(i)tu*) and between two identical dental consonants. Moreover, the close vowels /i/, /e/, /u/ are more frequently affected by syncope phenomena than /a/ and /o/.[12] Likewise, Lausberg[13] defines syncope as the omission of an unstressed medial vowel, providing the following contexts: between /l/ or /r/ and any consonant (*cal(a)mu*, *lar(i)du*), between any consonant and /l/ (*oc(u)lu*), between /s/ and /t/ (*pos(i)tu*), as well as other cases different from the aforementioned contexts (e.g. *frig(i)du*) and in the groups *-ávi-* or *-ávu-* followed by a consonant (*cantavit* > **cantaut* > It. *cantò*).[14] Lastly,

[6] Grandgent 1907, 91–92.
[7] Menéndez-Pidal 1985=1904, 66–82.
[8] Adams 2013, 91; Loporcaro 2011, 64.
[9] Lausberg 1956, It. transl. 1971, 262.
[10] See e.g. Kiss 1972; Mester 1994; Weiss 2009.
[11] Väänänen 1966=1937.
[12] Väänänen 1966=1937, 42.
[13] Lausberg 1956, It. transl. 1971, 267.
[14] Lausberg 1956, It. transl. 1971, 251.

Weiss,[15] while acknowledging that it is not possible to provide a stable rule to specify the context for syncope, concludes that the phenomenon usually affects short vowels in open syllables immediately following or preceding a sonorant consonant and/or a fricative.[16]

2.1. The Romance languages

As previously described for vowel deletion in general, the spread of syncope was unequal in the Romance languages. The phenomenon is less pervasive in the Sardinian varieties and in Western Romance, whereas in Eastern Romance the phenomenon is widespread. Among these languages, Portuguese is the most conservative one; post-tonic medial vowels are less preserved in Spanish, whereas syncope is attested to a greater extent in Catalan, Gallo-Romance, Rheto-Romance and Northern Italian.[17] Thus, for example, Clat. *pulice(m)* "flea" corresponds to Northern Sardinian *púlike*, Italian (Tuscan) *pulce*, Romanian *púrice*, Portuguese and Spanish *pulga* and French *puce*; Clat. *populu(m)* "people" corresponds to Northern Sardinian *pópulu*, Italian (Tuscan) *popolo*, Romanian *popor*, Portuguese *povo*, Spanish *pueblo*, French *peuple*.[18]

2.1.1. The Sardinian varieties

As previously mentioned, the Sardinian varieties tend to preserve Latin unstressed vowels and are more resistant to vowel deletion and syncope with respect to other Romance languages.

The issue is clearly addressed by the main reference works on modern and ancient Sardinian. Firstly, Wagner,[19] in his account of the phonetic aspects of modern Sardinian, concluded that its vowel system is averse to syncope of unstressed syllables. Moreover, Eduardo Blasco Ferrer,[20] in his work on the Linguistic history of Sardinia, highlighted that resistance to syncope is attested already in Ancient Sardinian from the 11th–12th century in the Condaghe di San Pietro in Silki (e.g. *Leporariu*; Logudorese variety, 11th century[21]) and in the

[15] Weiss 2009, 121–124.
[16] Weiss 2009, 122–123.
[17] Lausberg 1956, It. transl. 1971, 268.
[18] The Sardinian outcomes are from Wagner's *Dizionario Etimologico Sardo* (DES); the other examples are from Lausberg 1956, It. transl. 1971, 268–270.
[19] Wagner 1941, 43 ff.
[20] Blasco Ferrer 1984, 66 ff.
[21] Blasco Ferrer 2017a, 128.

Condaghe di San Nicola di Trullas (e.g. *Leppore*, *Pulike*; Logudorese variety, second half of the 12th century[22]). Similarly, this tendency can be found in the ancient documents belonging to the Campidanese variety, such as the Carte Volgari dell'Archivio Arcivescovile di Cagliari (e.g. *Lepuri*, *Arburi*; 11th–13th centuries[23]). Likewise, Lausberg[24] and Virdis[25] highlighted that post-tonic and intertonic vowels are generally preserved in Sardinian, the latter being conservative with respect to syncope.

3. Epigraphic evidence

Given its relevance in Latin and Romance linguistics, among the various types of vowel deletion, the frequency of syncope has been extensively studied for different areas of the Empire. Indeed, syncopated forms can be found with variable degrees of frequency in non-literary texts, such as in inscriptions from Rome, Central Italy, Roman Gaul, the Iberian Peninsula,[26] Africa, the Balkans,[27] *Noricum*, *Dacia*,[28] *Dalmatia*, *Pannonia* and Northern Italy[29] and in the Vindolanda tablets.[30]

In particular, as far as inscriptions are concerned, scholars such as Cross,[31] Gaeng,[32] Omeltchenko,[33] Herman[34] and Adamik[35] pointed out that syncope is generally not frequent in the epigraphic texts from the Empire. A first qualitative analysis of the phenomenon in the inscriptions from Spain, Gaul, Italy, Rome and Sardinia, *Noricum*, Upper *Pannonia*, *Dalmatia*, *Dacia* and Africa was performed by Cross.[36] The results of his study showed a general lack of syncope in

[22] Blasco Ferrer 2017a, 128.
[23] Solmi 1905.
[24] Lausberg 1956, It. transl. 1971, 267–268, 270.
[25] Virdis 1978.
[26] Gaeng 1968, 267–272.
[27] Omeltchenko 1977.
[28] Cross 1930.
[29] Herman 1984=1990; Adamik 2016.
[30] Cotugno 2018.
[31] Cross 1930.
[32] Gaeng 1968.
[33] Omeltchenko 1977.
[34] Herman 1984=1990.
[35] Adamik 2016.
[36] Cross 1930.

the aforementioned areas, where it was not possible to identify any relevant diatopic difference in comparison with the future Romance developments.[37] Secondly, the Christian inscriptions (4th–7th century CE) from Rome and Italy, Gaul and the Iberian Peninsula were examined by Gaeng:[38] the results of his analysis show that the phenomenon is generally not frequent, though it is more present in Gaul than in the other areas examined. Conversely, in the Iberian Peninsula and in Italy only a few instances of the phenomenon can be found,[39] and the data from Rome do not show a higher frequency of syncope, especially when taking into account the higher number of inscriptions from this area.[40] Thirdly, the inscriptions from Africa, Britain, *Dalmatia* and the Balkans (3rd–7th century CE) were covered by Omeltchenko's[41] analysis, which reached similar conclusions. The scholar analyzed the omission of pre-tonic and post-tonic vowels (*i* and *u*) in the above-mentioned areas, providing percentages against the corresponding standard spellings. The results of his analysis show that syncope was not pervasive in Late Latin; furthermore, it was not possible to spot any relevant diatopic difference in the examined regions.[42]

Moreover, the inscriptions from Northern Italy, Rome, *Pannonia* and *Dalmatia* were examined by Herman[43] in his analysis of syncope of penultimate unstressed vowels in the epigraphic texts, highlighting that the extension of syncope in Latin inscriptions does not correspond to the one that characterizes Romance. In particular, syncope is not frequent in Gaul, despite it being characteristic of Gallo-Romance: in this area, the instances of the phenomenon are either found in late inscriptions (6th century CE) or in metrical texts. On the one hand, syncope is more frequent in North-Eastern Italy (*Venetia, Histria, Aquileia* and their surroundings) and Rome, as well as in *Dalmatia* and *Pannonia*, whereas on the other hand it is scarcely attested in the rest of Northern Italy.

Finally, more recently, Béla Adamik[44] examined the epigraphic texts from *Aquitania*, *Belgica*, *Narbonensis*, *Venetia-Histria* and *Dalmatia*, highlighting the overall scarcity of the phenomenon in the Empire and concluding that the traditional assumption that argues for a spread of syncope in Late Latin throughout the Empire is not confirmed. Moreover, the results of his analysis show that it is

[37] Cross 1930, 99, 101, 104.
[38] Gaeng 1968.
[39] Gaeng 1968, 268.
[40] Gaeng 1968, 270.
[41] Omeltchenko 1977.
[42] Omeltchenko 1977, 458.
[43] Herman 1984=1990.
[44] Adamik 2016.

not possible to observe any correlation between the diatopic distribution of syncope in Latin inscriptions and in Romance in the examined areas.[45] In particular, syncope was more frequent in all the regions in the first three centuries CE, though the distribution of the phenomenon is unequal: syncope was more frequent in *Belgica* (50%), *Aquitania* and *Dalmatia* (45%) and less pervasive in *Venetia-Histria* and *Narbonensis* (36% and 29%, respectively).[46] In the 4th–6th/7th centuries CE, the frequency of the phenomenon decreases in all the areas, and the diatopic differences are less marked, with the lowest incidence of the phenomenon in *Narbonensis* (3%) and *Belgica* (where syncope is not attested).[47]

3.1. Sardinian

As shown in the previous section, epigraphic texts have proven to be a reliable source for the analysis of the frequency of vowel deletion and syncope throughout the Empire. However, at the time of writing a detailed analysis of vowel deletion in the Latin inscriptions from Sardinia has not been carried out. The only partial exceptions are the qualitative studies carried out by Cross,[48] where only absolute figures are provided for Sardinia and the data from the island are not further commented, and by Lupinu[49] on the inscriptions from the island (up to the 7th century CE). The results of the latter analysis show that the phenomenon is not frequent on the island, especially when excluding spellings due to extralinguistic reasons.[50] These data are thus coherent with the Romance evolution of Sardinian, and Lupinu's examination is noteworthy and yields interesting results. However, only absolute figures are provided, which impedes us from making reliable comparisons with other areas of the Empire characterized by corpora of different sizes.

Finally, as far as existing quantitative analyses on syncope in inscriptions are concerned, Sardinia is either left out or not treated separately from the other parts of Italy. Gaeng[51] grouped the inscriptions from the island with the other texts from Southern Italy. For this reason, separate percentages are not provided for Sardinia by the scholar. Moreover, as illustrated in §3, the province was not included in the

[45] Adamik 2016, 20.
[46] Adamik 2016, 19.
[47] Adamik 2016, 19.
[48] Cross 1930.
[49] Lupinu 2000.
[50] Lupinu 2000, 46.
[51] Gaeng 1968.

analyses performed by Omeltchenko,[52] Herman,[53] nor in the most recent one by Béla Adamik,[54] since Sardinia was not part of the LLDB database.[55]

In order to shed light on the peculiarities of the change in the island, we carried out a quantitative and qualitative analysis of the phenomenon in a corpus containing the available Latin inscriptions from Sardinia (1st century BCE–7th century CE), providing percentages which will enable us to compare the results with those offered in previous studies.

4. The corpus
4.1. Composition

The survey presented here has been performed on an annotated epigraphic corpus which gathers Latin inscriptions from Sardinia. The dated texts range between the 1st century BCE and the 7th century CE. Each token is tagged with extra- and metalinguistic information which will allow us to analyze the spelling variants occurring in the texts, interpreting them with reference to extralinguistic variables such as the dating and the provenance of the texts. The corpus will be part of *CLaSSES* database (Corpus for Latin Sociolinguistic Studies on Epigraphic textS),[56] which collects different types of non-literary Latin texts (inscriptions, writing tablets, letters) of different periods and provinces of the Roman Empire.[57]

The inscriptions from Sardinia included in the corpus have been selected through the examination of the main collections of Latin inscriptions from the island, i.e. *Corpus Inscriptionum Latinarum X* (*fasc. I*, section *Pars posterior inscriptiones Siciliae et Sardiniae comprehendens*);[58] *Ephemeris Epigraphica VIII* (section *Additamenta ad Corporis vol. IX et X*)[59] and the collections edited by Giovanna Sotgiu.[60] Among the texts available for this province (ca. 2000), we

[52] Omeltchenko 1977.

[53] Herman 1984=1990.

[54] Adamik 2016, 2017.

[55] Computerized Historical Linguistic Database of the Latin Inscriptions of the Imperial Age, available at http://lldb.elte.hu/.

[56] The database is developed at the Department of Philology, Literature and Linguistics of the University of Pisa and is accessible online: http://classes-latin-linguistics.fileli.unipi.it/.

[57] At the time of writing, the database contains more than 1200 inscriptions, mainly from Rome and Central Italy, 200 ink-written tablets from Vindolanda and 219 letters from the North-African and Near-East areas. For a more exhaustive illustration of the corpus, see Marotta 2015, 2016b and De Felice *et al.* 2015.

[58] Henceforth CIL X.

[59] Henceforth EE VIII.

[60] Sotgiu 1961, henceforth ILSard 1; Sotgiu 1968, henceforth ILSard 2; Sotgiu 1988, henceforth ANRW.

excluded those considered not to be informative for linguistic analysis, i.e. fragmentary texts and inscriptions composed only of initials and single letters.

The corpus contains 1158 inscriptions (11086 tokens). As mentioned above, the dated inscriptions cover a broad time span, from the 1st century BCE to the 7th century CE: the majority of the texts date back to the 1st–3rd century CE, i.e. before the end of the Roman influence and the Vandalic (455 CE)[61] and Byzantine domination (533–534 CE).[62] It is worth noting, however, that this information was available only for 623 texts (9379 tokens), since, as is well known, the dating of inscriptions can be highly problematic.[63]

In addition, each inscription was annotated with the corresponding text type, as summarized in Table 1.

Text type	N. inscriptions	%
Tituli sepulcrales	573	49%
Instrumenta domestica	368	32%
Tituli honorarii	178	15%
Tituli sacri	32	3%
Military diplomas[64]	7	1%
Total	1158	100%

Table 1. *Text type of the inscriptions included in the corpus.*

As shown in the Table, funerary inscriptions are more represented in the corpus, covering almost half of the total number of texts (573, 49%). Moreover, a quite large number of *instrumenta domestica*, i.e. private inscriptions carved on domestic tools, and *tituli honorarii* (inscriptions on public monuments) is recorded for the island (368 texts, 32%, and 178 inscriptions, 15%, respectively).

[61] Blasco Ferrer 1984.

[62] Spanu 2005, 506–507; Blasco Ferrer 2017b; see also Tamponi 2019 for a more detailed overview on the composition of the corpus.

[63] For a detailed account of the main issues concerning the dating of epigraphic texts, see Cooley 2012, 398 ff.

[64] It is important to remember that, since these texts were composed by the relative Roman authorities, they cannot necessarily be taken as mirroring the variety of Latin spoken in Sardinia.

4.2. Annotation

All the selected epigraphic texts have been digitalized; subsequently, the corpus was tokenized and an index was created. In this way, each token (i.e. a string of contiguous characters between two spaces) is univocally identified by a token-ID.

The most relevant aspect of our corpus for linguistic studies is the linguistic analysis of the tokens, which focuses on the graphemic/phonological aspects of the language. The deviant spellings, i.e. spellings which do not conform to the norms of Classical Latin, were manually retrieved and classified according to the type of variation phenomena that characterizes them with respect to the corresponding classical equivalents. The identified phenomena involve vowels, consonants and morpho-phonology (i.e. involving morphological endings). For each level, the linguistic phenomena have been tagged with specific labels. It is worth noting, however, that misspellings presumably due to extralinguistic reasons, such as the state and the dimension of the support, were not annotated. Thus, for example, instances of omission of graphemes at the end of the line have not been counted among the deviant forms if the support was damaged.

5. Vowel deletion in Sardinia

5.1. Frequency

As far as vowel deletion is concerned, our data show that the phenomenon is not frequent on the island. As illustrated in Tables 2 and 3, only 31 instances of vowel deletion occur in the corpus. As far as the diachronic and diaphasic levels are concerned, this phenomenon does not seem to be related to a particular time frame or text type. However, the small number of available data impedes us from making reliable generalizations: as shown in Tables 2 and 3, vowel deletion is displayed mainly in funerary inscriptions dating back to the 1st c. BCE–3rd c. CE. However, this distribution mirrors the composition of the corpus, where *tituli sepulcrales* belonging to the early Empire are more represented than other texts (§4.1).

Time frame	Tokens	%
1st BCE–3rd CE	16	52%
4th–5th CE	10	32%
-	5	16%
Total	31	100%

Table 2. *Frequency of vowel deletion in Sardinia.*

Text type	N. of inscriptions	%
Tituli sepulcrales	29	94%
Tituli honorarii	2	6%
Total	31	100%

Table 3. *Vowel deletion and text type.*

As far as the type of the omitted vowels is concerned, the ones that are more frequently deleted are *i* (53%) and *u* (22%), as shown in Table 4. These results are thus coherent with the observations put forward in the literature by Väänänen,[65] Omeltchenko[66] and Adams,[67] among others, whereby close vowels are most frequently affected by syncope.

	Tokens	%
<I>	16	53%
<V>	7	22%
<A>	4	13%
<E>	2	6%
<O>	2	6%
Total	31	100%

Table 4. *Vowels omitted in the corpus.*

[65] Väänänen 1966=1937, 42.
[66] Omeltchenko 1977, 433–458.
[67] Adams 2013, 90.

5.2. Literacy

In order to be able to compare our data with those available for other provinces (see *infra*), we calculated the relative frequency of syncope in Sardinia following the methodology proposed by Béla Adamik.[68] In this way, it has been possible to compare a relatively small epigraphic corpus such as the Sardinian one with bigger ones (e.g. the corpus of inscriptions from Rome) while accounting for the level of literacy of those involved in the crafting of the inscriptions. The literacy level, i.e. the knowledge of Classical Latin orthographical and grammatical norms, is an important variable when examining spelling variations in epigraphic sources. In particular, if the level of literacy of the writers is high, the lack of misspellings in the inscriptions could not be immediately taken as a reflection of their pronunciation, since the latter could be obscured by their knowledge of the classical norms.

For this reason, following Adamik,[69] the relative frequency of vowel deletion has been calculated by comparing the number of forms showing the omission of vowels with the total number of other deviant spellings.[70] In this way, only the texts produced by speakers that had uncertainties in (at least) one other point of the language are examined. As a consequence, the absence of vowel deletion in these texts could be due to a correspondence between the classical norms and the pronunciation of those involved in the crafting of the inscriptions.

As shown in Table 5, the relative frequency of vowel deletion is extremely low in the corpus and amounts to 4% of the total number of deviant spellings. Other types of spellings deviating from the classical norm are instead more frequent in the examined inscriptions (219 instances affect vowels and 477 affect consonants, i.e. 30% and 66%, respectively).

[68] Adamik 2012.

[69] Adamik 2012.

[70] The other misspellings taken into account are the following: vowel alternations (<E> for <I>, <I> for <E>, <O> for <U>, <U> for <O>), presence of *I longa* or *apex*, vowel gemination, epenthesis, monophthongization <AE> = <E>, archaic spellings of diphthongs (<AI> for <AE>, <OE> for /u/) and presence of diphthongs for long vowels (<EI> for /i:/, <AE> for /e:/), <B>/<V> confusions, deletion of consonants (final *-s*, *-m*, *-t* and nasals, such as *ns*>*s*, etc.), insertion of consonants, assimilation, dissimilation, non-etymological gemination, degemination, confusion between voiced and voiceless stops, loss of aspiration.

	Tokens	%
Vowel deletion	31	4%
Other deviant spellings (vowels)	219	30%
Deviant spellings (consonants)	477	66%
Total	727	100%

Table 5. *Percentage of tokens showing other types of deviant spellings in the corpus.*

When taking into account the dating of the texts, which was not systematically examined up to date for Sardinia, a slight increase of the phenomenon is observable from the 4th century onwards (Table 6).[71] However, the percentages remain low in both the time frames examined: the frequency of vowel deletion amounts to 4.1% in the first time frame (1st BCE–3rd CE) and only to 5% in the second time frame (4th–6th CE).

1st BCE–3rd CE			**4th–6th CE**		
	Tokens	**%**		**Tokens**	**%**
Vowel deletion	16	4.1%	**Vowel deletion**	10	5%
Other deviant spellings (vowels)	129	33.1%	**Other deviant spellings (vowels)**	48	24%
Deviant spellings (consonants)	245	62.8%	**Deviant spellings (consonants)**	142	71%
Total	390	100%	**Total**	200	100%

Table 6. *Diachronic evolution of the process in Sardinia.*

A χ^2 test[72] conducted on the frequency of vowel deletion in the two time frames confirms that the distribution of the data is not statistically relevant (χ^2=5.2208, df=2, *p*-value=0.073504). Therefore, the frequency of vowel deletion does not depend on the chronology of the inscriptions.

[71] The 4th century has been chosen as a divide in our analysis because, from a historical point of view, from this period onwards the Roman influence on the island started to weaken, leading to the Vandalic and – above all – Byzantine conquest (Spanu 2005, 506–507; Blasco Ferrer 2017b, 86).

[72] The χ^2 test is a statistical test used to determine whether the distribution observed in our sample is significantly different from the distribution we would expect under the null hypothesis (in our case, that there is no significant difference in the frequency of vowel deletion in the first and second time frame analyzed). We used R software to perform the test.

6. Syncope
6.1. Frequency and literacy

Given its relevance for Latin and Romance linguistics, the instances of late syncope have been examined more in detail.

Among the tokens displaying vowel deletion discussed above, only four cases can be considered to be instances of late syncope:

- *oclos* for *oculos* "eye" (CIL X 7756, funerary inscription from Cagliari);
- *claviclarius* for *clavicularius* "turnkey" (CIL X 7613, funerary inscription from Cagliari);
- *Stablarius* for *Stabularius* (CIL X 7525, funerary inscription from Sant'Antioco);
- *incomparab(i)l(is)* for *incomparabil(is)* "incomparable" (ILSard 1 182, funerary inscription from Gergei).[73]

It is worth noting that those spellings seem not to be due to extralinguistic reasons, and some of them have a Romance continuant in Sardinian. The continuant of the variant *oclos* for *oculos*, for example, is found in the Statuti Sassaresi,[74] a legal document written in the Logudorese variety dating back to the beginning of the 14th century,[75] and is already mentioned in the *Appendix Probi*. Likewise, the form *stablum* is listed in the *Appendix Probi* (*stabulum non stablum*). Finally, we decided not to exclude the form *incomparab(i)l(is)* from the analysis, thus not considering it to be an abbreviation: though the word is located at the end of the line, the abbreviation *incomparab(i)l(is)* does not seem to be probable, given the preservation of the subsequent grapheme and the low frequency of the abbreviation in other epigraphic texts.[76]

[73] These forms are also recorded in the LLDB database: the relative LLDB-numbers are LLDB-48783, LLDB-89569, LLDB-90837, LLDB-43128 (whereas the dubious case LLDB-50765, *dulcisme* for *dulcissimae*, alternatively coded as a syncopated form in the LLDB database, was not counted among the less dubious syncopated forms taken into account in our analysis).

[74] «Sas manos, pedes, digitos, *oclos*, nares, oriclas (et) lavras» (the text is freely searchable in the ATLiSOr corpus: http://atlisorweb.ovi.cnr.it/).

[75] Putzu 2011, 187.

[76] For example, this abbreviation is not recorded for *incomparabilis* the inscriptions included in Trismegistos database (https://www.trismegistos.org/); here, the most frequent abbreviations adopted for this form are *incomparabil* (4 tokens out of 12) and *incomparabili* (2 tokens out of 12).

Focusing on syncope, therefore, the percentages presented above decrease dramatically, as is shown by calculating the relative frequency of the phenomenon against the total number of other deviant spellings (Table 7).[77]

1st BCE–3rd CE			**4th–6th CE**		
	Tokens	**%**		**Tokens**	**%**
Syncope	4	1.1%	**Syncope**	0	0%
Other deviant spellings (vowels)	129	34.1%	**Other deviant spellings (vowels)**	48	25.3%
Deviant spellings (consonants)	245	64.8%	**Deviant spellings (consonants)**	142	74.7%
Total	378	100%	**Total**	190	100%

Table 7. *Relative frequency of syncope in Sardinia.*

In Sardinia, the percentage of deviant spellings displaying syncope decreases to 1.1% in the early time frame, and no instances of the phenomenon are recorded from the 4th century onwards. Therefore, a low frequency of syncope is observed in our corpus, coherently with the Romance evolution of the Sardinian varieties (§2.1.1).

6.2. Comparison with other areas

Our observations are confirmed by the comparison with the data provided by Béla Adamik[78] for the provinces of *Narbonensis*, *Venetia-Histria*, *Aquitania*, *Belgica* and *Dalmatia*. As shown in Table 8, Sardinia displays the least relative frequency of the phenomenon with respect to the other areas examined, both in the early and in the late time frame.

	Sardinia	***Narbonensis***	***Venetia-Histria***	***Aquitania***	***Belgica***	***Dalmatia***
1st–3rd CE	1.1%	2%	3%	4%	5%	5%
4th–6th CE	0%	1%	2%	4%	0%	2%

Table 8. *Syncope in Sardinia in comparison with Adamik (2016).*

[77] It was not possible to run statistical analyses on this data set given the scarcity of data at our disposal.

[78] Adamik 2016.

As far as the early period is concerned (1st–3rd CE), the frequency of the phenomenon is 1.1% in Sardinia, with higher percentages in *Narbonensis* (2%), *Venetia-Histria* (3%), *Aquitania* (4%), *Belgica* and *Dalmatia* (5%). In the later texts (4th–6th CE), its frequency is slightly higher in *Narbonensis* (1%), *Venetia-Histria* and *Dalmatia* (2%) and *Aquitania* (4%), whereas in Sardinia and *Belgica* no occurrences of the phenomenon are recorded. Therefore, though the phenomenon is overall not frequent through the Empire, its scarcity in the inscriptions from the island is confirmed by the comparative analysis of the available epigraphic corpora, in line with the Romance evolution of the Sardinian varieties.

6.3. Syncope, stress and vowel mergers

According to Adamik,[79] it is possible to observe a correlation between syncope, stress and vowel mergers in stressed syllables in various areas of the Roman Empire. In particular, in the areas where a higher proportion of vowel mergers is recorded for stressed syllables, fewer confusions are found in unstressed syllables, as well as fewer cases of syncope, possibly due to the relatively lower intensity of stress. On the contrary, if a lower proportion of vowel mergers is recorded in stressed syllables, more confusions in unstressed syllables are found, as well as more instances of syncope – possibly because of a higher intensity of the stress.

Given the characteristic outcomes of the Sardinian vowel system, where distinctive vowel quantity was lost but the mergers of /ĭ, ē/ and /ŭ, ō/ did not occur, both in stressed and unstressed vowels,[80] we verified whether it is possible to observe a correlation between syncope and vowel mergers in Sardinia, following the methodology proposed by Adamik.[81] Therefore, the frequency of syncope has been calculated against that of vowel mergers in the stressed and unstressed syllables occurring in our corpus. In order to have data comparable to the ones provided for the other areas, the analysis is limited to the deviant spellings occurring in inscriptions from the 5th–6th century, being it the time frame analyzed by Adamik. The results are summarized in Table 9, where the percentages for Sardinia are compared with those provided in Adamik's survey.[82]

[79] Adamik 2017.

[80] See, among others, Wagner 1941; Lausberg 1956, It. transl. 1971; Fanciullo 1992; Loporcaro 2015, 56; Barbato 2017; Tamponi in press.

[81] Adamik 2017.

[82] Adamik 2017.

	Venetia et Histria	*Liguria et Transpadania*	*Gallia Lugudunensis*	*Gallia Narbonensis*	*Gallia Belgica*	*Sardinia*
VM (stressed σ)	27%	33%	38%	38%	46%	11%
VM (unstressed σ)	66%	62%	58%	60%	54%	89%
Syncope	7%	5%	4%	2%	0%	0%

Table 9. *Syncope, stress and vowel mergers in Sardinia compared with the data by Adamik (2017).*

As shown in the Table, the correlation between syncope, stress and vowel mergers does not seem to apply for Sardinia: few vowel mergers are recorded in stressed syllables (11%), and no instances of syncope are found in our corpus; on the contrary, the mergers in unstressed syllables are more frequent (89%) in proportion to the others. Therefore, Sardinia displays a peculiar situation with respect to other provinces of the Empire as far as the vowel system is concerned.

It is worth noting, however, that for the time frame analysed here, only nine deviant spellings have been recorded on the island. Therefore, given the scarcity of available data, the statistical value of the percentages provided here could be questioned. Moreover, this quantitative analysis needs to be interpreted in the light of a more detailed examination of the vowel alternations found in Sardinia: as already emerged from a detailed analysis of our corpus,[83] most of the vowel mergers recorded on the island could not be phonetic spellings, whereas a morphological explanation can be proposed for them.[84]

7. Conclusions

The data discussed so far show a low frequency of vowel deletion and syncope in Sardinia, consistently with the Romance outcomes of the varieties spoken on the island, which are generally resistant to syncope, as shown by ancient texts and data from the varieties of modern Sardinian (§2.1.1). In general, the distribution of vowel omissions is not relevant since it mirrors the composition of the corpus (§5.1).

As far as late syncope is concerned, we observed a very low frequency of the phenomenon on the island (§6.1): this is particularly evident when comparing our data with the ones provided for other areas of the Empire, since in Sardinia

[83] Tamponi in press.
[84] See also Herman 1984=1990 and Lupinu 2000.

the lowest frequency of late syncope is recorded, both before and after the 4th century CE (§6.2).

Thanks to the methodology adopted, it has been shown that the scarcity of the phenomenon is not due to a high level of literacy of those involved in the crafting of the inscriptions, since it is possible to find other phonetic deviant spellings (such as <B>/<V> confusions etc.) in the texts.

Finally, no correlation between stress, syncope and vowel mergers is found in Sardinia, although the scattered data at our disposal make it impossible to make reliable generalizations.

In conclusion, for Sardinia it is possible to spot a correlation between the lack of vowel deletion and syncope in Latin inscriptions and the resistance to these phenomena in the Sardinian varieties. Moreover, the overall scarcity of the phenomenon in Sardinia as well as in other areas of the Empire confirms the statements made by Adamik:[85] the allegedly high frequency of syncope in Late Latin and the assumption of a pan-Romance core of Romance syncope seems not to be supported by inscriptional evidence, also when Sardinia is taken into account.

List of abbreviations

ANRW = Sotgiu, G.: L'epigrafia latina in Sardegna dopo il C.I.L. X e l'E.E. VIII. In: Temporini, H., Haase, W.: *Aufstieg und Niedergang der römischen Welt (ANRW), II: Principat, 11.1*. Berlin/New York.

ATLiSOr = Archivio Testuale della Lingua Sarda delle Origini (http://atlisorweb.ovi.cnr.it/).

CIL X = Mommsen, T.: *Corpus Inscriptionum Latinarum*, vol. X *Inscriptiones Bruttiorum, Lucaniae, Campaniae, Siciliae, Sardiniae latinae*, fasc. I, section *Pars posterior inscriptiones Siciliae et Sardiniae comprehendens*.

CLaSSES = Corpus for Latin Sociolinguistic Studies on Epigraphic textS (http://classes-latin-linguistics.fileli.unipi.it/)

DES = Wagner, M.L.: *Dizionario Etimologico Sardo*. 3 vol. Heidelberg.

EE VIII = Ihm, M.: Additamenta ad Corporis vol. IX et X. In: *Ephemeris epigraphica. Corporis inscriptionum Latinarum supplementum, edita iussu Instituti archaeologici Romani, volume VIII*. Berolini, 1–22.

ILSard 1 = Sotgiu, G.: *Iscrizioni Latine della Sardegna (Supplemento al Corpus Inscriptionum Latinarum, X e all'Ephemeris Epigraphica, VIII), I*. Padova.

ILSard 2 = Sotgiu, G.: *Iscrizioni Latine della Sardegna, II: Instrumentum domesticum. I. Lucerne*. Padova.

LLDB = Computerized Historical Linguistic Database of the Latin Inscriptions of the Imperial Age (http://lldb.elte.hu/)

[85] Adamik 2016.

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