

From quill to query: Linguistic features of 8th-century charters from Tuscany

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ABSTRACT

This paper examines private legal charters from *Chartae Latinae Antiquiores* volume XXIII, focusing on eighth-century documents from Southern Tuscany and Northern Latium. These non-literary texts provide valuable insights into the evolution from Latin to Romance, showcasing phonological, morphological, and lexical variation. A detailed linguistic analysis reveals balanced consonantal and vocalic alternations, with phenomena like /<V> confusion and vowel shifts possibly reflecting an unstable vowel and consonant system, with morphosyntactic and lexical factors also influencing variation. These findings highlight Latin's dynamic evolution in the region and possibly its early movement toward Romance features, contributing to broader discussions on language variation and change.

KEYWORDS

Latin, historical linguistics, phonology, corpus linguistics

1. INTRODUCTION

The study of private legal medieval charters, such as those preserved in the collection of the *Chartae Latinae Antiquiores* (henceforth ChLA), represents a crucial resource for understanding the linguistic evolution of Latin during the period between the Roman Empire and the early Middle Ages. These charters, primarily non-literary and private, serve as original, 'direct' testimonies of language use, offering insights that are often absent from literary sources

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(Cuzzolin & Haverling 2009, 21). Their significance lies in their authenticity: each document is anchored in a specific time and place, with known authorship and geographical provenance, enabling researchers to trace linguistic changes with remarkable precision.

One of the primary reasons for their importance is the temporal gap they fill in the linguistic record. Private charters bridge the critical gap between the Latin inscriptions and the earliest attestations of the early Romance languages, emerging only in the later Middle Ages, offering a continuum of evidence that illuminates the gradual transformation of Latin into Romance. In this phase, the language of charters can exhibit features that reflect both its classical heritage and the emerging regional peculiarities that would later define the Romance languages. The non-literary nature of these documents provides a unique window into the practical application of Latin in everyday contexts. It is known that charters rely heavily on predetermined formulae (Korkiakangas 2024); however, unlike literary texts, which more strictly adhere to stylistic conventions and idealized norms, private charters can seldom capture characteristics of the language as it was written and understood by individuals of varying social standings, especially in the 'free' parts of the text (see e.g. Sabatini 1968, 227 ss.). Even in formulaic sections, alongside stable and grammatically correct phrases, deviations are often recorded (e.g. Sornicola 2017, 21). Comparing these fixed formulae with their deviations may allow us to trace the gradual reshaping of Latin structures and the emergence of new features, where the tension between inherited norms and evolving usage becomes more visible. These linguistic peculiarities make them invaluable for studying phonological, morphological, syntactic, and lexical developments. Furthermore, the vocabulary of these texts often includes terms related to agriculture, property, and local administration, offering points for reflection on the socio-economic realities of the time.

The known dating and provenance of the charters enhance their value for linguistic studies. Each document can be situated within a precise historical and geographical framework, allowing for the systematic study of regional linguistic variation and diachronic change. This precision is particularly important for exploring the interplay between Latin and local varieties, as well as the influence of the latter on the written language. For example, comparing charters from different regions can reveal the diffusion of innovative linguistic features or the persistence of conservative forms, thus contributing to a deeper understanding of the processes that shaped the development of the Romance languages.

At the same time, caution is required when interpreting the relationship between spelling and pronunciation in these texts. The evidence is filtered through the inherent conservatism of written sources and the pressure of normative traditions. Not all spellings necessarily reflect spoken usage; consequently, Late Latin documents only partially mirror the linguistic changes that were affecting the language at different levels. The legal texts examined here, for example, employed a conservative register, shaped by long-standing tradition and highly formularized from the outset.

Linguistic analysis must therefore take these factors into account and associate qualitative and quantitative methods. It is necessary to consider the possible influence of pre-established formulae, especially in the more formulaic sections (e.g. Sabatini 1968, 227 ss.), as well as scribal errors, deviations dictated by the material constraints of the support, and cases where reading or interpretation remains uncertain. At the same time, the linguistic phenomena observable in documentary sources cannot be reduced to mere repetitions of fossilized legal formulas (see recently Sornicola 2016, 115–116 and Valentini 2018, 15). On the contrary, graphic, morphological, syntactic, and lexical phenomena emerge, which must be analysed in relation

to future Romance structures. Thus, the analysis of documentary charters can indeed shed light on key issues in the history of Latin and its evolution, provided that the data are critically assessed and not taken to reflect spoken usage in a straightforward manner. For this reason, we believe that the private legal charters preserved in the *Chartae Latinae Antiquiores* are indispensable for linguistic studies of post-classical Latin. As original non-literary texts, they can capture aspects of the linguistic realities of their time, shedding light on both the continuity of Latin and its transformation into the Romance languages – if examined critically. Considering who produced the document (notaries, scribes), when and where it was written, and for what purpose helps distinguish between inherited formulas and genuine usage. A close qualitative analysis of individual forms is likewise essential, as it enables us to separate linguistic phenomena from other types of deviations, such as mere scribal mistakes or the persistence of fixed formulas. Combined with rigorous quantitative analysis, this contextual and qualitative approach makes it possible to detect innovation and change. Through their study, scholars can not only reconstruct linguistic changes but also gain a deeper appreciation of the cultural and social dynamics that shaped the development of Europe's linguistic heritage.

2. THE CORPUS

This paper will focus on an ad-hoc created corpus, containing the texts included in volume XXIII of *Chartae Latinae Antiquiores* (henceforth ChLA 23). The corpus is available on the LLDB database (<https://lldb.elte.hu/>; Adamik 2016a) and was built as part of the HORIZON ERC project Digital Latin Dialectology (DiLaDi, n. 101098102). The corpus contains 21 original private legal documents on parchment, for a total number of 7299 words. All documents belong to the San Salvatore monastery fund and are now held at the State Archive of Siena. They consist mainly of purchase agreements and pledges, and date from AD 736 to AD 774. The texts were written in Southern Tuscany (Chiusi, Sovana and Grosseto), with the addition of three charters from close localities in Northern Latium (Tuscania and Viterbo; see Figure 1).

A total number of 16 scribes were identified as authors within the corpus, the majority of whom were responsible for composing only a single text. More in detail, the *notarius* Firmus composed three texts, Trasimundus, Domnulinus, and Aboald were authors of two texts each, whereas Bonifatius, Warnegaus, Gausualdu, Gaidilapus, Appo, Laurentius, Gauspert, Waldiperto, Tachinolfu, Bonifrid, Ferruccio and Maurino composed one text.

Each text was carefully examined and annotated, following the criteria adopted for the LLDB database, cf. Adamik (2016a). We are aware that in the 8th century, Latin no longer adhered strictly to the classical norms established in earlier periods, as the language had evolved considerably in both written and spoken forms (see, among others, Cuzzolin & Haverling 2009, 55). However, despite this linguistic fluidity, adopting a common baseline for annotation was essential to ensure comparability across the corpus. For this reason, acknowledging the caveats of this methodology, we referenced Classical norms as a standardized framework, to be able to identify and annotate words and features that diverged from these conventions. This approach allows for systematic analysis of linguistic variation while providing a consistent point of reference for tracking the evolution of Latin in private legal contexts. In this framework, 'divergent' spellings, i.e. spellings that do not conform to the classical norm, were manually retrieved and classified according to the type of variation phenomena that distinguish them from the corresponding

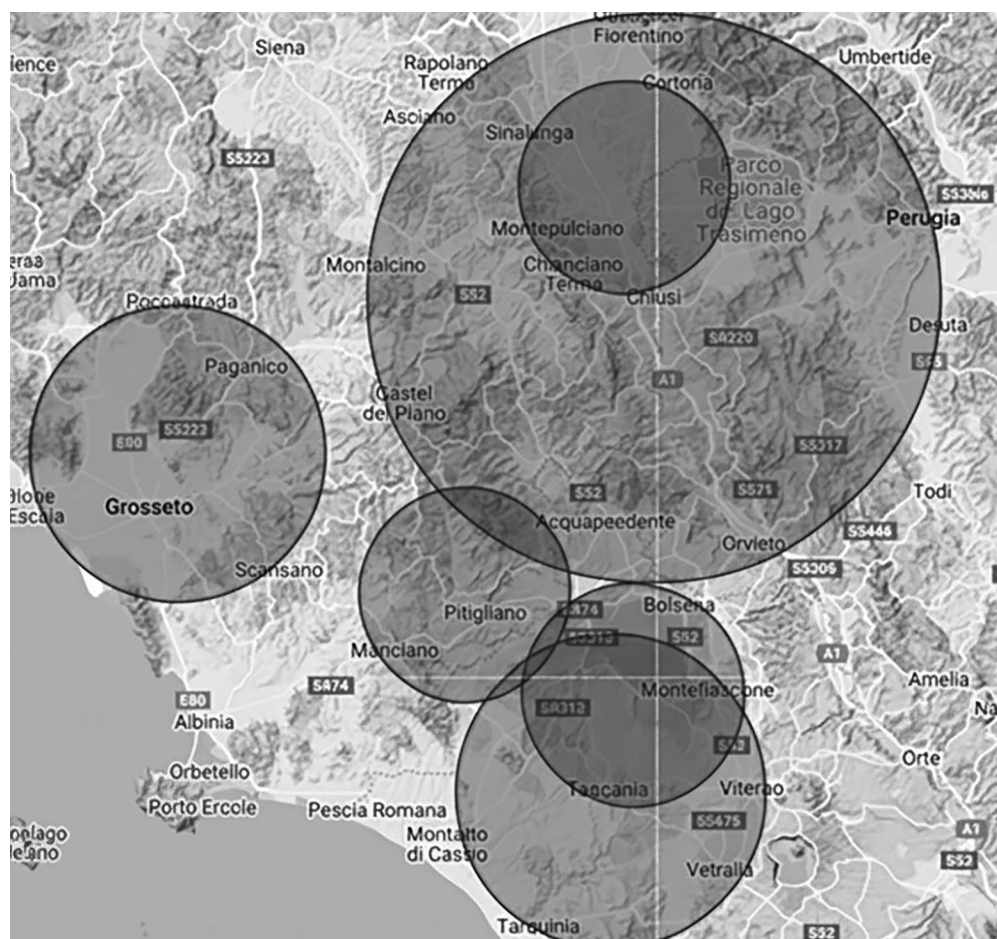


Figure 1. Geographic distribution of the texts

classical equivalents. In total, 3091 data forms were retrieved (i.e. 42% of the total words in the corpus; accessed on 24.01.2025). The identified phenomena involve various levels of linguistic analysis, i.e. graphic variants, morphological endings, lexical and syntactic phenomena. Each token is also annotated with extralinguistic information regarding the place of provenance, author and dating of each inscription. In this way, it was possible to relate these extralinguistic variables to the identified linguistic variants.

3. LINGUISTIC PROFILE

The fine-grained linguistic annotation performed on the corpus allows us to draw a preliminary ‘linguistic profile’ of the examined private charters from Tuscany (Figure 2).

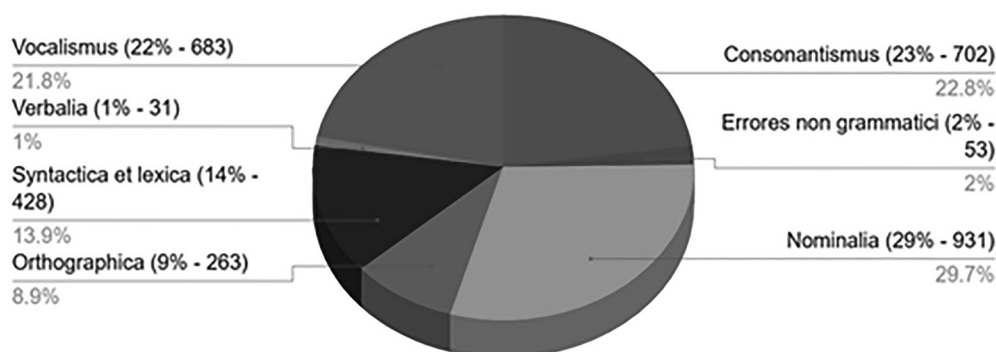


Figure 2. Linguistic profile of the charters in ChLA 23 (tot. = 3091)

Among the various types of graphic and linguistic phenomena examined, spellings involving vowels and consonants emerge as the most prevalent, encompassing a significant 45% of the total phenomena. This category is further divided into two sub-classes: ‘Consonantismus’, which addresses issues related to consonants (e.g. /<V> alternation, such as *octabo* for *octavo* ‘eighth’ ChLA 23 745, line 2; LLDB-157374), and ‘Vocalismus’, which deals with vowel-related phenomena (e.g. <E>/<I> alternation, such as *promittemus* for *promittimus* ‘we promise’ ChLA 23 737, line 18; LLDB-155770).

A first remarkable observation concerns the fact that the percentage of divergent spellings related to consonant and vowel phenomena is almost evenly distributed (V 683 = 49% vs C 702 = 51%, excluding other phenomena). However, if we compare these figures with the average distribution of vowels and consonants in Latin (V 43% vs. C 57%; see [Herman 1968 = 1990, 196](#)), it becomes apparent that vowel-related phenomena are slightly more frequent than expected, while consonant-related phenomena are slightly less frequent. This adjustment is crucial, since the methodology adopted here – already applied by [Herman \(1965, 1971, 1978, 1984, 2000\)](#) and [Adamik \(2016b, 2017a\)](#) – is sensitive to such imbalances within the system (see also [Tamponi 2022](#) on Sardinia). Our 8th-century charters thus appear to continue the general pattern already evidenced in inscriptions, though with a slight shift towards vowel-related phenomena. Taking the expected ratio into account, [Herman’s \(2000\)](#) figures for inscriptions from Etruria (45% vs. 55%) indicate a balanced system, with essentially equal intensity of development in both domains between the 4th and 7th centuries (cf. [Papini 2022](#)). What was equilibrium in the earlier inscriptions therefore persists in the documentary evidence of the early Middle Ages, albeit with a modest bias in favour of vowel changes.

The second most represented category of phenomena, however, is related to morphological endings concerning names, grouped under the label ‘Nominalia’ (29%). These phenomena focus on the forms and structures of names, with special reference to the writing of morphological cases (e.g. alternation between nominative and accusative, as in *firmavi () homo* for *firmavi () hominem* ‘I confirmed the man’ ChLA 23 748, line 3; LLDB-161133).¹ By contrast, following

¹The complex issues connected to morphological change from Latin to Romance cannot be fully addressed in this paper due to space limitations. For an overview of the problem, see, among others, [Clackson & Horrocks \(2007, 277 ff.\)](#); [Pinkster \(2015, 1237–1238\)](#) and references therein.

LLDB conventions, phenomena classified as ‘Ortographica’ are separated out as purely orthographic – including non-standard spelling practices or graphic conventions that merely attest to linguistic changes no longer active, such as the confusion between <AE> and <E> (Adamik 2021, 5).

Given the substantial representation of grapho-phonological phenomena in the data, the present analysis will prioritize an in-depth examination of the two primary macro-classes – Consonantismus and Vocalismus – to better understand their contribution to the overall linguistic patterns observed.

4. CONSONANT SYSTEM: /<V> ALTERNATION

4.1. Overview

A detailed examination of the consonant system highlights that the most frequent phenomenon involving consonantism is the confusion between and <V> (e.g. *bindedit* for *vendidit* ‘he/she sold’, *vene* for *bene* ‘well’). When aggregating all instances of /<V> confusions observed across various linguistic contexts, these account for 166 occurrences, making up a significant proportion of the total 702 consonantal divergent spellings identified in the data (ca. 24%; Figure 3). This significant proportion not only underscores the prevalence of this phenomenon but also invites deeper analysis of its linguistic underpinnings.

As is known, /<V> alternations are documented from earlier times in Latin documentary sources, already from inscriptions dating back to at least the first century CE (Sturtevant 1920, 43;

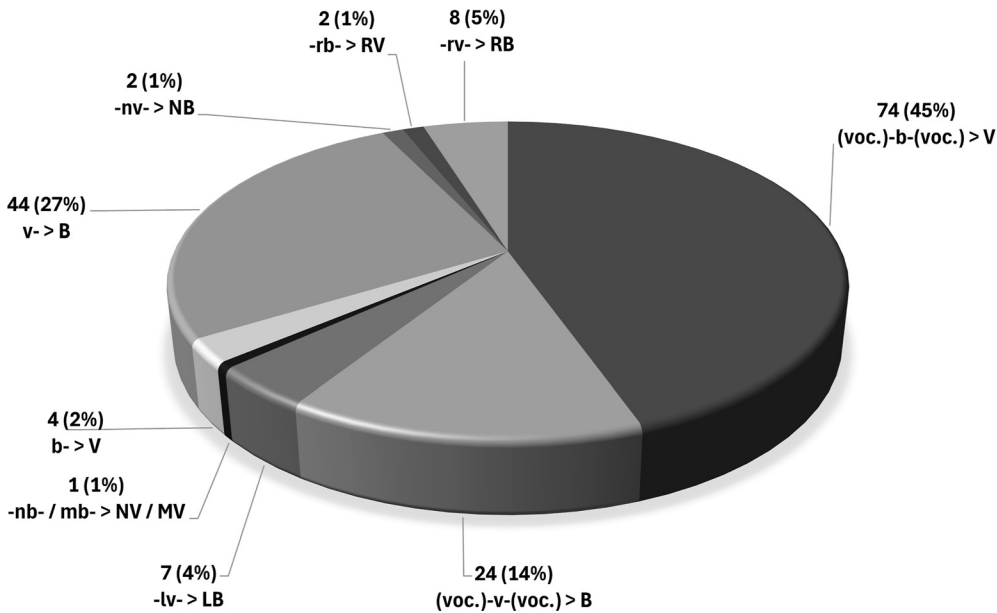


Figure 3. Phenomena involving /<V> confusions in the corpus (tot. 166)

Adams 2013, 183). Similar alternations also appear in non-literary sources like the Bu Njem ostraca and the Albertini tablets (Adams 2007, 644 ff.). These substitutions are traditionally attributed to the partial merger of the Classical Latin bilabial voiced stop /b/ and the labiovelar semivowel /w/ into a bilabial fricative [β], which was represented in Latin script as either or <V> (see e.g. Allen 1968, 41; Herman 2000, 38–39; Adamik 2017a, 15; Tamponi 2024). This explanation is supported by ancient grammatical sources, such as Velius Longus (Keil *Gramm. Lat.* VII 58.17–19), who describes the pronunciation of /w/ *cum aliqua adspiratione*, and Priscianus (Keil *Gramm. Lat.* V 23.9–10), who notes that *pro u consonante b ponitur*. Additional evidence comes from the *differentiae uerborum* corpus, which includes pairs of Latin homophones such as *labat/lauat* and *iubat/iuuat* (see, for example, the *Appendix Probi*; Mancini 2005, 148), and from Martyrius' treatise *De B muta et V uocali* (Keil *Gramm. Lat.* VII 165–199), which discusses pairs like *uis/bis* and *bos/uos*. While the treatise primarily addresses orthographic issues, it may also reflect a phonetic overlap between /b/ and /w/ (De Paolis 2010). This confusion is also widely attested in medieval documents. Among earlier studies, a fundamental contribution is Larson (1988), widely cited in the literature and recognised as an essential point of reference for linguistic analysis of the documents from the *Codice Diplomatico Longobardo* (also including some of the documents examined in this paper). Larson (1988, §11) observes that in the *Codice Diplomatico Longobardo* there is a very high number of instances of <V> for Classical Latin , occurring in all positions and across virtually all lexical items, whereas cases of for <V> are comparatively rarer. The substitutions of <V> for are thus interpreted as hypercorrect spellings (cf. *infra* for further discussion). Larson (1988, §11.2) also notes a considerable number of instances of initial for <V>, which are interpreted as a generalization of the hypercorrect use of rather than as evidence of a phonetic tendency towards betacism. Yet, the possibility of a phonetic explanation is not examined in depth in his analysis – for instance, the distribution of these forms in phonosyntactic position is not investigated in detail (cf. *ultra*) – and therefore remains open.

The studies conducted so far on the available epigraphic material also reveal an uneven distribution of the substitutions, with the vast majority of occurrences involving the use of the grapheme for the bilabial stop in place of the one for the semivowel <V> (see e.g. data from Late Christian inscriptions by Barbarino 1978 and the Sardinian and African material by Tamponi 2022, 2024).

4.2. Data analysis

Against this background, the present study undertakes a systematic re-examination of the texts from our corpus. By combining quantitative analysis with close attention to the distribution of forms in phonosyntactic position, it aims to provide a more precise assessment of the nature and spread of /<V> substitutions in early medieval documentary Latin.

In our corpus, the confusions between and <V> are equally distributed, with substitutions of for <V> (e.g. *bindedit* for *vendedit* 'he/she sold') amounting to 85 and those of <V> for (e.g. *scrivere* for *scribere* 'to write') totalling 81 instances. These data provide an opportunity to investigate whether these patterns align with the phonological developments characteristic of the Romance languages.

In Tuscany – the area we are currently examining – both /b/ and /w/ evolved to a labiodental fricative [v] in intervocalic position, coherently with the general pattern displayed in Italian, as seen in examples such as Lat. *habere* 'to have' > It. *avere* and Lat. *caballu(m)* 'horse' > It. *cavallo*.

However, in initial and post-consonantal positions, the two phonemes remained distinct, as evidenced by forms like Lat. *barba(m)* ‘beard’ > It. *barba* vs. Lat. *vinu(m)* ‘wine’ > It. *vino* (initial), or Lat. *alba(m)* ‘white’ > It. *alba* vs. *salvat* ‘he/she saves’ > It. *salva* (post-consonantal). These observations raise the question of whether the distribution of /<V> confusions in our corpus might foreshadow this Romance evolution, offering early evidence of these trends.

One striking observation is the contextual variability in the substitutions. According to a preliminary analysis, instances of <V> for are predominantly found in intervocalic positions, with only three post-consonantal cases recorded among the 81 substitutions – mainly involving the -RB- cluster (*arvoribu* for *arboribus* ‘with the trees’, ChLA 23 734, line 11, LLDB-152368, and *supervia* for *superbia* ‘arrogance’, ChLA 23 748, line 14, LLDB-161839).² On the other hand, substitutions of for <V> exhibit greater positional diversity, occurring in a wider range of phonological environments (Table 1). Examples include *bolontate* for *voluntate* ‘with the will’ (ChLA 23 744, line 2; LLDB-156985), *octaba* for *octava* ‘eighth’ (ChLA 23 745, line 2; LLDB-157374),³ and *conserbata* for *conservata* ‘preserved’ (ChLA 23 744, line 9, LLDB-157207).

The most frequent lemmas involved in the alternation are *vos* ‘you’ (13 occurrences, in the forms *bos*, *bobis*, *bobis*), *habeo* ‘to have’ (10 occurrences, in the forms *aveo*, *avet*, *havire*, *avuet*), *tu* ‘you’ (7 occurrences, in the form *tivi*), as well as *vendo* ‘to sell’ and its derivatives (6 occurrences of *venditor* ‘seller’, in the forms *binditor* and *binditoris*, and 4 of *vendo*, in the forms *bindedimus*, *bindendi*, *bindedisse*, *binderes*). This pattern is expected given the nature of the corpus, which primarily consists of buying and selling agreements. Such texts frequently reference sellers (*venditor*), while pronouns (*vos*) and the verb *habeo* are common due to their utility in transactional language and formal agreements.

Table 1. /<V> confusions: context

Position	N.	%
Initial	45	53%
Intervocalic	25	29%
Postconsonantal	15	18%
Total	85	100%

²See e.g. Larson (1988, §11.2), who interprets such forms as hypercorrections, indicating a development of the Latin clusters and -lb- into -lv-, foreshadowing its Romance outcome.

³Larson (1988, §11.2) classifies the form *octabus* for *octavus* as “elements of *scripta*, without any value for the study of language,” justifying this view by its frequent occurrence in the *Codice Diplomatico Longobardo*, confined to chronological formulas (day, regnal year, indiction). Yet this explanation seems reductive: derivatives of *octavus* also appears in other documentary contexts (e.g. *octavodecimo* in the Siena charters ChLA 24, 763 l. 4 and ChLA 775, l. 5), and the coexistence of the variants suggests that we are not necessarily dealing with a mere scribal artifact, but possibly with a linguistic phenomenon that deserves closer consideration.

It is essential to emphasize that phonosyntax must also be considered in such an analysis. Scholars have suggested that the intervocalic merger of /b/ and /w/ in Latin may have extended across word boundaries (Niedermann 1991, 87–88; Väänänen 1981, 50). Examples such as *fratri vene merenti* or *qui bixit* (for *fratri bene merenti* ‘to the well-deserving brother’ and *qui vixit* ‘who lived’, respectively; Adamik 2017a, 25) might illustrate this possibility. However, other scholars reject this possibility for medieval documents (see Larson 1988, §11).

To account for external sandhi rules, we reclassified as intervocalic the instances of the phenomenon occurring in the word-initial position when the preceding word ends in a vowel (e.g. such as in *qui bixit*). Similarly, tokens preceded by a word ending in a consonant were grouped with other occurrences in post-consonantal positions. According to this analysis, the majority of cases exhibit the use of for <V> in intervocalic position, indicating a strong tendency for this substitution in these contexts. However, a notable number of instances also reveal uncertainty after a consonant, suggesting that the phenomenon was not strictly confined to intervocalic environments. The results of this classification are presented in Table 2.

This result is particularly relevant when considering the Romance development of the Tuscan variety. On the one hand, it seems to foreshadow the evolution of both the bilabial stop /b/ and the labiovelar semivowel /w/ into a single labiodental fricative [v] in intervocalic position. On the other hand, however, the fact that in our corpus confusion between and <V> is observed also in non-intervocalic position suggests that at this stage the scribes exhibited a more general confusion between the graphemes, and possibly the respective phonemes. This confusion may also extend to contexts that, in the future, will not be affected by the Romance evolution, such as the post-consonantal position. This pattern indicates a consonant system moving towards a Romance outcome, but not yet fully realized. The evidence of such confusion, especially in non-intervocalic positions, seems to underscore the instability of the consonant system at this point in its development.

As a final note, this uncertainty is well exemplified by a specific instance recorded in a written source. In the charter ChLA 23 748, from *Rusellae* (Grosseto), dated to AD 772, the scribe Trasimundus corrected himself by overwriting <V> in place of in the phrase *homo libero* ‘as a free man’ at line 3 (LLDB-161135; Figure 4). This correction reflects the scribe’s uncertainty in this context, which corroborates the general confusion between and <V> observed in the data.

Table 2. /<V> confusions: context (phonosyntax)

Position	N.	%
Intervocalic	47	55%
Postconsonantal	38	45%
Total	85	100%

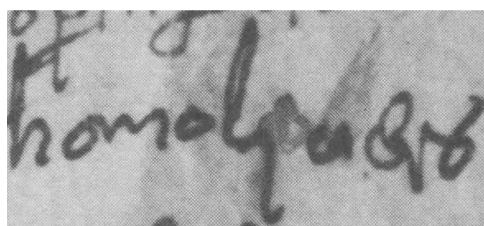


Figure 4. Homo livero (ChLA 23 748, line 3)

5. VOWEL SYSTEM: VOWEL ALTERNATIONS

5.1. Overview

Although several phenomena involving the writing of vowels can be observed (§3), the most pervasive ones involve vowel alternations, totalling 627 occurrences, i.e. more than 90% of the total 683 vowel phenomena.

Vowel alternations involving <E>, <I> and <O>, <U> (e.g. *menus* for *minus* ‘less’, *pocolom* for *poculum* ‘bowl’) are recorded in Latin documentary records – notably in inscriptions – as early as the 3rd century BCE, and their increasing frequency continues to be attested in subsequent centuries across several areas of the Empire. Major reference grammars of Latin have taken these alternations into account, interpreting them as potential evidence of the close qualitative affinity between Lat. /i/, /e:/ (both spelled <E>) and /u/, /o:/ (both spelled <O>) (see e.g. Allen 1978 [1965¹], 49; Leumann 1977, 45, 51). The phenomenon has therefore long been the subject of scholarly investigation, from archaic texts onwards (cf., among others, Herman 1965, 1971; Gaeng 1968; Campanile 1971; Loporcaro 2015; Marotta 2015; Papini 2017, 2022; Adamik 2017b), and it continues to be documented in the medieval charters.

An early systematic attempt to account for vowel alternations in early medieval charters is that of Politzer & Politzer (1953), who devoted part of their linguistic analysis of the *Codice Diplomatico Longobardo* to this issue. Although their study has been subject to criticism (cf. e.g. Löfstedt 1961, 15; Larson 1988, *Introduction*; 2000, 51), Politzer & Politzer (1953, 8 ff.) clearly show that vowel alternations are also found in early medieval texts. All types of confusions are recorded (<E> for <I>, <I> for <E>, <O> for <U>, <U> for <O>) and classified by vowel length in Classical Latin, stress, and syllable structure. Such alternations occur above all in unstressed syllables – most frequently <E> for CLat. /i/ and <O> for CLat. /u/ in penultimate syllables, and <I> for CLat. /e:/ in initial syllables – whereas in stressed syllables the system appears relatively stable, with sporadic deviations interpreted as orthographic rather than phonological, in line with the Romance outcomes.

A subsequent comprehensive and influential analysis on the *Codice Diplomatico Longobardo* is that of Larson (1988, §§1–3). Also in his survey, a high number of vowel alternations foreshadowing the Romance outcomes (<I> for CLat. /e/, <O> for CLat. /u/) is recorded. The scholar thus concludes that by the Lombard period the stressed vowel system was already comparable to the seven-vowel system of modern Tuscan. The scholar also records a high frequency of <I> and <U> for Classical Latin <E> and <O> (respectively) in positions corresponding to Italian [e] and [o] – generally referred to in the literature as ‘Carolingian spellings’ (e.g. Avalle 1968).

This datum is interpreted by the scholar as a conscious graphic strategy to differentiate the newly developed closed mid vowels from their open counterparts. While explicitly rejecting the explanation in terms of hypercorrection, on the grounds that it would be chronologically too late, Larson argues that the use of <I> and <U> reflects the attempt of scribes to represent vowels which, though already realized as mid /e/ and /o/, were perceived as relatively more closed than <E> and <O> (cf. §5.2 for further discussion on such spellings in our corpus).

5.2. Data analysis

The present analysis turns to the evidence from our corpus to reassess their incidence and distribution in a systematic way – distinguishing spellings that foreshadow this variety’s Romance outcomes (‘Romance spellings’) from those that do not (‘non-Romance spellings’), accounting for cases with non-phonological explanations, and examining lemma distribution to detect recurrent patterns. The incidence of the various types of vowel alternations in our corpus is illustrated in Figure 5.

Before delving into the discussion of this distributions’ linguistic implications, this picture should be refined through a closer examination of the forms. This step is essential, as some vowel alternations may instead reflect orthographic habits or other non-phonological factors that require separate consideration. In the next section, we therefore focus on these cases, before turning to the quantitative distribution of the remaining evidence, which might more directly reflect linguistic change.

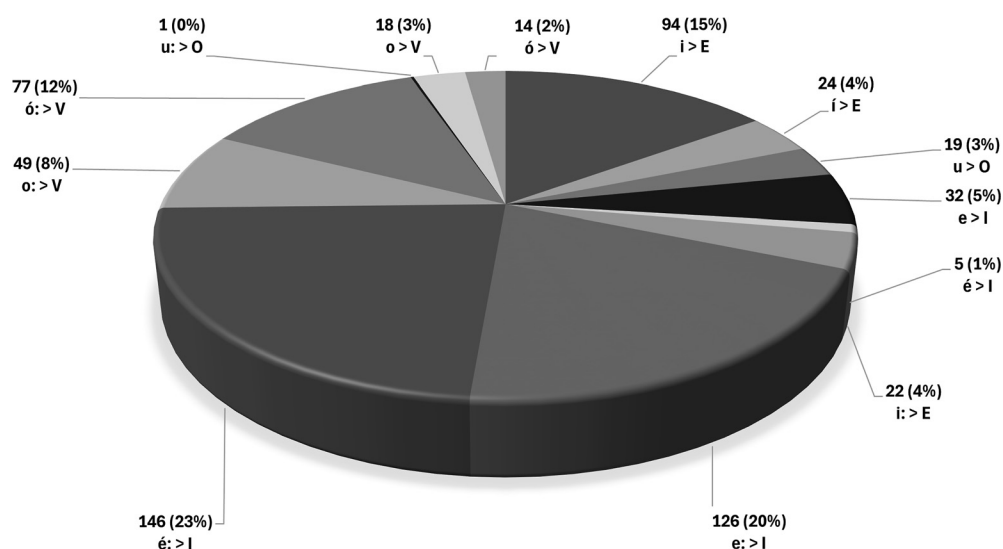


Figure 5. Phenomena involving vowel alternations in the corpus (tot. 627)

5.2.1. Non-phonological explanations of vowel alternations

5.2.1.1. ‘Romance’ spellings. As for the front axis, the alternation <E> for <I> (Classical Latin⁴ /i/) is recorded primarily in unstressed position (94 vs 24 occurrences): most of these instances (76) are, however, attributable to morphosyntactic factors. The instances should thus be left out of the analysis because they could be caused by non-phonetic reasons. More in detail, 25 occurrences involve the substitution of the ending *-et* for *-it* (e.g. *adduxet* for *adduxit* ‘he/she brought’, ChLA 23, 731, line 12; LLDB-148926; also recorded Politzer & Politzer 1953, 9 and Larson 1988, § 1.1); 37 tokens are annotated as ‘recompositio’ in the LLDB corpus. These forms, such as *vindedisse* for *vendidisse* ‘to have sold’, ChLA 23, 742, line 4, LLDB-156598, may have been influenced by analogical recombination with forms such as *dedi*. Finally, nine cases could involve material scribal mistakes, i.e. inversion of <I> and <E> (e.g. *cridemus* for *credimus* ‘we believe’, ChLA 23, 732, line 27; LLDB-150022). In addition, five cases could involve the substitution of nominative for genitive case (e.g. *manus Audiperti consentientes* for *manus Audiperti consentientis* ‘the hand of Audipertus giving consent’, ChLA 23, 738, line 37; LLDB-154920; cf. also Politzer & Politzer 1953, 9).⁵

However, other cases lack plausible alternative explanations and may reflect phonological instability: these include *soledus* for *solidus* (a gold coin, e.g. ChLA 23, 732, line 22; LLDB-149962), *menare* for *minari* ‘to threaten’ (e.g. ChLA 23, 731, line 12; LLDB-148929), and *omnebus* for *omnibus* ‘in all’ (e.g. ChLA 23, 732, line 26; LLDB-150021); for the stressed position, see e.g. *vinditor* for *venditor* ‘seller’ (e.g. ChLA 23 749, line 12; LLDB-160817).

As for the back axis, all cases of <O> for <U> (CLat. /u/) occur in unstressed syllables (tot. 19) and do not, for the most part, admit a morphological explanation, although some regularities can be observed: the most frequent form is *seo* for *seu* ‘or’ (10 instances, e.g. ChLA 23 730, line 4; LLDB-148235), attested in different charters and by different scribes (ChLA 730, 732, 735, 746). The only possible exception is *ad mano* for *ad manum* ‘by hand’ (ChLA 23 748, line 6; LLDB-161500), which could reflect both a replacement of the accusative by the ablative and a change of declension (second for fourth: *ad manum* > *ad manu* > *ad mano*) – although this remains a rather complex and thus possibly not entirely convincing explanation.

5.2.1.2. ‘Non-Romance’ spellings. As for the alternation <E> for <I> (CLat. /i:/), always recorded in unstressed syllables (tot. 22), most instances can have a morphosyntactic alternative explanation. Fourteen tokens (e.g. *in casale* for *in casali* ‘in the small settlement’) might represent ablative singular endings in *-e*, while two involve active-like treatment of deponent verbs

⁴Henceforth CLat.

⁵Admittedly, forms such as *consentientes* can be interpreted as plural forms, and a phonological explanation for the replacement of *-is* with *-es* may appear more straightforward, as it does not require assuming a shift in both case and number. Yet, the possibility of a morphosyntactic explanation based on case confusion cannot be entirely dismissed and such forms are not excluded from our analysis.

(e.g. *minare* for *minari* ‘to threaten’). Only six unexplained cases occur, linked to the lemmas *finitus* ‘determined’ (*fenitum* and *adfenitus*),⁶ *dimittere* ‘to dismiss’ (*demictendi*) and *aliubi* ‘elsewhere’ (*aliuve*).

126 instances of <I> for <E> (CLat. /e:/) are found in our corpus. However, approximately one-third of these cases (41 occurrences) can be attributed to morphosyntactic explanations, such as the nominative and accusative plural ending *-is* replacing *-es*.⁷ Examples include *exeamus inanis* for *exeamus inanes* ‘let us leave without claim’ (ChLA 23, 730, line 18; LLDB-148493) and *id est triginta pedis* for *id est triginta pedes* ‘that is, thirty feet’ (ChLA 23, 737, line 11; LLDB-154286). Table 3 summarizes the distribution.

Interestingly, most of the remaining 85 cases involve frequent lemmas such as *tremis* (a third of a *solidus*, i.e. a coin, e.g. *trimisse* for *tremisses*) and *vendo* ‘to sell’ and its derivatives (e.g. *bindedisse* for *vendidis*, *vindituris* for *venditoris*, *vinditione* for *venditione*). These forms align with the corpus’ focus on purchase agreements (§2). Notably, exceptions are rare; for example, the form *venditori* ‘seller’ occurs once (ChLA 23, 733, line 26, scribe Gausualdu; LLDB-151484). This pattern holds for the writing of CLat. stressed /e:/, where the 146 instances of <I> for <E> predominantly affect *vendo/venditor* ‘to sell’/‘seller’ (35 instances), alongside *heres* ‘heir’ (23 instances), and *res* ‘thing, property’ (15 instances; a pattern also evidenced by Larson 1988, §1.1). Note however that variants like *ribus* and *ris* could reflect the nominative/accusative plural *-is* replacing *-es*. Coherently with our observations for unstressed /e:/, across the volume, *vendo* and *venditor* consistently feature <I>. More variation is instead recorded for the lemma *res*, where <E> is displayed in 8 occurrences of *res* and one of *rebus* (ChLA 23 750, Chiusi, 774 AD, scribe Aboald: *qui rebus ipsis eorum donavit*, corresponding to *qui res ipsas eis donavit* ‘who gave the very things to them’).

The alternation <I> for <E> (CLat. /e/), primarily in unstressed positions (32 vs 5 occurrences), often has lexical or morphosyntactic explanations. For example, 3 occurrences of the

Table 3. Occurrences of <I> for /e:/ with an alternative morphosyntactic explanation

Alternative explanation	N.	%
Nom./acc. <i>-is</i> for <i>-es</i>	41	33%
-	85	67%
Total	126	100%

⁶Larson (1988, § 1.2) suggests that the form *fenito* may result from dissimilation of the first of the two vowels (both long in Classical Latin), and notes that the variant is well attested in late texts, including those from France and Spain. This account, however, is in our opinion not entirely convincing. Vowel dissimilation is neither common nor systematic in the Medieval Latin material under consideration, even if isolated cases are attested; more importantly, vowel quantity was no longer phonologically relevant at this stage (cf. e.g. Straka 1959; Loporcaro 2015, with further references), which undermines the motivation based on two identical long vowels in sequence. Since the change is not regular across comparable contexts, an alternative explanation appears preferable.

⁷On the study of the evolution of the Romance plural endings applied to notarial charters, see recently Sornicola (2022) and references therein.

type *pine nomini* (for *poenae nomine* ‘by way of a penalty’, e.g. ChLA 23, 730, line 18; LLDB-149234) might be interpreted as an ablative singular *-i* for *-e*. Also an instance of ending *-ire* for *-ere* is recorded (*competire* for *competere* ‘to belong to’, ChLA 23 745, line 29; LLDB-157676). The lemma *vendo* ‘to sell’ and its derivatives also recur, with 16 cases (e.g. *vinditionem* ‘sale’). In stressed positions, the pattern remains lexically confined: most of them are relative to the lemma *vendo* and its derivatives (2 instances of *vinditor* for *venditor* and 2 of *vindedit* for *vendedit*), all of them in the same charter ChLA 23, 749, and one of *sorticilla* (for *sorticella* ‘part’; LLDB-153012).

Among the 49 instances of <U> for <O> (CLat. /o:/) in unstressed position, 25 occurrences might be interpreted as an accusative ending in *-u* for an ablative ending in *-o* (e.g. *a supra-scriptu* ‘from the above-written’ ChLA 23 734, line 13, LLDB-152606) and 6 cases could be regarded as singular for plural forms (e.g. *soledus duo* ‘two solidi’ (i.e. two gold coins) ChLA 23, 732, line 22; LLDB-149962). In contrast, the 77 occurrences in stressed position do not seem to have such an immediate morphological explanation. More than half of the 77 total instances involve the formative element *-or-* in forms ending in *-uri(s)* for *-oris/-ores* (45 in total; e.g. *vindituri* for *venditoris* ‘of the seller’, *emturi* for *emptoris* ‘of the buyer’, *promissuris* for *promissoris* ‘of the promisor’), suggesting a recurring pattern (as already pointed out by Larson 1988, §2.1), but one that does not admit a straightforward morphological explanation – unless one hypothesizes some influence from the participial *-urus*, which is, however, not convincing, since the two elements are formally comparable but functionally different.

The alternation <U> for <O> (CLat. /o:/) is recorded for 32 forms. In unstressed syllables (tot. 18), this alternation often involves the prefix *com-/con-* (6 instances: e.g. *cunpellaverit* for *compellaverit* ‘he/she will have compelled’, ChLA 23, 735, line 11; LLDB-153785). Additional occurrences involve the forms *purecta* or *purectas* for *porrectam* ‘extended’ (two occurrences: ChLA 23 742, line 5, and ChLA 23 741, line 5; LLDB-156608 and LLDB-156056), *munasterio* for *monasterii* ‘of the monastery’ (ChLA 23 730, line 8; LLDB-148231). These alternations in stressed syllables (tot. 14) show instead a more localized distribution. In particular, 6 occurrences involve the form *spundeo* for *spondeo* ‘I pledge’, and occur in two charters written by the same scribe, Trasimundus (ChLA 23, 748 and 747), suggesting that this form might be scribe-specific and offer limited insights into broader linguistic trends. The remaining occurrences involve the lemma *longus* ‘long’, in the forms *lungu* (e.g. ChLA 23 749, line 7; LLDB-160572; also discussed by Larson 1988, §2.1 as a possible phonetic spelling), and *hortus* ‘garden’, in the form *urto* (e.g. ChLA 23 735, line 4; LLDB-153094).

The only instance of <O> for <U> (CLat. /u:/), found in unstressed position, *decesso meo* for *decessu meo* ‘at my death’ (ChLA 23 745, line 20; LLDB-157620) can be explained as a dative ending reassigned to the second rather than the fourth declension.

5.3. Quantitative analysis and linguistic implications

As a result of the qualitative analysis, the number of vowel alternations under consideration has significantly decreased (from 627 to 451). Nevertheless, these alternations remain central to the overall pattern of vowel spelling in the dataset (§3). If we exclude from the total those cases that can be explained by non-phonological factors, the overall percentage of vowel alternations still amounts to 15% (451 over 2915 total spellings). The distribution of the different types of alternation is presented in Figure 6.

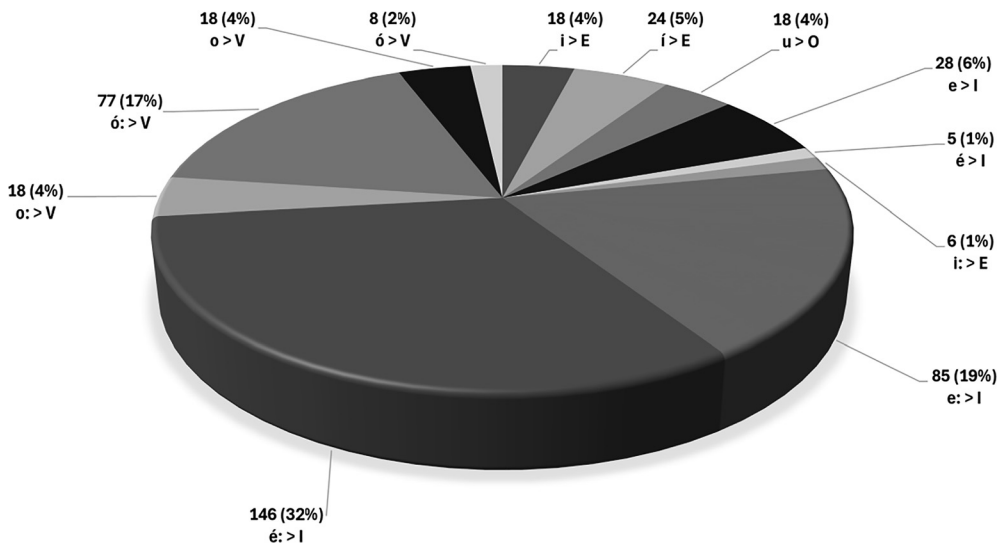


Figure 6. Phenomena involving vowel alternations in the corpus, excluding those with alternative explanations (tot. 451)

On the front axis, the spelling of CLat. <E> as <I> (264 tokens, 58%) and <I> as <E> (48 tokens, 10%), occurring both in stressed and unstressed positions and for both CLat. long and short /e/ and /i/, account for more than two-thirds of all vowel-related phenomena (tot. 312, 68%). On the back axis, we observe the spelling of <O> as <U> in both stressed and unstressed positions (121 tokens, 27%) and, more marginally, of <U> as <O> (18 tokens, 4%).

Thus, if we consider all vowel alternations – excluding those that can be explained morpho-syntactically – we record twice as many <E>/<I> confusions as <O>/<U> confusions. Since [Herman's \(1968\)](#) statistics on Cicero's letters, it has been known that Latin generally shows twice as many occurrences of <E> and <I> as of <O> and <U> (ratio ca. 2:1; [Herman 1968](#), 243). This suggests that the two vowel mergers occurred with comparable intensity in the Latin variety represented by our corpus. Furthermore, the same proportions are recorded when only Romance spellings that directly foreshadow the Romance outcomes of this variety are taken into account. On the front axis, 42 instances of <E> for <I> (CLat. /i/) are attested (9% of the total). On the back axis, 18 instances of <O> for <U> (CLat. /u/) are attested (4%), i.e. almost a 2:1 proportion.

It is also noteworthy that many spellings recorded in our corpus do not directly foreshadow Romance outcomes, in fact outnumbering the 'Romance' spellings. As is well known, in Tuscan varieties the outcome of CLat. /e:/ is typically /e/ (both in stressed and unstressed syllables; [Loporcaro 2015](#), 32 ff.). However, in our charters, CLat. /e:/ is represented by <I> in a relatively high number of cases, both in stressed and unstressed positions (tot. 231 tokens, 51% of all vowel-related phenomena). Similarly, on the back axis, the outcome of CLat. /o:/ is /o/ in both stressed and unstressed syllables, whereas in our corpus CLat. /o:/ is also represented by <U> in both stressed and unstressed positions (95 tokens, 21%). As mentioned in §5.1, these spellings –

involving <I> and <U> for Classical Latin <E> and <O> (respectively) in positions corresponding to Italian [e] and [o] – are generally referred to in the literature concerning the documents of our corpus as ‘Carolingian spellings’ (e.g. [Avalle 1968](#)). Different interpretations have been proposed for these forms: they have been understood either as instances of hypercorrection or as attempts by scribes to represent vowels which, though already realized as mid /e/ and /o/, were perceived as relatively more closed than their open counterparts (see e.g. the discussion in [Larson 1988, 2000](#) for our documents).

This latter hypothesis, however, is not exempt from problems. Firstly, it cannot be assumed with certainty that the scribes possessed the degree of phonological awareness necessary to deliberately distinguish between open and closed mid vowels; moreover, the evidence reveals a substantial degree of fluctuation in the use of <E>/<I> and <O>/<U> across different contexts. Such high variability on the one hand, and a supposed conscious differentiation between [e]/[ɛ] and [o]/[ɔ] on the other, are not entirely compatible. While such an interpretation cannot be entirely excluded, it seems more cautious to speak of a general vowel confusion, where certain spellings may already foreshadow the later Romance configuration, reflecting a closed pronunciation of CLat. /i/ and /u/, which may have led to spelling uncertainty.⁸

Taken together, our preliminary qualitative and quantitative analysis points to a widespread confusion affecting both the front and back axes. On the one hand, ‘Romance’ spellings and forms such as *vigenti* ‘twenty’, *trigenta* ‘thirty’, and *quingenta* ‘fifty’ (cf. also [Larson 1988](#), §1.2) seem to foreshadow Romance outcomes, suggesting an evolving vowel system. On the other hand, alternations not directly related to Romance developments might reinforce this picture, as they reveal scribal uncertainty in representing front and back vowels, possibly indicative of an unstable system that was moving towards its Romance configuration.

6. CONCLUSIONS

The charters examined here are a very useful source for linguistic analysis, given their nature of original, non-literary texts. Our study has demonstrated how it is possible to reconstruct a ‘linguistic profile’ for the charters in our corpus, revealing an evolving system (§3). A detailed examination of these phenomena shows a language in the process of change, with evidence of shifts that would later be incorporated into the Romance evolution of this variety. The uncertainty reflected in the graphical representation of the texts seems to indicate this ongoing instability (§4). By situating these findings within their broader historical and linguistic context, this study underscores the dynamic nature of Latin as it evolved in the Southern Tuscan area. The insights gained from ChLA 23 also contribute to broader discussions on the change from Latin to this area’s Romance variety. Future research, including the expansion of the LLDB database and comparisons with other regional corpora, promises to further illuminate the

⁸Future research will also need to assess more systematically the proportion of spellings that conform to the expected norm in our corpus – such as <E> for /e:/ and <O> for /o:/ – in order to evaluate the possibility that the corpus is skewed with respect to [Herman’s \(1968\)](#) statistics. Such a bias could result from e.g. documentary gaps, the use of abbreviations, or other textual contingencies, and must be considered in light of the comparison with Cicero’s letters, which represent a different textual genre.

mechanisms and contexts of these linguistic phenomena, paving the way for new discoveries in the study of historical linguistics.

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