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Continuity and Discontinuity in Substandard Latin: Three Case Studies on Phonology and Orthography

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Abbreviations

<i>AIS</i>	Jaberg, Karl & Jud, Jakob (1928-1940), <i>Sprach-und Sachatlas Italiens und der Südschweiz</i> , Zofingen, Ringier, 8 voll. (online version https://www3.pd.istc.cnr.it/navigais-web/)
Arab	Arabic
Aram	Aramaic
Arum	Aromanian
<i>CEL</i>	see Cugusi (1992-2002)
<i>C. Gloss. Biling. I</i>	see Kramer (1981)
<i>C. Gloss. Biling. II</i>	see Kramer (2001)
<i>CGL</i>	C. Goetz <i>et al.</i> <i>Corpus glossariorum Latinorum</i> , 7 vols (Leipzig and Berlin, 1888-1923)
ChLA	<i>Chartae Latinae Antiquiores</i> 118 vols. (1954-2019)
<i>CIL</i>	<i>Corpus Inscriptionum Latinarum</i> (Berlin 1862-)
<i>CPL</i>	See Cavenaile (1958)
<i>DEI</i>	Battisti, C. Alessio & G. (1950-1957), <i>Dizionario etimologico italiano</i> , Barbèra, Firenze.
<i>DELI</i>	Cortelazzo, M. & Zolli, P. (1979-1988), <i>Dizionario etimologico della lingua italiana</i> , Zanichelli, Bologna.
<i>DELL</i>	Ernout, A. & MEILLET, A. (1985 ⁴), <i>Dictionnaire étymologique de la langue latine: histoire des mots</i> , Klincksieck, Paris.
<i>EDLIL</i>	see De Vaan (2008)
<i>FEW</i>	W. von Wartburg, <i>Französisches etymologisches Wörterbuch</i> (Bonn, 1928-)
Fr	French
<i>K</i>	H. Keil, <i>Grammatici Latini</i> , 8 vols. (Leipzig, 1855-80)
<i>ILCV</i>	E. Diehl, <i>Inscriptiones Latinae Christianae veteres</i> , 3 vols. (Berlin 1925-31)
<i>ILLRP</i>	A. Degrassi, <i>Inscriptiones Latinae liberae rei publicae</i> , 2 vols (I 2nd edn 1965, II 1963)

ILS	H. Dessau, <i>Inscriptiones Latinae selectae</i> , 3 vols. (Berlin, 1892-1916)
Cat	Catalan
La Graufesenque	see Marichal (1988)
LEI	M. Pfister, <i>LEI: Lessico etimologico italiano</i> (Wiesbaden, 1979-)
LEW	Walde, A. and Hofmann, J. B. (1938-54), <i>Lateinisches etymologisches Wörterbuch</i> , 3 rd edn, 2 vols. (Heidelberg)
Log	Logudorese Sardinian
LSJ	H. G. Liddel and R. Scott, <i>A Greel-English Lexicon</i> (revised and augmented by H. S. Jones, with a recise supplement) (Oxford, 1996)
Neap	Neapolitan
O. Bu Njem	see Marichal (1992)
O. Did.	see Cuvigny, H., Bülow-Jacobsen, A., Eristov, H., Briquel-Chatonnet, F., & Gagos, T. (2012)
O. Faw.	see Guéraud (1942)
OHG	Old High German
OLD	<i>Oxford London Dictionary</i> (Oxford 1968-82)
OPEL	<i>Onomasticon Provinciarum Europae Latinarum</i> (vols. 1-4)
P.Ital.	TJÄDER, J.-O. 1955-1982: <i>Die nicht-literarischen lateinischen Papyri Italiens aus der Zeit 445 - 700</i> , vols. I-II, Svenska Institutet i Rom, Almqvist & Wiksell, Uppsala.
Preisigke, Wörterbuch	Preisigke, Friedrich 1924-1927, <i>Wörterbuch der griechischen Papyrusurkunden mit Einschluss der griechischen Inschriften, Aufschriften, Ostraka, Mumienschilder, usw.</i> , 2 Bände, Selbstverlag der Erben, Berlin.
Ptg	Portuguese
REW	W. Meyer-Lübke, <i>Romanisches etymologisches Wörterbuch</i> , 3rd edn (Heidelberg, 1935)
Rum	Romanian
Sp	Spanish
Tab.Vindol.	see Bowman and Thomas (1983), (1994), (2003); Bowman Thomas and Tomlin (2010)
Tabl.Alb.	Courtois, C.; Leschi, L.; Perrat, C. & Saumagne, C. (1952), <i>Tablettes Albertini: actes privés del'époque vandal (fin due Ve siècle)</i> , Paris.

<i>TLL</i>	<i>Thesaurus Linguae Latinae</i> (Leipzig 1900-)
<i>TPSulp.</i>	Camodeca, G. (1999), <i>Tabulae Pompeianae Sulpiciorum</i> (<i>TPSulp.</i>): <i>edizione critica dell'archivio puteolano dei Sulpicii</i> , 2 vols. Rome.
Tsc	Tuscan
Wessely, Schrifttafeln	Wessely, Carl 1898: <i>Schrifttafeln zur älteren lateinischen Paläographie</i> , Leipzig.

Ancient authors are cited according to the criteria of *TLL* and *LSJ*. For the abbreviation of other epigraphic and papyraceous corpora, we refer to <http://manfredclaus.de/it/index.html>; <https://www.trismegistos.org/tm/>; <https://inscriptions.packhum.org/biblio.html>

Preface

This work aims at analyzing some grapho-phonological phenomena of Latin as attested in primary sources, i.e., inscriptions, papyri, tablets, and ostraca.

The examined phenomena, i.e., vowel prosthesis before *sC*, *geminatio consonantium*, and the treatment of *-kt-* - are suitable in different degrees for analyses in a diasystematic perspective. In fact, our purpose is to investigate some processes of change with a fine-grained approach pointed at reconstructing the pieces that depict the historical path of linguistic facts. In this way, it will be possible to highlight continuity and discontinuity elements both within the Latin tradition and the Latin-Greek diasystem and within the Latin-Romance continuum. The selected phenomena, in particular, call into question several factors that require an analysis that goes beyond the diachronic level and for which a comprehensive study is still lacking.

The work consists of 4 chapters. The first one is an introductory chapter, which aims to provide a framework for the analyses carried out, while chapters 2, 3, and 4 present the studies hereto addressed.

CHAPTER 1 will offer a general overview of the current trend of historical sociolinguistics (§ 1.1). Then, it will focus on the continuing study tradition that has analyzed the history of the Latin language in a "sociolinguistically oriented" perspective (§ 1.2). Next, we shall address some methodological problems concerning the possibility of inferring elements of variation from the analysis of primary sources data (§ 1.3) by highlighting the issues raised by exclusively quantitative or qualitative analyses. The research method we are going to pursue, in fact, tries to espouse both perspectives, even though the work is generally more inclined to favor qualitative analysis. Indeed, it is precisely the particular perspective that will enable us to grasp better the aspects related to the description of the change and its interaction with external factors. After introducing the case studies that will be examined and highlighting the motivations that led to the choice of these phenomena (§ 1.4), the method employed for data collection will be described (§ 1.5).

CHAPTER 2 examines a phenomenon that has solicited much attention on the Latinists' and Romanists' front as well as in theoretical phonology, namely vowel prosthesis before *sC*. After a brief excursus on the current Romance situation and the diachronic evolution of the phenomenon from

the medieval documentation (§ 2.1), we shall outline the main theoretical problems concerning the syllabification of this cluster (§ 2.2), which, although not in accordance with the sonority sequency principle, does not easily fit into clear-cut categorizations, as the evolution itself from Latin to Romance shows. Next (§ 2.3), we shall outline the problems that emerge from previous studies, with particular reference to vowel prosthesis in Latin and Koine Greek documentation. In § 2.4, we shall present an overview of the data collected for both linguistic traditions and provide a preliminary linguistic analysis, raising some key issues. In § 2.5, we shall offer some essays on the epigraphic and papyraceous documentation to capture, through detailed analysis, the embedding of this phenomenology in linguistic and social structures. Finally (§ 2.6), we will present a synopsis of the phases of change, aimed at underlining the stages of actuation, embedding, transition, and evaluation.

CHAPTER 3 will be concerned with an articulated phenomenon, i.e., consonantal gemination, and is inserted in the framework of a long study tradition that has paid particular attention to spontaneous gemination phenomena. However, the documentary material has never been adequately considered so far. After an introductory section on the evolutionary processes leading to the geminated consonants in the Latin phonological inventory (§ 3.1), we shall present some specific sub-studies on different phenomena that are suitable for sociolinguistic analyses. In § 3.2, we shall examine the emergence of the *geminatio consonantium*, by emphasizing the discontinuity between marginal phenomena of interference and the phase in which an explicit choice leads to the diffusion of the phenomenon from above. In § 3.3, we will examine a particular case of gemination, so far not adequately investigated, namely the gemination of preconsonantal /s/, which, although poorly represented, is worthy of an intriguing analysis in a "socio-graphic" sense. In § 3.4, we will re-address the long-debated question of *lex littera*, proposing the analysis of a new lemma that would fit into this pattern. The data will allow us to see the stages of the change in progress. In § 3.5, we will review some phonological phenomena: gemination before /j/ and /r/, and gemination in intervocalic context, highlighting, where possible, some aspects of regional and social differentiation.

CHAPTER 4 examines the treatment of /kt/ in the Latin documentation. After an examination of the multiple outcomes of /kt/ in the Romance framework and the problems related to the treatments of /kt/ in the Latin documentation, in the context of the issue of the continuity of substratum phenomena (§ 4.1), we will proceed to the analysis of the data (§ 4.2). Due to the uncertainty of the documentary framework, we will present a detailed list of the collected forms.

Next, we will examine some internal and external aspects: the phonological value to be attributed to the spelling <t>, the occurrence of this treatment according to lexical types, the geographical and chronological distribution of the spelling variants of /kt/. Finally, we will proceed to an analysis by synchronic cuts to place the collected variants on the axis of synchronic variation.

Chapter 1

Epistemological and methodological issues

1.1 Historical (socio)linguistics

1.1.1 Introductory remarks

The present work aims to carry out a punctiform analysis of three grapho-phonological phenomena within Latin primary sources. These phenomena, i.e., vowel prosthesis before word-initial sC, consonant gemination, and *-kt-* outcomes (cf. § 1.4), albeit well-known in the study tradition, require a review based on updated and richer data. The analysis is meant to be both diachronic and internal, attentive to structural aspects of the linguistic datum, and historical, according to a long-standing tradition within Latin linguistics, and to a certain extent, the correlative sociolinguistic model. The study will be carried out through an empirical-inductive approach, and the typology of the description will be both at a macro- and micro-sociolinguistic level, depending on the empirical evidence.

In the last decades, Latin linguistics, as well as historical linguistics in general, have adopted a sociolinguistically oriented perspective, as emerges, for example, in the essays collected in Molinelli & Putzu (2015, eds.) and Molinelli (2017, ed.). With regard to Latin, a sociolinguistic perspective underlies several historical profiles of the Latin language, such as Poccetti, Poli & Santini (1999), Clackson & Horrocks (2007) and Clackson (2011, ed.), as well as the well-known monographs by J.N. Adams (2003a, 2007, 2013), and many studies collected in Baldi & Cuzzolin (2009-211, eds.; notably Cuzzolin & Haverling 2009). Indeed, a sociolinguistic perspective *lato sensu*, or rather a historical perspective, has always characterized Latin linguistics, for two main reasons which will be further examined (cf. § 1.2): on the one hand, the tradition of the studies introduced by the French sociological school and Italian historicism, emblematically represented by Antoine Meillet's and Giacomo Devoto's works (cf. ft. 10); on the other hand, the vast amount of data (if compared to other

ancient languages) and the issue of the fragmentation of an (illusory) homogeneity in a plurality of linguistic varieties, in conjunction with the problems raised by geolinguistics and dialectology.

Before focusing on specific considerations upon the history of Latin and the description of the empirical basis this study deals with, we shall briefly dwell on some general epistemological and methodological issues which affect historical linguistics. Indeed, the prefix *socio-* is not that essential to define a specific subfield of historical linguistics. By definition, historical linguistics is concerned with the problem of language change in relation to Saussure's external factors, i.e., broadly speaking, history. It is worth noting that Labov himself argues that the prefix *socio-* in "sociolinguistics" is redundant because sociolinguistics is but linguistics, neither is an autonomous branch nor even a field of sociology.¹

However, the possibility of relating language change to external factors is not always possible. This solely depends on two closely interrelated factors, i.e., the available amount of data for a given linguistic tradition and, consequently, the pursued aims (i.e., explanation or description, cf Lazzeroni 2016, 2019). That the linguistic change represented in a diachronic formula of type A → B, is always related to historical factors is almost unquestioned, for the simple assumption that language is the concrete act of speakers embedded in a socio-historical dimension. Therefore, depending on unpredictable paths related to the interactions within a given speech community or catastrophic events such as wars, massive (e)migrations, or even natural cataclysms, it is highly conceivable that something within a given language, if not the entire language, changes (either gradually, or suddenly; cf. Mioni 2000). However, as Meillet (1921)² observed, trying to trace the historical reasons connected to language change necessarily entails hypothetical speculations and cannot lead to positive knowledge, given the inherent impossibility of observing particular facts that do not follow immanent laws (i.e., socio-historical facts).

¹ Cf. Labov (1972b, p. 183): «'sociolinguistics' [...] is a somewhat misleading use of an oddly redundant term. Language is a form of social behavior [...] In what a way, then, can 'sociolinguistics' be considered as something apart from 'linguistics'?».

² «Quoi qu'il soit des faits particuliers, le linguiste n'envisage dans tous ces cas que des correspondances; ce sont les seuls faits positifs qui lui soient données; le rest n'est que théorie et construction hypothétique. Ces correspondances supposent des changements reels qui ont eu lieu à certaines dates en certains lieux; mais ells n'indiquent rien sur les faits reels dont ells résultent; on ne peut sur ces faits faire que des suppositions plus ou moins plausibles, et ceci même pour des développements voisins de l'époque actuelle et pour les idiomes les mieux connus» (p. 47).

1.1.2 Universal vs. Particular

The central aporia of linguistics lies in the opposition between nomothetic and idiographic approaches,³ and, broadly speaking, between long-standing dichotomies that affect the history of philosophy and science well, i.e., universal vs. particular, one vs. many, and static vs. dynamic. In a way, such dichotomies recall the distinction by Chambers (1995) between formal and theoretical linguistics, based on the axiom of categoricity, and the linguistics of *parole*. This is a direct consequence of the nature of language itself, which, on the one hand, is an inherent property of *Homo Sapiens*, provided with peculiar structures and prone to neurobiological, cognitive, and physiological principles, and contrastingly, a cultural product of a given community of speakers, evolving throughout history. For this reason, linguistics is on the border between “hard” and human sciences.

The application of either perspective depends on two main guidelines, i.e., the assumed theoretical perspective, and, as a consequence or cause of the former, the linguistic reality to be examined. Just to give some well-known examples: (i) the assumption that language has an autonomous life as though a natural organism, being thus independent of the history of the speakers, together with the comparative study of rarefied and written linguistic traditions, some of which still now require an exclusively diachronic approach, led to the famous *Stammbaumtheorie* by Schleicher; the Neo-Grammarians introduce the novelty of the study of living languages, but this novelty is focused, in a uniformitarian perspective, on the identification of psycho-mechanical principles operating regularly and without exceptions (cf. above all the manifesto by Osthoff & Brugmann, (1878, pp. iii-xx);⁴ (ii) the notion of synchronic system as

³ The formalization of the distinction between nomothetic and idiographic sciences was made, as is known, by the philosopher W. Windelband (1848-1915) in *Geschichte und Naturwissenschaft* (Windelband, 1894). Windelband's philosophical thought responded to the crisis of philosophy as an autonomous discipline, in consequence of the increasing specialization of knowledge and the fragmentation of philosophy classes (cf. Ziche, 2015, pp. 213-215). The task of philosophy is, therefore, a meta-philosophical reflection on a theory of knowledge. In this framework, by re-elaborating W. Dilthey's distinction between *Naturwissenschaften* and *Geisteswissenschaften*, Windelband distinguishes between nomothetic and idiographic sciences: the former, such as natural sciences, aim to discover a normative order in reality, regulated by universal laws; the latter, such as historical sciences, focus on the study of particular and individual facts.

⁴ The Uniformitarian Principle, firstly arisen in geological sciences (cf. § 1.1.3), led to the elaboration of the *Lautgesetz* (cf. Christy, 1983; Nerlich, 1990; Naumann, Plank, & Hofbauer, 1992). If changes of the Earth's surface can be explained by means of internal and cyclically recurring phenomena, linguistic change should also respond to regular processes, and the same phenomena that can be studied in modern languages must have operated in the past as well. Cf. Whitney

illustrated in the *Cours de linguistique générale* excludes the relevance of language change and history⁵ (cf. below for Coseriu's criticisms) and the *fait social*, which is acknowledged to be the *langue* is, however, independent from the speaker. Therefore, the application of structuralism to diachrony, outside Saussure's purposes, determined an immanent concept of language change, as noted by Weinreich, Labov, & Herzog (1968). In fact, the aim of diachronic phonology is identifying, through logical inference, the regularity of structural changes (cf. e.g. Jakobson 1962[1931]; Martinet, 1955);⁶ (iii) Noam Chomsky's focus on the neurobiological universal bases of human language and the human innate capability of producing grammatical sentences led to the *reductio ad unum* of the grammars of all languages and to the claim of studying universal properties by means of an «ideal speaker-listener, in a completely homogeneous speech community» (Chomsky, 1965, p. 3), without considering any external and historical element relevant to linguistic research (cf. Chomsky, 1975).

On the other hand, attention to the historical and dynamic dimension of language emerged, often as a reaction against previously mentioned paradigms, with the study of living languages displaying a high degree of variability, i.e., (i) the Romance varieties, especially Italian dialects, which led to geolinguistics and dialectology; (ii) variation as evidenced by big metropolis showing social stratification, which led to modern sociolinguistics; (iii) contact among different linguistic systems, whose intensity as well as consequences on linguistic structures is historically determined.

A fundamental reflection on the historical dimension of language, intended as a dynamic and always evolving system, is made by Coseriu in *Sincronía, Diacronía y Historia* (Coseriu, 1988 [1957]). Coseriu criticizes the concept of linguistic structure as a static system, the diachrony vs. synchrony dichotomy and the idea of *fait social* shaped around Durkheim's definition of society (i.e., society as a higher order, pre-existing the individual). By recalling Humboldt's distinction between *energeia* and *ergon*, and Aristotle's categories of cause (especially the efficient and final causes), Coseriu argues that the language is an *energeia* rather than an *ergon*, and that, since language change is the historical objectification of linguistic acts (i.e., the result of the adoption of an innovation by a

(1867, p. 24): «The nature and uses of speech [...] cannot but have been essentially the same during all periods of history [...] there is no way in which its unknown past can be investigated, except by the careful study of its living present and recorded past, and the extension and application to remote conditions of laws and principles deduced by that study». For further discussion, see Bergs (2012), Baldi & Cuzzolin (2015), Putzu (2015).

⁵ Cf. e.g. de Saussure (1916, p. 131): «Il est évident que l'aspect synchronique prime l'autre [i.e., diachronique], puisque pour la masse parlante il est la vraie et la seule réalité. Il est de même pour le linguiste: s'il se place dans la perspective diachronique, ce n'est plus la langue qu'il aperçoit, mais une série d'événements qui la modifient».

⁶ For further discussion, see Loporcaro (2003, pp. 20-23)

concrete speaker with a communicative purpose), it depends on final causes rather than on efficient ones. Hence, each speaker, at a given synchronic moment, «si trova davanti non ad un unico stato di lingua, ma ad almeno due stati di lingua: poiché in ogni momento è in corso un qualche mutamento linguistico, il parlante si troverà al cospetto di una tensione tra uno stato più antico e uno stato più recente di lingua» (cf. Coseriu 1994, p. 939). Therefore, the internal description, whose validity is not questioned,⁷ always involves history. A similar criticism against the diachrony vs. synchrony dichotomy can be found in several works by Belardi (cf. e.g. Belardi, 1982).⁸ To Coseriu (1973, pp. 135-152), as is known, we owe the introduction of the current terminology, mainly adopted in Continental Europe, to define the dimensions of synchronic variation, i.e., diatopy, diaphasy, diastraty. These levels of variation are interrelated, and at the same time, each linguistic act is syntopic, synphasic, and synstratic.⁹

1.1.3 Sociolinguistics and Historical Sociolinguistics

Sociolinguistics arises, somewhat polygenetically, in the United States around the 1960s both as a reaction against other linguistic trends and for the reception of the so-called "quantitative revolution," which, since the 1950s, had been affecting social sciences, especially psychology and human geography, particularly in Anglo-Saxon countries. A reflection upon the social dimension of language is not indeed a novelty within the history of linguistics (cf. Belardi 2000; Lorenzetti 2010,

⁷ «Dichiararsi in favore del primato della storia non vuol dire però in alcun modo rinunciare alla descrizione strutturale e alle importanti conquiste della linguistica di matrice strutturalista, attraverso le quali si sono riguadagnate visioni profonde del funzionamento della lingua. Al contrario: per la descrizione di un terminato stato di una lingua funzionale la considerazione sincronica strutturale non solo è sensata, ma è anche la sola adeguata. La descrizione di un oggetto culturale in una fase del suo divenire, ossia in quanto divenuto, appartiene alla storia di questo oggetto. Non vi è un contrasto tra descrizione e storia, o se c'è, può esserci solo perché la storia contiene in sé la descrizione, laddove la descrizione non può come parte contenere il tutto. La descrizione della lingua è già storia, ma è tuttavia una storia parziale e provvisoria che attende dal suo sviluppo la propria più precisa fondazione e conferma» (Coseriu, 1994, p. 955)

⁸ «È oramai una verità, da non nascondere più dietro formule e semplificazioni di comodo, che tra i popoli, i ceti sociali, i gruppi ideologici e – quel che è più importante – tra gli individui si riscontra sempre una 'Ungleichzeitigkeit', una 'non-simultaneità' di tempi storici relativi [...]» (Belardi 1982, p. 72).

⁹ Cf. Berruto (1995, pp. 149-50): «Le tre dimensioni di variazione non agiscono isolatamente, ma interagiscono e interferiscono in vario modo. Anzitutto, una concreta produzione linguistica di un qualunque parlante avrà sempre una sua collocazione simultanea lungo i tre assi, in diatopia, diafasia e diastratia. In secondo luogo, tratti linguistici originariamente e primariamente marcati in diatopia possono assumere valore (ancora più) marcato anche in diastratia, e tratti marcati originariamente in diastratia possono assumere valore marcato in diatopia, talché marcatezza diatopica, diastratica e diafasica si presentano spesso inestricabilmente compresenti».

p. 402; Putzu 2015, pp. 30-31),¹⁰ but undoubtedly, the methodology introduced by modern sociolinguistics marks a break in the analysis of the relation between social dynamics, linguistic variation, and language change. At present, sociolinguistics is a composite field with often blurred boundaries: basically, it could be defined as that branch of linguistics that studies the relationship between society and language and those linguistic phenomena that assume social relevance. However, the definition of sociolinguistics, as well as its epistemological status, is not that straightforward. It depends on the aims and methodologies of each separate research trend and on the relationship that sociolinguistics is supposed to have with "pure" linguistics."

The pivotal work that lays the foundations of this paradigm is commonly acknowledged as *The Empirical foundations for a Theory of Language Change*, by U. Weinreich, a scholar of Yiddish and language contact (cf. Weinreich, 1953) and his pupils W. Labov and M. I. Herzog. This brief essay, published shortly after U. Weinreich's untimely passing, questions, in part following Coseriu, the Saussurian concept of the social dimension of language and the diachrony vs. synchrony dichotomy, and addresses five problems concerning language change. As for the social dimension of language, it is assumed that society and linguistic acts are intrinsically heterogeneous and that the study of the social dimension of language should require an empirical and speaker-oriented approach, by

¹⁰ Reflection on the social dimension of language emerges long before the birth of modern sociolinguistic, notably among French scholars and in the field of Italian dialectology influenced by various branches of historicism (Putzu 2015, pp. 30-31). It is worth noting a polemic remark by T. Bolelli in 1979 about the alleged novelty of sociolinguistics: the author stresses Meillet's thought, in which language change, notably in the *Esquisse*, is often put in relation with social change. However, the focus is generally on a kind of "speaking mass," far from the speaker-oriented and empiricist model introduced by modern sociolinguistics. Italian scholarship has always paid attention to the socio-historical dimension of language, as Labov himself recognizes during a conference held in Bologna in 1975. Hegel's historicism is further developed by Croce's neo-idealism and Gramsci's absolute historicism, emphasizing a relativistic and pluralistic concept of historical, and hence linguistic, facts. In this framework, two leading figures are Bevenuto Terracini (cf. e.g., Terracini, 1957) and Giacomo Devoto, whose *Storia della lingua di Roma*, in the title itself reveals how the stress is on the history of a speech community. A cutting-edge study, in this regard, is represented by Tullio De Mauro's *Storia linguistica dell'Italia Unita*, whose first edition (1963) is almost contemporary to Labov's early studies. As Mancini (2013b) points out, this work presents discontinuities with dialectological studies because of the massive use of socio-statistical data. In comparison to sociolinguistics, however, it deals with a macro-sociolinguistic study, in which statistics are not applied for correlations between linguistic variants and extra-linguistic variables, but rather to describe, in a historicist perspective, linguistic facts under the lens of the history of social classes (cf. also Berruto, 2018).

" For a further discussion and a thorough inspection of the various definitions of "sociolinguistics" and the major trends, i.e., correlative sociolinguistics, sociology of language, ethnography of speaking and interpretative sociolinguistics, see Berruto (1995, pp. 6-32).

employing quantitative methods.¹² In fact, in studying the social aspect of language, it would be paradoxical to assume the existence of a uniform and homogeneous *langue* of which each speaker would showcase a concrete expression: this would entail that the social aspect of language might be studied even introspectively by the linguist himself (the so-called "Saussurian paradox").¹³ As for the diachrony vs. synchrony dichotomy, Weinreich, Labov & Herzog (1968) emphasized the intimate interconnection between these two dimensions: as a matter of fact, each language change as evidenced in diachrony would result from the socially conditioned prevailing of a synchronic variant over another one («variability and heterogeneity of the linguistic structure do not always entail change. Every change, on the contrary, presupposes variability and heterogeneity», p. 188). Since Labov's early studies, this interconnection is particularly evident with the introduction of the concepts of apparent and real time, the former being a snap-shot of a potential change in progress, the latter the diachronic projection of a completed change. This perspective determined a turning point in the concept of language change (cf. Guy 2003; Aitchison 2012) and gave rise to many studies among the so called "secular linguists" and the field of historical sociolinguistics.

Language change raises five issues: actuation, transition, constraint, embedding, and evaluation. The actuation problem concerns the factors, which triggered the appearance of a variant and «why [...] changes in a structural feature that takes place in a particular language at a particular time, but not in other languages with the same feature, or in the same language at other times» (cf. Weinreich, Labov, & Herzog, 1968, p. 102). This is the core and unsolved problem. The transition problem concerns the individuation of those factors, which determined the spread of linguistic change within a linguistic community, whereas the constraint problem concerns the individuation of constraints on language change (p. 100). The embedding problem is concerned with identifying how the change is embedded within linguistic and social structures, i.e., the co-occurrence of other

¹² The quantitative paradigm allows, through surveys on representative samples of a linguistic community, both the empirical individuation of elements of discontinuity within the continuum of linguistic variants («only quantitative methods can measure discontinuity of the phonetic and semantic continuous that form the boundaries of the linguistic categories», cf. Labov, 1977, p. 39) and the correlation of a given variant to a socially defined group of speaker (by reference, for instance, to social class, age, gender).

¹³ As for the "Saussurian paradox", cf. the definition by Labov (1975, p. 826): «This development represents the most complete exploitation of what I have called "the Saussurian paradox". If we carry to its logical extent Saussure's notion that *langue* represents the knowledge of the language in the possession of all members of the speech community, it follows that we can study *langue* through the intuition of any one member, even in the linguist himself. He can then examine the social aspect of language in the privacy of his office; but parole, the individual aspect of language, can only be pursued through a sociological survey of the population».

changes and the correlation with extra-linguistic variables (p. 101). Finally, the evaluation problem concerns the evaluation of a change in progress by the members of the speech community.

In a series of well-known studies,¹⁴ mainly carried out at Martha's Vineyard, New York and Philadelphia, Labov gave a detailed account of two types of changes: change from below and change from above. In the change from below (i.e., below the level of linguistic consciousness), speakers are initially unaware of the actuation of linguistic change («the speech form assumed by each group may be taken as an unconscious mark of self-identification», Labov 1996, p. 331). The innovation is initially spread within a subgroup and is non salient. Succeeding generations within the same subgroup carry the change further, and the innovation becomes an indicator of the original subgroup. At this point, the innovation may be adopted by other groups and may become subject to stigmatization. The main characteristic of change from below is social distribution according to the curvilinear principle. When a group of speakers, mainly belonging to educated and higher classes, labels a variant as a prestigious or stigmatized form, a change from above may occur.¹⁵

Correlative sociolinguistics, whilst dealing with synchrony and micro diachrony, entered the domain of historical linguistics with the introduction of the relationship between real and apparent time: linguistic change as evidenced in diachrony (i.e., the real-time) by rules of correspondences (e.g., A → B), is the result of a variant, always socially related, prevailing over another one at a given synchronic moment (i.e., the apparent time). Therefore, it would be conceivable to study language changes that occurred in the past with the same methodology and categories of synchronic sociolinguistics so that to trace the socio-historical reasons, which led to a given diachronic path (cf. McColl Millar, 2012, pp. 42-43).

The study commonly acknowledged as the seminal work of historical sociolinguistics¹⁶ is Romaine (1982), concerned with the study of stylistic variation in relative sentences in Middle Scott. Since then, a large number of studies have been carried out, notably in the field of the history of Middle English and Early Modern English, with reference to variation in relation to social class,

¹⁴ See mainly Labov (1966; 1972a; 1972b; 1977) and the further elaboration and systematization in Labov (1994, 2001, 2010).

¹⁵ For further discussion, see Ash (2002).

¹⁶ Historical Sociolinguistics is sometimes referred to as “Socio-Historical Linguistics” as well. Indeed, Romaine (1982) bears the title *Socio-Historical Linguistics. Its status and Methodology*. Recent works, however, show that “Historical Sociolinguistics” is used more frequently (cf. e.g. J. Milroy (1992a); Nevalainen & Raumolin-Brunberg (2017[2003]); Hernández-Campoy & Conde-Silvestre (eds., 2012); Bergs (2005); and the *Journal of Historical Sociolinguistics*, whose first issue dates back to 2005). For further discussion, cf. Meluzzi (2016).

gender, register and style, and issues such as urbanization and standardization.¹⁷ In addition to correlative studies, historical sociolinguistics has also applied the social networks model (cf. for instance Milroy J. & Milroy L., 1985; Milroy J., 1992; Bergs, 2005), notably for the analysis of the Paston letters.

Nonetheless, historical sociolinguistics raises some issues, partly because of the historical research in itself and the critical evaluation of written and random sources (i.e., the bad data problem, cf. Labov 1994, p. 11). Indeed, historical sociolinguistics is the more possible, the richer information about social history, and the more balanced and representative linguistic data are available (cf. Winter 1998). Therefore, historical sociolinguistics cannot be applied to fragmentary or small corpus languages, and the possibility of reaching relevant results increases as we draw near the Middle and Modern Ages (cf. Mancini 2012; Lorenzetti 2018).

As for the first point, historical research entails relativism. Hence, applying the categories for depicting contemporary societies to the past may lead to anachronism, as Bergs (2012) highlights in reference to the concepts of social class, social network, and gender. The premise for the application of contemporary sociolinguistic categories to the past is the Uniformitarian Principle (UP). In comparison to the Neo Grammarian paradigm (cf. ft. 3), uniformitarianism, and hence actualism, are transferred from the internal linguistic level to the extra-linguistic one. Basically, it is maintained that if language change in modern societies is triggered by socially conditioned synchronic variation, then it is conceivable that language changes that occurred in the past responded to a similar pattern. Thus, the present would be a means for illuminating the past.

Labov (1977, p. 128) refers to the UP in the following terms:

We can begin to apply the principles derived from our sociolinguistic studies on the change taking place: to do this, we must rely on the principle of ‘uniformity’, in respect to the forces that came into play to produce the same historical phenomenon that we can see in action today. Of course, we cannot solve historical problems in the same way as synchronic ones, because, for the former, the phonetic and social data are too fragmented. But we can provide some plausible interpretations using principles that have a solid empirical basis, and therefore illuminate the past with the present, just as we explained the present with the past [...]. The

¹⁷ Cf. e.g. Nevalainen (1996, 2000a, 2000b), Wright, L. (1997, 2000), Nevalainen & Raumolin-Brunberg (2000). For further bibliography, see Bergs (2005, pp. 2-6).

analogy with biological evolution is clear: one can say that a species has changed only when a new characteristic is passed on to subsequent generations.

And, similarly, Romaine (1982, p. 1454):

The linguistic forces which operate today and are observed around us are like those which have operated in the past. This principle is of course basic to purely linguistic reconstruction as well, but sociolinguistically speaking, it means that there is no reason for believing that language did not vary in the same patterned ways in the past as it has been observed to do today.

The premise underlying this assumption is Hegel's rationality of reality (cf. Putzu 2015), which would guarantee uniformity and actualism of the linguistic forces. Nevertheless, the assumption that all cultures would show levels of variation comparable to contemporary big metropolis is certainly fallacious: variability, as evident in urban realities, is not a *universale*, but rather derives from the examination of a particular historical product. Primitive culture - to apply Taylor's terminology - do not show either social stratification or linguistic variation; ancient societies, even the most advanced ones, such as the Greeks' and Romans', were profoundly different from contemporary societies and characterized by poor vertical mobility. In this regard, Mancini (2019b) has recently introduced the expressions “anti-uniformitarian principle” and “the use of the past to explain the past.” Moreover, the assumption of human cognitive mechanisms' invariance is not exempt from doubt (cf. Cuzzolin 2014; Putzu 2015; Di Giovine 2016, pp. 42 44).

The application of UP needs to be historicized: Labov extends this principle to provide historical sociolinguistics with an epistemological basis, in opposition to the generative paradigm (cf. Putzu 2015). Indeed, Labov was well aware of the differences between the present and the past when introducing the so-called “historical paradox”: «historical linguistics has the task of trying to explain the differences between the past and the present, but there is no way of knowing in which measure the past was different from the present» (cf. Labov, 1994, p. 21). Ultimately, the attempt to explain the past with the present is to be pursued with the awareness of the differences between the present and the past (cf. Di Giovine 2016, p. 42; Molinelli 2017, p. 2; Lorenzetti 2018, p. 11).

As for the bad data problem, the main issues concern representativeness and the writing filter. Linguistic data of the past are written sources, and are not derived from reproducible inquiries on the speakers' linguistic acts, but rather from the accidental nature of textual tradition. As a matter of fact, while sociolinguistics deals with representative samples of spontaneous speech, historical

sociolinguistics has to cope with patchy and random written source,¹⁸ which lacks representativeness and do not allow generalizability¹⁹ (cf. Giacalone Ramat, 2000, pp. 62-68)

The lack of representativeness could be partially solved thanks to the building of linguistic corpora with as much data as possible, associated with different extra-linguistic variables and with different authors. Corpus linguistics may, in fact, provide «qualitative generalizations supported with empirical evidence [and] quantitative generalizations which are both replicable and verifiable» (Cantos, 2012, p. 110).

For example, the *Corpus of Early English Correspondence (CEEC)*,²⁰ built at the University of Helsinki under Terttu Nevalainen's and Raumolin Brunberg's direction, contains rich epistolary documentation of the Early Modern English, annotated according to different levels of analysis. This corpus consists of 5,000,000 words and 11,000 letters written by 1,180 different authors from the 16th to the 17th century. Such a corpus may allow even fine-grained and statistical analyses (cf., e.g., Nevalainen & Raumolin Brunberg 2017 [2003]).

Furthermore, written texts are generally uniform because the writing filter may conceal those phenomena which would have emerged in spontaneous speech. This affects all levels of analysis, notably the grapho-phonological one, which may be further altered by textual tradition. Therefore, texts should be the closest as possible to spontaneous writings, such as private letters and diaries, i.e., ego documents (see Schneider 2002 and Elspass 2012 for the categorization of texts characterized by immediacy).

Nonetheless, as Nevalainen & Raumolin Brunberg (2017, p. 27) observed, historical sociolinguistics has an advantage over sociolinguistics as the study of language change is not based on predictive hypotheses deduced from the apparent time, which does not necessarily lead to language change. On the contrary, the diachronic evidence of real-time allows us to focus on those phenomena that underwent language change and attempt to reconstruct their path throughout the phases of actuation, transition, embedding, and evaluation.²¹

¹⁸ «Data are often patchy as a consequence of the random preservation of some texts and the equally random loss of others» (Milroy & Gordon, 2003, p. 177)

¹⁹ «The most important disadvantage of datasets of historical documents is that they very often lack of representativeness and possibly also validity, since, as noted above, the historical record is incomplete, and written material may not be reflective of the spoken language of the time period under study» (Hernández-Campoy & Schilling, 2012, p. 66).

²⁰ <https://www.helsinki.fi/en/researchgroups/varieng/corpus-of-early-english-correspondence>

²¹ For other corpora, cf. those collected within the project VARIENG by the University of Helsinki (<https://www.helsinki.fi/en/researchgroups/varieng>).

Furthermore, written texts are generally uniform, because the writing filter may conceal those phenomena which would have emerged in spontaneous speech. This affects all levels of analysis, notably the grapho-phonological one, which may be further altered by textual tradition. Therefore, texts should be the closest as possible to spontaneous writings, such as private letters and diaries, i.e., ego-documents (see Schneider 2002 and Elspass 2012 for the categorization of texts characterized by immediacy).

1.2 Studies on Latin variation

Several factors contributed to analyzing Latin in a historical perspective since early studies, long before the birth of the historical sociolinguistics paradigm, even though with often naïve solutions: (i) the evidence that the Romance varieties derived from a seemingly monolithic language (which raises the *ex uno plures*, so to speak, problem, cf. Vàrvaro, 2015); (ii) the evidence that the Romance fragmentation seems to coincide with the birth of new state apparatuses after the Roman Empire break-up; (iii) stylistic variation as evidenced by literary authors (e.g., Horace, Cicero). (iv) the linguistic evaluation provided by grammarians and rhetors. (v) non-literary texts ongoing findings; (vi) the emergence of standardization at the end of the Republican Era, i.e., during a crucial stabilization of Roman policy and society; (vii) the evidence of horizontal contact dimension with other languages, particularly Greek and the Sabellian languages. All these elements inevitably led and still lead to an analysis combining linguistic data with historical factors.

Therefore, the significant questions for at least 150 years have been concerned with the transition from Latin to the Romance languages, the labeling, and hence the conceptualizing, of the Latin continuum (i-ii), the possibility of inferring clues of variation from non-literary texts and grammarians' testimonies (iii-v), the historical processes leading to the Romanization and Latinization of ancient Italy and other provinces (vi), and eventually, the substrate problem, both according to its traditional acceptance (which Fanciullo 2018 names *Sostrato* with capital s-), and to the current account by Thomason & Kaufman (1988) as adapted to the history of Latin by Mancini (2005a) (vii).

In the following section, without claiming to be exhaustive, we shall outline the major issues arising from the study on Latin in a socio-historical perspective to lay the foundations and the methodological framework of our analyses. Since the present work does not take into consideration

a spatially and temporally circumscribed corpus but rather different phenomena ranging from mid-Republican to early Medieval Ages, we shall introduce the major questions according to a historical profile of the Latin language and the history of Rome, by referring to Herman's three dialectalization stages (Herman, 1990, pp. 88-89) and Adamik's periodization of Latin (Adamik 2015), either of which combines linguistic evidence with historical aspects.

First, it is worth dwelling on some questions pertaining to the conceptualization of continuity and transition and labeling the Latin continuum.

1.2.1 Misconceptualizations

The phylogenetic continuity between Latin and the Romance languages is obviously unquestionable. But the branches of Spoken Latin, which are directly continued by the Romance varieties, are unattainable, and the individuation of the chronological point(s) from which these alleged pre-Romance Latin varieties were actually the *actus* of different speech communities raised many issues. Ultimately, the level of Latin, which is known through written texts, is not aligned with the Romance tradition level: we can use the image of a straw in a glass of water to represent this distorted interruption along the line of the Latin-Romance continuum. There have even been extreme solutions to solve this riddle, such as the Continuity Theory, whose leading proponent was Mario Alinei (Alinei 1996, 2000), assuming continuity of the Romance varieties since the Paleolithic. This theory, which follows a Marxist theorem (cf. Martino 2010), does not find factual evidence of any kind and perverts some basic linguistics assumptions, such as the signifier autonomy (cf. Renzi 1997; Loporcaro 2009, pp. 42-47). However, the scientifically safer solution of inferring, by means of the comparative method, an abstract reconstruction of Spoken Latin, i.e., Proto-Romance, does not exhaust the issue of identifying the continuity and discontinuity between what we can deduce from the study of Latin in a socio-historical perspective and the various Romance traditions. The abstract model, as Vârvaro (2013, p. 28) points out, is, on its own, unsatisfactory, to the extent that the historical and documentary framework, albeit with the caveats that will be discussed, is rich enough to allow a more fine-grained analysis:

The historical parent language is a concrete datum, although not attested. Proto-Romance is an abstraction that is derived from the Romance languages by means of an extrapolation that goes back several centuries in time. It strikes me as highly unsatisfactory to invoke and apply exclusively and rigidly the comparative method, originally defined in relation to distant and hypothetical Indo European and only capable of yielding abstract results, for a historical period

in which we are fortunate enough to have a relatively rich textual record. To adequately deal with such a historical period, we need to approach it as historians, whatever the difficulties we might encounter. On the other hand, recourse to abstractions should only be made when all other avenues of enquiry are closed off to us.

The first attempt of historicization was proposed by Schuchardt (1866-1868, vol. I, p. 82) and, later on, by Gröber (1884): according to these authors the Romance differentiation would have begun simultaneously with the conquest, in different periods, of each area of the Roman Empire. If this hypothesis, as Vårvaro (2013) observes, has the merit of offering a historical solution to the differentiation, giving rise to some debated issues, such as the archaicity of some areas,²² it nonetheless disregards the actual circumstances by which Rome exercised the political control and the consequences that this, in different ways according to the historical period and the annexed area, had on the linguistic level. Ultimately, Schuchardt's solution is a kind of genealogical tree projected over the space. Indeed, the latinization has been a long-lasting process, with complex and heterogeneous configurations (cf. Vårvaro 2005). Such a perspective entails the tendency to analyze Latin data according to a “ottica al rovescio” (Molinelli, 1998, p. 420), i.e., a continuist perspective, in the attempt to find elements characteristic of each Romance variety within Latin documentation whose provenance is known. The continuity of single phenomena, even attested in the Republican period, is certainly plausible, as the studies by Prosdocimi (1991, 2000) on the Submerged Latin show, but assuming a systemic continuity would neglect the historical dimension of the administration of each province, the dynamics of the learning of Latin by alloglots, and geographical mobility. Therefore, the study of transition must consider a complex network of historical factors.

Another issue that is connected to the above remarks concerns the reification of the label “Vulgar Latin”. The adjective *vulgaris*, as is known, was employed by Classical Latin authors to define, along with other adjectives such as *plebeius*, *planus*, *humilis*, *cotidinus*, a register proper of some genres, notably the epistolary one, without any diastatic connotation.²³ It is quite superimposable to the concept of *Umgangssprache* by Hofmann (1926). During the Renaissance, as emerged in a thorough study by Eskhult (2018), it developed an idea of a *sermo vulgaris* in a diglottic relation with Classical Latin, partly because of the rediscovery of classical authors and the hypostatization of Classical Latin,²⁴ and partly because of the *questione della lingua*. This *sermo*

²² On the (alleged) archaicity of the first provinces, such as Spain and Africa, cf. Adams (2007, pp. 383ff., 518ff.)

²³ Cf. for instance Cic. *orator* 76-79; *de orat.* 1, 12; *epist.* 9, 21, 1.

²⁴ On the rediscovery of classical authors, see e.g. Sidwell (2015).

vulgaris was intended as a low variety, somewhat ahistorical, at the basis of the *volgari*, i.e., the label whereby the Romance varieties were defined in Italy.

The concept that whatever deviates from Classical Latin falls into Vulgar Latin's category is evident in Schuchardt's work, to whom the introduction of the label Vulgar Latin (*Vulgärlatein*) in modern Linguistics is generally ascribed. It is worth noting that his dissertation's original title employed the label *sermo plebeius* (*De sermonis Romani plebei vocalibus*). Schuchardt considers all vocalic phenomena deviating from Classical Latin, from Plautus to Late Latin authors, in a «misleading synchrony and symphasy to create a non-existent system, certainly distinct from that of the literary norm but above all viewed as an alternative system, existing within a sort of diglossic situation» (Vàrvaro 2013, p. 24). Indeed, the label Vulgar Latin is employed, even nowadays,²⁵ both to indicate different diachronic dimensions from even the mid-Republican Era (cf. the label *altes Vulgärlatein*, Marx 1909; Meister 1909; Altheim 1931) to Late Latin²⁶ (as is observed by Molinelli 1998, p. 216) and uneven sociolinguistic levels.²⁷ Ultimately, in the attempt to account for Latin variability, as Poccetti (2004) pointed out, variability is hypostatized, to the extent that the Classical vs. Vulgar Latin dichotomy only relabels the one vs. many, and static vs. dynamic long-standing dichotomies. This concept is partially derived from the evidence that the Vulgar Latin phenomena, especially during the Imperial period, are relatively homogeneous, and convey the idea of a *souple unité* (Meillet 1933, p. 229). However, as we shall see, this homogeneity must be framed within the historical processes related to the circulation of Latin.

In the following sections, we will see that labeling the continuum of a linguistic history so extended as for the chronological and spatial dimensions must follow two guidelines: in diachrony,

²⁵ Cf. for instance the definition of “Vulgar Latin” provided by Baldi (2002, p. 228): «spoken language of everyday citizens as reflected in non-classical sources from the second century B.C.E. and onward».

²⁶ The label “Late Latin” itself is controversial, cf. Adams (2011, p. 257). In general, this label, mostly used by the Swedish scholarship (cf. e.g. Löfstedt, 1959), concerns the period 200 AD – 600 AD (cf. Cuzzolin & Haverling, 2009, p. 20).

²⁷ Cf. Poccetti (1999, pp. 25-26): «D'altra parte, le fonti documentarie variamente utilizzate come paradigmi del latino “volgare” (dalle commedie di Plauto, alle lettere di Cicerone, alla Cena Trimalchionis, alle iscrizioni, anche di età repubblicana, da Pompei e da Roma, alla trattatistica tecnico scientifica, ai testi papiracei) si collocano su livelli sociolinguistici disomogenei e, comunque, tutt'altro che “bassi”, in quanto articolati tra “scritto”, “colto”, “borghese”, “letterario”, “cittadino”, “tecnico”, “settoriale”». Cf. also Kruschwitz (2015, pp. 726-727): «“Vulgar Latin” is a mixed, inconsistent, and rather unorganized category, within the even larger, only slightly more organized, category called “the Latin language”. It covers aspects of language from the third century BCE to the early medieval period; it comprises literary texts as well as documentary ones; and it includes texts of innumerable, heterogeneous origins, since it is only very rarely possible to attribute a critical mass mass of texts to the same author, except occasionally in the case of collections of letters, which are normally on papyrus».

labels must individuate discrete points along the continuum, which are generally related to macro-socio-historical factors; in synchrony, the assignment of a label always implies the comparison of variants *in praesentia*, whose availability is obviously related to the bad data problem. In general, the identification of diatopic variation requires the analysis of synchronic texts from different areas, whereas diaphasic variation can be detected, provided that diatopic variation has been ruled out, by comparing syntopic texts differing as for text type. Diastratic variation is the most difficult to individuate, and represents a riddle even for historical sociolinguistics,²⁸ though it benefits from a more detailed historical framework and a larger amount of data. It can only be detected provided that diatopic and diaphasic variations have been excluded (cf. Mancini 2012, 2014, 2018). Generally, it is possible to glean clues of regional variation, whereas, for the two other dimensions of variation, especially if dealing with the grapho-phonological level, we move upon an even softer ground.

1.2.2 Transitional stages within the Latin continuum and the issue of Submerged Latin

The phase of Latin preceding Classical Latin codification is designated by means of a series of labels that are heterogeneous and disagreed among scholars. For example, De Melo (2007) uses without distinction both “archaic” and “early”, Ernout (1947) and Warmington (1934-40) respectively adopted “archaic” and “old” to designate Latin before the 1st century BC; German scholarship distinguishes either an *Altfrühlatein* (700-500 BC), and a *Neufrühlatein* (450-250 BC) (cf. Hartmann 2005) or a *Frühlatein* (700-240 BC) and an *Altlatein* (240-50 BC) (cf. Meiser 2006[1998]). The latter distinction is adopted by De Vaan (*EDLIL*) and Weiss (2009) (i.e., Very Old Latin vs. Old Latin), and Cuzzolin & Haverling (2009) (i.e., Archaic Latin vs. Early Latin): 240 BC refers to the birth of Latin literature, i.e., Livius Andronicus' *début*. Horrocks (2007b) and Penney (2011) distinguish an Archaic Latin (up until 400 BC) and an Old Latin (399-100 BC).²⁹ Such a plurality of definitions reflects the scarcity of documentation, which is patchy and does not reveal a widespread epigraphic habit compared to the late-Republican and Imperial periods. In this framework, a discrete point is

²⁸ Cf. Romaine (1982, p. 23): «It is not surprising that it should be easier to identify local dialects and stylistic dialects than sociolects of whatever type. The reason is that both for regional varieties and registers knowledge is required of what speakers have recorded in writing (supplemented in the case of regiolects by information about the local provenience of a texts) while for a delimitation of sociolects text data have to be matched with findings about the text producers and users [...] extratextual evidence thus is of much greater complexity as in the case of regiolects».

²⁹ Cf. Adamik (2015) and Vincent (2016) for a more detailed account.

undoubtedly the birth of the Latin literature, which arises, as is known, thanks to the reception of the Greek model. Based on linguistic and communicative criteria, Adamik (2015) distinguishes an Archaic (ca. 700 – ca. 325 BC) and an Old Latin (ca. 325 – ca. 120 BC). Archaic Latin is represented by a well-known group of texts, whose hermeneutics is particularly controversial,³⁰ and the Latin which underlies the *Carmen Saliare* and *Arvale*, some formularies transmitted by Cato and Varro, and the *Duodecim tabularum leges*. During the Late Republican period, we know that this stage of Latin was no more intelligible, see e.g. Polybius' testimony on the Latin whereby the treaty between Rome and Carthago was written in 508 BC (*Hist.* 3.22.2), and Quintilian's (*Inst.* 1.6.40) on the *Saliorum carmina*, *uix sacerdotibus suis satis intellecta*. As a matter of fact, Latin had undergone substantial changes by the end of the 4th century BC, i.e. syncope³¹ and the so-called “Latin apophony” (vowel weakening), due to proto-syllabic accent,³² and rhotacism.³³ We will see that the repertoire of etymological geminated consonants dates back to this phase (cf. CHAPTER 3). On the evenemential level, this phase may refer to a period in which latinization is at an early stage (possibly affecting contiguous ethnic groups, such as Sabines and Volsci): by the mid of the 4th century BC, Rome had conquered the *Latium Vetus* (340-338 BC), part of Southern Etruria (Veii, 396 BC), and Northern Campania (Capua, 343-341 BC, first Samnite war). However, despite a widespread cultural koine concerning onomastics, religious lexicon, and the diffusion of writing through the Greek-Etruscan mediation, with different local traditions (cf. Cristofani 1978; Wallace 2011), there were, even within circumscribed areas, distinct ethnic groups and different linguistic varieties (cf. Clackson 2007a): Etruscan, which is represented by a vast corpus of inscriptions (about 9.000, 150 before 600 BC), Greek (one of the most ancient Greek inscriptions, *SEG* 42 899, dated 770 BC, comes from Osteria dell'Osa), Faliscan (the most ancient inscription from Falerii Veteres dates before 600 BC), and Osco-Umbrian languages (most of which are however attested in a phase of evident Latin influence).³⁴ The evaluation of the genealogical relations within the Italic group, i.e., whether

³⁰ Such as the Dueno's inscription (*CIL* I² 4, 580-570 BC), the Garigliano bowl (500-450 BC), the *Lapis Niger* (*CIL* I² 1, 570-550 BC), the *Lapis Satricanus* (*CIL* I² 2832a, ca. 500 BC), the dedication to Castor and Pollux (*CIL* I² 4.2833, 550-525 BC), the Tita Vendia vase (*AE* 1991 396, 620-600 BC) and, probably, the *Fibula Praenestina* (*CIL* I² 3, 730/720 – 660/650 BC). For a recent analysis of these texts, see Baldi (2002: 196ff) and references therein.

³¹ Syncope must have operated from the 5th to the 4th century BC (cf. Meiser 2006[1998]: 66), Adamik (2015: 645).

³² Vowel weakening must have ceased around the last quarter of the 4th century BC (cf. Penney, 2011, p. 224) e Adamik (2015, p. 245, ft 17).

³³ Rhotacism of intervocalic *s must have ceased around the mid of the 4th century BC (cf. the anecdote witnessed by Cicero, *fam.* 9.21.2 on Papius Crassus, who changed the spelling of his name into Papirius in 339 BC and the definitive orthographic reform by Appius Claudius Caecus, c. 340 BC – after 280 BC).

³⁴ For the ethnolinguistic subdivision of ancient Italy, cf. Clackson (2007a).

isoglosses are “pre-diasporic” or result from subsequent convergence, as well as the position of Faliscan, are highly debated issues, reflecting the difficulty of elaborating genealogical trees for contiguous and contemporary languages. For a thorough discussion, cf. Clackson (2007a) and Baldi (2002, pp. 118-196), with bibliography.

Between the end of the 4th and the end of the 2nd century BC crucial events of Roman policy occurred, i.e., the expansion over the Italian Peninsula and the Mediterranean after the Samnitic, Punic, Illyric and Macedonian wars, which determined a growing sense of unity. A national literature was codified by authors coming from all over the annexed areas (Ennius and Pacuvius came from Calabria, Caecilius from Cisalpine Gaul, Naevius and Lucilius from Campania, Plautus and Accius from Umbria, Terence from Africa), and Italic communities voluntarily adopted Latin as a prestigious language for trading³⁵ and social promotion (cf. the famous case of Cumae, asking in 180 BC the Roman Senate for permission to use Latin rather than Oscan as its official language, Liv. 40.41).

Epigraphic documentation, in comparison to the previous period, broadens, and the inscriptions of other Italic languages show a progressive degree of interference with Latin (cf. Adams 2003a, pp. 112ff; Horrocks 2007b, pp. 82-84) which was the prestigious political and administrative language, with a sort of textual koineization in the official formulary (cf. Poccetti 1993). The Latinization of the Italian Peninsula must have been concluded within the 1st century AD, or, at the latest, within the 2nd century AD (Herman 1990, p. 121). After the social war (ended in 88 BC), the extension of the Roman citizenship to all free men in Italy was a crucial event in this regard.

Latin as evidenced by mid-Republican inscriptions, such as those from Falerii, Praeneste, Alba Fucens, Lucera, and Pisaurum, shows a high degree of variability, even though the randomness of these texts does not always permit to pinpoint the actual level of variation, i.e., whether they display a diachronic segment of Latin without any diatopic connotation (as in the case of the *ou* > *ō* monophthongization in Praeneste³⁶ and the first declension dative in *-a* in Pisaurum, cf. Adams 2007, pp. 37ff, *contra* Baldi 2002, p. 310), actual dialectal varieties (such as the loss of final *-r* or its replacement by *-d* in Faliscan territory, cf. Adams, *ibid.*), or just ephemeral interference phenomena (cf. Horrocks 2007b; Adams 2003 pp. 112 ff.).

³⁵ As in the case of the Italic community on Delos, which used both Latin and Greek (cf. Rovai, 2015b, with references).

³⁶ For a thorough discussion, cf. CHAPTER 3.

In this phase, Latin undergoes a series of changes (some of which will later fall into the category of *rusticitas*), whose progression is shown by a fluctuating orthography. TABLE 1.1 resumes the most significant changes as for phonology and morpho-phonology:³⁷

Phonology / Morpho-phonology		Orthography
(1)	Loss of final $[-d]$ after a long vowel (around the mid of the 3 rd century BC)	Final <d> was still maintained in official orthography during the 2 nd century BC (cf. SENTENTIAD, POPLICOD, MAGISTRATVD in the <i>Senatus consultum de Bacchanalibus</i> , dated 186 BC)
(2)	Raise of $[-os] > [us]$ (2 nd decl.nom.sg.) and $[-om] > [um]$ (2 nd decl.acc.sg.) (around the mid of the 3 rd century)	Spellings with <o> are maintained as an old-fashioned spelling in later texts, especially after [w] (e.g. <i>saluom</i>)
(3)		Word-final $[-m]$ and $[-s]$ were not spelled consistently (cf. e.g. OPTVMO, VIRO in CIL I ² 9), as well as <n> before /s/ (COSOL, CESOR, in CIL I ² 8). Classical Latin orthography will introduce $[-m]$, $[-s]$ and <ns>, but final $[-s]$ will be also restored phonologically in educated speech
(4)		From the mid of the 3 rd century sporadic cases of <i>geminatio consonantium</i> are found, though it will be adopted consistently only from the 1 st century BC (cf. CHAPTER 3)
(5)		Vowel length may be signaled by means of different orthographic conventions, i.e., <i>geminatio</i> (most of inscriptions showing this feature date back to the first half of the 2 nd century BC, cf. CHAPTER 5), <ei> for /i:/, <i>I longa</i> and <i>apex</i>
(6)	/ai/ (not word-ending) > /ai/ (<ae>) (early 2 nd century BC) > /e:/ (sporadic) and /ɛ:/ (generalized during the Imperial age)	The spelling <ai> is maintained until the 2 nd century BC; <ae> is the Classical Latin spelling
(7)	/au/ > /o:/ and /ɔ:/, which was peculiar of popular speech and continued inconsistently among the Romance languages	

³⁷ For a more detailed account, cf. Horrocks (2007a), Penney (2011), and Wallace (2011)

(8)	/ei/ (either original or from /oi/) > /ɛ:/ (3rd century BC; cf. e.g. PLOIRVME for CL <i>plurimi</i>) > /i:/ (around the mid of the 2nd century BC)	The spelling <ei> was adopted to represent also etymological /i:/ (cf. (5)) and, occasionally /e:/ (e.g. PLEIB(EI) in CIL I ² 22)
(9)	/ou/ (either original or from *eu) > /ɔ:/ (e.g. POLOCES in CIL I ² 549, end of the 4th century BC) > /u:/ (e.g. LVCIOM in CIL I ² 9, second half of the 3rd century BC)	The spelling <ou> is maintained in some inscriptions of the 2 nd century BC, even for etymological /u:/ (cf. e.g. POVBILIA in CIL I ² 42)

TABLE 1.1 *Principal linguistic and orthographic changes (early 3rd – end of the 2nd century BC)*

This synthetic round-up stresses a series of phenomena that is relevant to a "sociolinguistically oriented" perspective (such as in the case of (5)-(9) monophthongizations and (2) vowel alternation) and touches some issues that will be further investigated in the next chapters.

In general, the history of the studies concerning this phase of the Latin language raised a set of problems which can be summarized as follows:

1) The continuity that, at least at a superficial level, can be noticed between Old Latin and other Latin continuum stages wherein the same phenomena are considered a pre-Romance surfacing. This perspective characterized the studies by Gröber (1894), Mohl (1899), Marx (1909), Altheim (1931), Straka (1956), Krepinsky (1978[1958]), Vidos (1959) and Pulgram (1975).

2) The substrate problem, i.e., the influence of Faliscan and the other Italic languages on Latin. This perspective was particularly pursued by the Italian scholarship, e.g. Merlo, Pisani, Bonfante, Porzio Gernia (for a further discussion, cf. Mancini 2000a, 2000b and Vincent, 2016).

These two questions are often interrelated since many substrate phenomena have been analyzed in a continuist perspective and projected over the Romance, notably Italo-Romance, varieties. These phenomena would fall into the submerged, or karstic river category, through a popular fluvial image that renews the geological metaphors linguistics abounds with. This formula has been recently employed by Marotta (2015, pp. 51-52)³⁸ and Fedriani & Ramat (2015, p. 26),³⁹ and is at the center of Pezzini's inquiry on Platus' lexicon (Pezzini, 2016).

³⁸ «The phenomenon of vowel alternations may therefore be interpreted as another instance of 'linguistic carsism' applied to the history of Latin: like in a carsic river, lowerings as well as syncope appear and then disappear; they occur in Archaic Latin and then in Late Latin and the Romance languages. In parallel, vowel quantity is lost in Late Latin and in the Romance languages. The three phonological processes belong to the same linguistic drift, aiming at confining vowel quantity to the boundaries of the phonological system, until its disappearance» (pp. 51-52).

³⁹ «Questa situazione di 'split' rispecchia sostanzialmente il transitorio equilibrio del vasto mutamento tipologico che determina il passaggio da una fase arcaica di tipo OV a una fase innovante di tipo VO che, come Adams (1976, p. 94-98) e Ledgeway (2012), tra gli altri, hanno dimostrato, era presente in latino fin dalle prime documentazioni e, con un percorso che potremmo definire carsico, riappare poi prepotentemente nel latino tardo e nelle prime attestazioni del

As for the first point, it is certainly conceivable that some phenomena of Old Latin, censured by Classical authors' evaluation or concealed by Classical Latin orthography, resurfaced in points of the Imperial period documentation wherein Classical Latin norm, for sociolinguistic or communicative reasons, is not observed. The core of the matter is rather to ascertain that such similarities are not merely superficial (cf. Mancini 2000a; Adams 2013, pp. 792-820; Vincent 2016; Pezzini 2016), since a formal resemblance does not entail equivalence. Several studies collected in Vincent & Adams (2016, eds.) deal with this problem.⁴⁰

As for the second point, i.e., the influence of the Italic languages on Latin, it is legitimate to wonder to which extent the Italic languages could have left a sort of trace within Latin and even the Romance languages: if we apply a merely contrastive criterion, Italic learners of Latin as L2 may have pronounced Latin with some features of their L1, and testimonies in this sense do not lack within

romanzo, quando, salvo particolari casi, scompaiono la *-m* dell'accusativo e la *-s* del nominativo (*meu* per *meus*, P. Mich. VIII 471, 21), già sovente non segnate graficamente in epigrafi arcaiche (cfr. *Corsica, urbe* in (1) [CIL I² 2.7], *sati* per *satis* in un'epigrafe del 70 a.C.)» (pp. 88-89).

⁴⁰ A typical instance of a phenomenon attested in Old Latin and is continued in the Romance languages is using a *verbum dicendi* + *quod* instead of the infinitive construction. However, this phenomenon is always attested throughout the history of Latin, and could be defined, rather than a case of Submerged Latin, as a continuous phenomenon that progressively increases quantitatively (cf. Cuzzolin, 1994; Cuzzolin & Molinelli, 2013, pp. 97-108). The case of the /ae/ monophthongization is highly controversial. It is commonly acknowledged, even beyond the framework of Italian continuists, that the "rustic" monophthongization, incisively represented by Lucilius' mockery (frg. 1130) *Cecilius pretor ne rusticus fiat*, and probably triggered by similar monophthongization characterizing the Italic languages of Central Italy, i.e., Faliscan and Umbrian (cf. Coleman, 1986/87; Coleman, 1990; Penney, 2011), is the same "vulgar" monophthongization in /ɛ:/, which merged with original /ě/ in the Romance outcomes (e.g. *quaerit* > It. *chiède*, Sp. *quiere*, Fr. *quiert*). Nonetheless, this type of rustic monophthongization is instead in /e:/, and is continued in some remains (e.g. *blaesu*, A.Fr. *blois*, Pr. *bles*; *saeta*, It. *séta*, Fr. *soie*; cf. Mancini 2000a, with bibliography), rather than being directly linked to "vulgar" monophthongization. The issue of the graphemic alternation of LC /ī/ and /ō/, which are written <e> and <o> both in mid- and late Republican inscriptions (cf. on this topic Marotta, 2015, and Donati, 2015), and in texts of the Imperial age, is at the center of a wide debate concerning the merger between CL /ī/ and /ē/ and /ū/ and /ō/ and the loss of vowel quantity. If in some cases continuity is only at a superficial level, and is rather due to archaizing spellings (cf. Adams, 2013, pp. 37ff), the analysis by Marotta (2015), carried out on a syntopic and synchronic group of inscriptions within the CLaSSES I corpus, associated, by means of text types, to parameters of diaphasic and diastratic variation, stresses the likelihood that some forms convey phonetic spellings, which the transliterations would further corroborate in Greek script of Italic and Latin names as evidenced by contemporary inscriptions from Delos (cf. Rovai, 2015b). This issue, which will be further investigated when dealing with consonant gemination and especially the *littera-rule* (cf. Chapter 3), would imply, in the framework of Vineis' (1984) account, the possibility that, in some sub-systems of the Latin language, vowel quantity may have been dephonologized, with a rephonologization of the features [± tense] and [± lax], fault along with the restructuring of the vowel system from Latin to Romance would have happened.

Latin documentation.⁴¹ Nonetheless, this question must be framed within the most recent findings in contact linguistics and acquisitional linguistics, rather than relying on the “geological” and contrastive model of Ascoli’s *Sostrato* Theory,⁴² and must pay attention to historical circumstances. Indeed, the interaction between different linguistic systems cannot be limited an always true chemical reaction, but rather follows particular and unpredictable paths depending on the history of each speech community.⁴³

Researches on inscriptions from the *Regiones* of Italy do not show evidence in this respect, e.g., Moltoni’s (1954) and Eska’s (1987) studies on the inscriptions from the *Regio I*, or Herman’s (1990, pp. 121-146) and Zamboni’s (1965-66; 1967-68a; 1967-68b) on Adriatic areas. History suggests that Latin had replaced all the Italic languages within the 2nd century AD at the latest. By applying Thomason & Kaufman’s (1988) categories of contact, Mancini (2005a, pp. 163-64) maintains that the contact between Latin and the Italic languages was a borrowing contact, i.e., a long-lasting contact, with a progressive extension of the functional domains of the dominating language, until the definitive language-death:

Le fasi di interferenza – moderata prima, massiccia in seguito – fino al clamoroso caso di “language-death” attestato nella *defixio* Vetter 7 da Cuma, ripercorrono esattamente la tipologia dell’imprestito delineata da Thomason e Kaufman [...]. La presenza di casi di *code-switching* come i frammenti 1318 e 581 Marx di Lucilio (che recitano rispettivamente: “uasa omnino dirimit non sollo dupundi” e “primum Pacilius tesorophylax pater abzet”) e, soprattutto, le

⁴¹ For instance, a character from Praeneste is mocked for his different pronunciations of Latin words in Plautus’ *Truculentus* (cf. Adams, 2007, pp. 119–121)

⁴² Ascoli’s *Sostrato* theory is based on three pieces of evidence (Ascoli, 1881, pp. 18 ff.), i.e., chorographic congruence (substrate language must have been spoken in the same area as the language which is supposed to show substrate features), intrinsic congruence (the phenomenon which is supposed to have been triggered by a substrate language must follow the same structural pattern in the L2 as in the L1), and extrinsic congruence (we should expect that, under equal conditions, the substrate language has triggered the same phenomenon in other L2s). This is obviously a mechanical and somewhat “geological” concept of the relation between languages in contact. Furthermore, this theory has also experienced an ideological “drift”, since a given substrate has often been invoked for the definition of ethnic identity (cf. Silvestri, 1977-82). For a thorough list of potential substrate phenomena, cf. Di Giovine (2003).

⁴³ As Fanciullo (2018) points out, rejecting or demonstrating a substrate phenomenon by means of Ascoli’s methodology, cannot offer reliable results: «è un intervenire in un problema sempre *à la page* (quello del sostrato = sotto settore del contatto linguistico) coi mezzi messi a punto in una cornice metodologica (= *Sostrato*) ineludibilmente datata: sforzarsi, oggi, di adeguare tali mezzi alle nuove esigenze col chiederne una applicazione affatto millimetrica oppure col cercare di migliorarne la portata, è come aumentare la pressione dell’acqua in tubature vecchie, col rischio di vederle scoppiare». In fact, substrate languages may have affected dominating languages not necessarily according to a *copia conforme* (“true copy of the original”), i.e., a contrastive model.

iscrizioni come Ve 220 per il vestino (*t. uetio duno didet herclo iouio brat data*) nelle quali è documentata una infiltrazione del latino e una “competenza attiva ormai vacillante”, tutto ciò è pienamente compatibile con una politica linguistica di lenta assimilazione delle varietà locali, spesso sostenuta da esplicite richieste locali (come nel celebre caso cumano del 180 a.C. di cui parla Livio, 9, 42).

In this framework, if it is legitimate to assume that the first generations of alloglots may have spoken Latin with dialectal hints which were subsequently aborted and whose remains surface as fossilized lexemes within Latin or even the Romance documentation,⁴⁴ it is by far unlikely to trace elements of systemic continuity (it goes without saying the reference to the /nd/ and /mb/ assimilations):⁴⁵ at a certain point, Latin had become the L₁ of the inhabitants of the Italian Peninsula. This issue will be further examined with regards to *-kt-* outcomes (CHAPTER 4) and consonant gemination (notably before /j/) (CHAPTER 3).

Around the mid of the 2nd century BC, cultural circles of Rome adopted Greek rhetorical and grammatical tradition and its ideas about linguistic purity (the Greek grammarian Crates of Mallus, as is known, visited Rome in 168 BC as the emissary of the king of Pergamon, and gave lectures about grammatical theory): the first grammatical term attested in Latin is, indeed, of Greek origin, i.e., *soloecismus* (cf. Lucilius, fr. 1100 Marx) concerning grammatical mistakes. In this period, it is possible to individuate the background for Classical Latin's foundations (cf. Clackson, 2011, p. 237ff). In fact, Adamik (2015, pp. 647-48) poses the beginning of Classical Latin around 120 BC, with Aelius Stilo's (154-74 BC) rhetorical reflections, which the *Rhetorica ad Herennium* and Varro's and Cicero's works will further develop: in this text, we can find the definition of *Latinitas* based on purity (*sermo purus*) and the avoidance of errors (*ab omni uitio remotus*) (cf. La Bua 2019, pp. 125ff). In this picture, the opposition between *urbanitas* and *rusticitas* emerges. The label *rusticus* or *subrusticus* does not indicate a “dialectal” variety as such but is rather a broad meta-linguistic category including features of municipal non-urban classes (i.e., the *messores*), and also those archaic traits which were not accepted by the Latin of Rome of the classical period (cf. Belardi 1965; Campanile 1971; Lazzeroni 1993; Càlboli 1992, 1994; Mancini 2006).

⁴⁴ Well-known instances are the phenomena of *latino sommerso* (Prosdocimi, 1991, 2000) and the *-b/-f-* alternations (cf. Ascoli, 1886-88; Ernout, 1928, p. 73-79; Negri, 1977-78; Lorenzetti, 1997).

⁴⁵ On this issue, cf. e.g. Vàrvaro (1979), Seidl (1994) and references therein.

Linguistic standardization parallels Roman expansionist policy (cf. Horrocks 2007a), which peaked during the 2nd century AD. Among the Roman provinces, Latin was mainly adopted by higher classes and the army, whose soldiers were initially recruited from Roman citizens and Italic peoples. Tacitus (*Agricola*, 21.2 and *Annales* 3.43) testifies that local elites and the native chieftains' children in Britain and Gaul were taught Latin in local schools (cf. Clackson 2007c, pp. 230-31). Generally, however, the Roman Empire pursued a policy of accommodation (cf. Adams 2003, pp. 576ff), or a *condotta laica* (cf. Rovai 2015a), and there was not an explicit linguistic plan. Rather, the prestigious status Latin benefitted with was a sufficient reason for leading provincials to learn Latin. However, lower classes of the indigenous population had few contacts with the Roman system of governance and the local elites, so opportunities and reasons to learn Latin were quite limited (cf. Vàrvaro 2013, p. 10).

Nonetheless, only a few languages that were spoken in the Roman Empire survived Latin. Notably, there survived only languages spoken in inaccessible regions (i.e., Basque and the ancestor of Albanian), by nomadic peoples at the borders of the Empire (i.e., Berber) and languages of high prestige and literary or religious tradition (i.e., Greek, Aramaic / Syriac, Coptic). As for Eastern provinces, wherein Koine Greek was already established as the vehicular and prestigious language since the Hellenistic era, local administration continued to be carried out through Koine Greek, which was a sort of "other Latin". As a matter of fact, Latin was mainly the internal language of communication, whereas Greek the external one (*senatusconsulta*, edicts, and imperial rescripts were mostly written in Greek; cf. Adamik 2006; Rochette 2011, pp. 553-554).

Many studies have stressed a sort of homogeneity of Latin during the Imperial age. Meillet refers to a *souple unité* (Meillet 1933, p. 229), and similar considerations can be found in Väänänen (1981), Mihăescu (1978). This homogeneity partially reflects the diffusion of the so-called *modèle centrale* (Herman 1990, pp. 35-49), or Received Standard Imperial (Löfstedt 1959, p. 48), or *lingua comun del imperio* (Coseriu 1954, pp. 40-41), i.e., a linguistic variety reflecting the language of a prestigious minority group.

However, Latin as evidenced by documentary texts from all over the Roman Empire is far from Classical Latin, and shows some pre-Romance surfacings, with an increasing index of variation after the 3rd century AD, as a consequence of major historical events, such as the social crisis, the *Constitutio Antoniniana* and Dicioletian's reforms.

As Vàrvaro (1984, p. 20) observes:

l'omogeneità del latino imperiale va intesa più correttamente come un modo di coordinarsi della variabilità in un sistema organico fermamente orientato da una norma [...]. Rimanevano [...] ampi margini di variazione perfettamente tollerabile proprio per la forza della norma, anche se più o meno colpita da interdizione sociale. Questo complesso sistema sociolinguistico è stato certamente scosso dalla crisi sociale del III secolo d.C.: non a caso l'indice di variazione tollerata appare più alto a partire da quest'epoca (vale a dire: aumenta la documentazione di tipo "latino volgare"). Ma esso non ha resistito al crollo dell'impero, che comportava quanto meno (a) il cambio o perlomeno l'integrazione delle classi dirigenti, (b) l'alterazione degli ambiti politici (restringimento delle entità "statali") ed economici (difficoltà nel mantenimento del mercato nell'ambito antico, pan-mediterraneo), (c) la presenza di nuovi gruppi sociali alloglotti da assimilare, ma questa volta dotati di prestigio socio-politico (i Germani), (d) un peso assai maggiore dei modelli culturali religiosi, che già avevano intaccato le gerarchie di prestigio anche linguistico (imposizione di una norma "umile").

Indeed, Adamik's (2015) periodization of Latin poses the beginning of Vulgar Latin⁴⁶ around the mid of the 3rd century, i.e., when «a gradual but accelerating weakening of the awareness of normative language use is attested in the sources, so that standardized language use became more and more limited to the upper social layers [...]. This [periodization] may be supported by the metalinguistic sources that reflect e.g. the decline of the vocalic length distinctions, a fundamental change in the phonological subsystems» (pp. 648-649). Moreover, the *LLDB* database results show an accelerating rate of change affecting the E ~ I and Acc. ~ Abl. mergers (cf. p. 651, chart 1).

Mancini (2005a, 2005b) introduces the label "Neo-Standard Latin" to individuate that variety of Latin which, though being the prestigious variety, was far from Classical Latin and presented some pre-Romance features but was not imbued with those *rusticismi*, *barbarismi* and *uitia* stigmatized by grammarians.⁴⁷ Neo-Standard Latin may be defined as (cf. Mancini 2005b, p. 143):

un modello che corrispondeva a un *sermo municipalis*, ben distinto, nel *continuum*, dal *sermo urbanus* da un lato e dal *sermo rusticus*, ricco di barbarismi, dall'altro. Tale modello, non

⁴⁶ The label Vulgar Latin is employed by Adamik in a narrow acception, to indicate the period ca. 250 – 600 AD.

⁴⁷ Unlike Wright and Amsler, Mancini argues that the category of *barbarismi* included variants of different typology (i.e., diatopic, diaphasic and diastratic variants). In a specific subfield of grammatical treatises, i.e., the *differentiae uerborum*, to which the well-known *Appendix Probi* belongs, we may note not only the stigmatization of *barbarismi* and *uitia*, but also the implicit compliance to Neo-Standard of non-Classical phenomena.

più bipolare secondo l'opposizione fra *urbanitas* e *rusticitas*, sanciva presso i ceti-medio alti della società romana posteriore al III secolo d.C. la differenziazione fra parlato e scritto, due poli diafasici che all'epoca della prima codificazione linguistica tardorepubblicana coincidevano quasi completamente all'interno del *sermo urbanus*

Neo-Standard Latin is supposed to be that uniform segment from which the third dialectalization stage would depart, and the model taught to alloglots learning Latin as L2. These two aspects, according to Mancini, are closely interrelated. In fact, the extension of the Roman citizenship after Caracalla's edict and Diocletian's reforms led to a growing demand for Latin learning. By elaborating a previous Meillet's statement (1933, p. 236) that assumed that the Romance languages would be the result of a process of creolization (a hypothesis which Tekavčić 1981-82 further pursued,), Mancini (2005a) applies the categories of contact by Thomason & Kaufman (1988) again and stresses a situation very different from that depicted in the same paper for the contact between Latin and the Italic languages. In fact, a considerable mass of alloglots had to learn Latin, especially in the Greek-speaking areas (within the *ius civile* was valid the principle *Graece scripta non ualent*, Inst. 2,281), and this was for a relatively short period, i.e., between the 3rd and the 5th century AD, when Greek was once again adopted for the administration of the Eastern areas. Indeed, didactic tools for learning Latin⁴⁸ date back to this period. Imperfect learning, favored by the Late Antiquity geopolitical rearrangement, may have favored a typological acceleration of Latin nominal morphology and the diffusion of new local varieties of Latin in a pattern recalling creoloids.

Around the 7th century, we may pose the basis for the so-called *troisième dialectalisation* (Herman 1996, p. 57). Adamik (2015, pp. 649-650) individuates a phase of "transitional Latin" (ca. 600 – ca. 850 etc. AD), i.e., the phase of transition from Latin to the various Romance languages, which occurred in different periods: around the mid of the 8th century in Gaul,⁴⁹ 9th-10th century in Italy, and 10th century on the Iberian Peninsula. Of course, individuating a discrete point of the end of Latin and the Romance languages' birth is not that immediate. The Strasburg's Oaths (842) are generally considered the first instance of Gallo-Romance, though they are written

⁴⁸ Cf. e.g. the bilingual glossaries edited by Kramer (C. Gloss. Biling. I and II), *P. Bon. 5* (CEL I 1; cf. Rizzi & Molinelli 1991, 1994). For a general account on such documents and other didactic tools, cf. Dickey (2015) and Scappaticcio (2016).

⁴⁹ Similarly, Herman (2000, p. 115ff): «We could conclude, then, that at least in Gaul the structural changes that the spoken language had undergone had led in the first half of the eighth century to a break in communication between the natural mother tongue, used by everybody, and the inherited Latin, used in texts. If we want a date, then, we could say that Latin "died" in the first part of the eighth century».

with an evident Latin influence (cf. Buridant 2000, p. 23; Vincent 2016, pp. 2-3). However, the Council of Tours (813 AD) suggests the consciousness of a range, due to the accumulation of substantial changes, between the system of the *lettrés* and that of the *illettrés*, according to the well-known formula by Banniard (1992).

1.3 Latin primary sources

In the light of the above picture, sociolinguistically oriented, of the history of Latin, we shall briefly discuss the main issues about the possibility of inferring clues of synchronic variation within Latin documentary texts, i.e., primary sources on different writing materials (namely inscriptions, graffiti, papyri, ostraca, and tablets), which represents the empirical basis of the present study. Although these documents belong to different fields of the *Klassische Altertumswissenschaft* (i.e., epigraphy as for inscriptions, graffiti and tablets, and papyrology as for papyri and ostraca), they share the feature of presenting texts that are non mediated by manuscript tradition. Several scholars have highlighted the importance of these sources (cf. Molinelli 2006, 2017; Kruschwitz 2015; Marotta, Putzu, & Donati 2017; Marotta, Rovai, De Felice, & Tamponi 2020), and some of these texts, such as the Pompeian graffiti (cf. Kruschwitz & Halla-aho 2007), the private letters (cf. Adams, 1977; Molinelli 2008, 2014, 2015), the Vindolanda tablets (cf. Adams 1975, 1992, 1995, 2003b; Cotugno 2015; Cotugno & Marotta 2017), the Bu Njem ostraca (cf. Adams 1994, 1999) and the *Tabulae Pompeianae Sulpiciorum* (cf. Adams 1990), have been paid much attention.

Nonetheless, the possibility of inferring clues of variation from these texts is highly debated, especially as far as inscriptions are concerned, because of a series of caveats that will be addressed in detail in this section. The reliability of inscriptions, for example, has been questioned by Mihăescu (1978) and Adams (2007, 2013), whereas Herman (see, e.g., Herman 1990, 2000, 2006), and, in his wake, Adamik (e.g., Adamik 2012, 2014, 2020), reached opposite and noteworthy conclusions.

The attention to papyri, ostraca, and tablets is more recent if compared to early studies on inscriptions (e.g., Schuchardt 1866-1868; Seelmann 1885; Carnoy 1906), and a first remark on the importance of papyri and ostraca for the study of Substandard Latin can be found in a seminal work by Campanile (1971), complaining the absence of new evidence from *CPL* in Väänänen's *Introduction au Latin Vulgaire* (1963, 1st ed.). This depends on the fact that Latin papyri, ostraca, and tablets are scattered in different editions, except for collections such as *CPL* and *CEL*, and that many findings, such as the Vindolanda tablets, the Bu Njem ostraca, the Didymoi ostraca, and many others, are relatively recent. In comparison to inscriptions, Latin papyri, ostraca, and tablets have the

unquestionable advantage of presenting quite long texts within documentary niches wherein information about the *intorno linguistico* and the texts' actors is more available. In fact, studies on texts such as letters allowed analyses on levels barely attainable from inscriptions, i.e., syntax and pragmatics (cf., e.g., Molinelli 1994, 2008, 2014, 2015; Halla-aho 2009, 2010; Fedriani & Ramat, 2015). Therefore, joining together documentary texts on different writing materials is beneficial insofar «coherent corpora» (Adams, 2007, p. 633) on papyri, ostraca, and tablets may refine in qualitative terms the mainly quantitative evidence from inscriptions. Indeed, a tendency to analyze these types of documents together is evident in recent research orientations: for example, the annotated corpora *CLaSSES* and *LLDB* (cf. § 1.2.3.6), as we shall see, consider deviations from Classical Latin within all types of primary sources.

In the following sections, the well-known issue of bad data will be discussed by presenting the various caveats to consider when examining these documents. Then, the current databases on documentary Latin, which enhance the possibility of carrying out fine-grained analyses, will be described. The final section will be concerned with the methodologies that have been proposed for the individuation of diatopic, diaphasic, and diastratic variation.

1.3.1 Latin bad data

The *bad data* problem within Latin documentation is exemplarily depicted by Vàrvaro (1998, p. 71):

La documentazione a noi disponibile è un campione sostanzialmente accidentale di un universo (l'insieme della documentazione scritta a suo tempo esistente), che a sua volta ci serve per ricavare conclusioni sugli usi parlati. Noi facciamo dunque una doppia estrapolazione: dal campione scritto all'universo scritto e dall'universo scritto all'universo parlato. Il procedimento sarebbe complesso e malsicuro anche se avessimo una chiara idea del rapporto che intercorre tra il campione e l'universo, se potessimo cioè ipotizzare se e come il campione rappresenti l'universo. Ma neanche questo ci è noto. Chi assume che la presenza documentale di un fenomeno provi l'esistenza e la diffusione di tale fenomeno lungo una traiettoria lineare che contempla solo assenze o presenze, arriva facilmente (una ciliegina tira l'altra) alla conclusione, diciamo, che a Pompei si parlasse italiano.

Vàrvaro pinpoints the following set of problems: (i) the available documentation is written.; (ii) the sample of this written documentation is accidental.; (iii) clues on the spoken language are expected to be inferred based on written, accidental, and therefore non-representative and ungeneralizable documentation. These remarks could lead to conclude that any analysis aiming to individuate linguistic variation is vain. Indeed, the doubt that whatever analysis, albeit carried out with the most cutting-edge methodologies, has not a heuristic value is legitimate. Nonetheless, this is precisely the challenge of the bad data, and trying to make the best use of them is, however, worth it. Therefore, it is first necessary to cope with a series of caveats, i.e., writing filter and authorship and representativeness.

1.3.1.1 *Phonological referent and scribal filter*

In fact, primary sources would attest a genuine linguistic datum, straight ascribable to the examined linguistic diasystem (cf. Cugusi 1991). Despite the absence of this type of filter, some caveats are needed, notably about the phonological referent of a given grapheme and the actors involved in producing the written document (cf. Marotta, Putzu, Donati 2017, p. 203).

First, the transfer from spelling, whilst traced back to ancient times, to its phonological referent is not that immediate. The attested variants of a given phenomenon are graphic variants rather than phonetic ones. This entails that a correlative study analyzing the presence vs. absence of a given phenomenon may only provide spelling variation clues. In fact, the hypothesis that the investigated phonological process also underlies standard spellings cannot be ruled out. This observation is the basis of Herman's and Adamik's methodology. As a consequence, other factors should be considered, such as the co-occurrence of other non-standard spellings and qualitative considerations concerning text type and writing characteristics (i.e., paleography). Indeed, the probability of phonetic spellings increases if the analysis is concerned with not well-finished texts much deviating from Classical Latin regarding different levels of analysis. Notably, phonetic spellings tend to surface when graphemic interference is involved, i.e., in case a scribe literate in another graphemic system writes a text in Latin script or in case a Latin word is written in another script (cf. Rovai 2015b). For this reason, an exclusively quantitative analysis does not have a heuristic value, and a thorough inspection of non-standard spellings in the historical dimension of each text is needed before providing general statistics.

Another issue, closely related to the above observations, concerns the value to be attributed to some graphemic variants deviating from Classical Latin orthography. The best representative example regards the evaluation of the allographs <e> and <o> for Classical Latin /ī/ (<i>) and /ū/ (<u>), namely whether they represent an archaism or the actual spelling of lax sounds (i.e., [ɪ] and [ʊ]), according to the path towards /e/ and /o/ in the Proto-romance vowel system (for a detailed account on this topic, cf. the different opinions by Adams 2013, p. 37ff and Marotta 2015, with bibliography).

Finally, the hypothesis of mechanical errors, as we shall see when discussing the issue of consonant gemination and degemination, must always be taken into account.

The writing filter issue is further complicated by the scribal filter, concerning the people involved in the production of the text, concerning the people involved in the production of the text. Indeed, it was a common practice that the author of the text made it written by an engraver or a professional scribe. As for inscriptions, for example, up to three figures may have been involved, i.e., the client commissioning the text, the editor of the draft, and finally the engraver, even if there are also fortunate cases in which the three figures converge into one (e.g., *AE* 1984, 790 [...] *manu mea scripsi*) (cf. Adams 2003a, p. 84; Bodel 2015). Documents on papyri, ostraca, and tablets, such as letters, were written mainly by professional scribes, but those from Egypt are often written by barely literate scribes than contemporary texts from Roman Britain, as Clackson (2007b) points out.⁵⁰ However, there are also fortunate cases of autograph texts, such as the letter of recommendation *CEL* I 169 (cf. Halla-aho, 2010, pp. 173-178).

Documentary texts have the undeniable advantage of being attributable to a particular *hic et nunc*. In most cases, the text is directly related to a geographical and chronological dimension. This allows correlating the linguistic datum to external variables necessary for the potential analysis of the evolution across space and time of a given phenomenon and ascertain its socio-historical value. Furthermore, text type and possible clues of the author(s)' social condition may provide evidence concerning diaphasic and diastratic variation.

Nevertheless, some issues concerning philological and historical aspects are to be taken into consideration. First, correlating a text to a particular geographical area is not that straightforward.

⁵⁰ «The scribes in the Greek-speaking East of the Empire did not seem to have received such a stringent training in Latin as the scribes in the West, since in his [Terentianus's] letters we find many more examples of the phonological changes that have taken place in the language which are generally absent from the documents at Vindolanda» (p. 249)

Indeed, some texts found in a given locality were written elsewhere: this is the case, for example, of letters and *instrumenta inscripta*, which, by nature, are circulating documents. However, *TM* Texts (cf. § 1.3.1.3), with the indication “found and written”, allows solving this problem whenever possible. Furthermore, ancient Rome society was characterized by high geographical mobility (e.g., massive immigrations, importations of slaves, mobile armies, colonizations), which largely contributes to the previously discussed homogeneity of Substandard Latin. Therefore, any analysis aiming to individuate variation (especially the diatopic one) has to cope with these historical aspects.

As for chronology, primary sources can be associated with a particular period. This is, undoubtedly, a great advantage for the identification of synchronic stages. However, if it is sometimes possible to circumscribe the date of a text (e.g., thanks to the indication of emperors or consuls, paleography, onomastics, *Diis Manibus* formulas, archeological clues), in many cases, only loose dates are provided, which span a period of even centuries (see, e.g., the dates 399-799 AD, 199 BC-284 AD which are recorded on *ECDS* and *TM*). In addition, it is to be avoided dating a text on the basis of linguistic elements: indeed, this would lead to circular reasoning.

Moreover, as for text type, a distinction between public and private documents⁵¹ may represent a valuable tool for the analysis of diaphasic (and, possibly, diastratic) variation, but the issues of the scribal filter on the one hand, and of representativeness on the other should be considered: as a matter of fact, epigraphic ateliers, as well as scribal offices, may level out the actual underlying varieties, and the surviving documents are however scarcely representative of the entire population: we cannot expect that lower classes did actually leave something.

1.3.1.2 Representativeness

In comparison with the empirical basis Historical Sociolinguistics deals with, Latin presents by a *worse* corpus. In fact, Latin is given back to us by a corpus that is both large and fragmentary, with a plurality of textual typologies spread out unevenly across time and space (cf. Poccetti 1999, pp. 28-30). An approximate estimate of the available primary sources is presented below.

The Graeco-Roman world can be defined as an epigraphic civilization. General estimates indicate that more than 600,000 Greek and Latin inscriptions were found (cf. Beltrán Lloris, 2015b),

⁵¹ For inscriptional text type cf. Beltrán Lloris (2015a). For the distinction of letters on papyri, ostraca and tablets cf. Cugusi (1992-2002, I, pp. 9-19, III, pp. 9-12)

without considering the other languages spoken before and during the Roman occupation, whose remains are attested on epigraphic documents as well (cf. Clackson 2015). Latin inscriptions amount to approximately 380,000 texts.⁵² TABLE 1.2, which elaborates Beltrán Lloris (2015b, pp. 138-139; Table 8.2),⁵³ shows the number of inscriptions available for each area of the Roman Empire.

	Total number of inscriptions (including instrumentum domesticum)	Total number of inscriptions (without instrumentum domesticum)	% (with instrumentum domesticum)
PROVINCIA / REGIO	425,645	327,680	100%
Rome	116,115	94,474	27.28%
Latium et Campania (Regio I)	37,999	32,465	8.93%
Africa Proconsularis	31,441	27,861	7.39%
Hispania Citerior	18,701	15,224	4.39%
Gallia Narbonensis	17,370	9,496	4.08%
Numidia	16,798	16,536	3.95%
Venetia et Histria (Regio X)	15,386	12,560	3.61%
Britannia	15,298	4,260	3.59%
Germania Superior	11,569	5,395	2.72%
Etruria (Regio VII)	9,586	5,601	2.25%
Gallia Belgica	9,558	4,006	2.25%
Dalmatia	9,972	8,461	2.11%
Aquitania	7,818	3,657	1.84%
Baetica	7,017	6,434	1.65%
Gallia Lugudunensis	6,890	3,024	1.62%
Lusitania	6,636	6,472	1.56%
Germania Inferior	6,410	3,042	1.51%
Pannonia Superior	6,402	5,103	1.50%
Samnium (Regio IV)	6,062	5,818	1.42%
Dacia	5,919	5,364	1.39%

⁵² It is not possible to provide any definitive estimate. The *Corpus Inscriptionu Latinarum* (CIL) contains approximately 180,000 inscriptions. Online databases gathers inscriptions published in CIL and in other editions (such as the *Année épigraphique*), see below § 1.3.2 for further details. The database EDCS, which is the most extensive, has recorded about 523,649 texts (March, 2020). Nonetheless, this number is not fully reliable: EDCS contains also ostraca; moreover, it records also non-Latin texts, with the indication “ETR”, “GR”, “VEN” etc., and sometimes tends to repeat the same text with different codes (cf. Beltrán Lloris, 2015b, 138).

⁵³ Retrieved from <http://manfredclaus.de/it/index.html> (March, 2012).

<i>Mauretania Caesariensis</i>	5,380	4,840	1.26%
<i>Apulia and Calabria (Regio II)</i>	5,161	4,959	1.21%
<i>Moesia</i>	4,976	4,764	1.17%
<i>Umbria (Regio VI)</i>	4,846	3,996	1.14%
<i>Pannonia Inferior</i>	4,477	3,189	1.05%
<i>Aemilia (Regio VIII)</i>	4,396	2,173	1.03%
<i>Noricum</i>	4,043	3,117	0.95%
<i>Transpadana (Regio XI)</i>	3,954	3,358	0.93%
<i>Sicily</i>	3,247	2,663	0.76%
<i>Raetia</i>	2,409	1,902	0.57%
<i>Picenum (Regio V)</i>	2,252	1,899	0.53%
<i>Sardinia and Corsica</i>	2,187	1,479	0.51%
<i>Bruttium et Lucania (Regio III)</i>	1,984	1,825	0.47%
<i>Achaea</i>	1,721	1,686	0.40%
<i>Liguria (Regio IX)</i>	1,718	1,480	0.40%
<i>Macedonia</i>	1,530	1,495	0.36%
<i>Asia</i>	1,334	1,322	0.31%
<i>Mauretania Tingitana</i>	1,202	1,102	0.28%
<i>Syria</i>	1,154	1,134	0.27%
<i>Galatia</i>	708	706	0.17%
<i>"Barbaricum"</i>	701	234	0.16%
<i>Arabia</i>	567	567	0.13%
<i>Palaestina</i>	562	490	0.13%
<i>Alpes Maritimae</i>	517	466	0.12%
<i>Aegyptus</i>	515	490	0.12%
<i>Thracia</i>	449	427	0.11%
<i>Pontus and Bithynia</i>	289	289	0.07%
<i>Lycia and Pamphilia</i>	230	230	0.05%
<i>Creta and Cyrenaica</i>	224	221	0.05%
<i>Cappadocia</i>	221	210	0.05%
<i>Alpes Cottiae</i>	199	193	0.05%
<i>Alpes Poeninae</i>	187	179	0.04%
<i>Cyprus</i>	97	85	0.02%
<i>Alpes Graiae</i>	87	85	0.02%
<i>Mesopotamia</i>	86	85	0.02%
<i>Cilicia</i>	81	80	0.02%
<i>Armenia</i>	7	7	0.001%

TABLE 1.2 Number of inscriptions in each area of the Roman Empire (Beltrán Lloris, 2015b, pp. 138-139; TABLE 8.2)

However, many inscriptions consist of few words, and reliable data should consider the number of words rather than the number of texts. In any case, *Rome, Latium et Campania (Regio I)*, and *Africa Proconsularis*, according to these data, show the highest frequency of inscriptions (respectively 27,28%, 8,93%, and 7,39%). This mere fact would suggest that labeling a given phenomenon as a local feature on the basis of absolute data as well as employing relative frequencies estimated via a proportion of the number of texts is to be avoided.⁵⁴ The situation becomes even more patchy and uneven if one considers the distribution of inscriptions across time. CHART 1.1 shows the approximate data retrieved from *EDCS* (June 2020), including also tablets, which properly belong to the epigraphy domain, and ostraca, which belong to the papyrology domain (though the durable material makes them more like inscriptions). This chart offers but a sample picture of the 124,803 texts whose date is specified within this database. Non-Latin texts recorded on *ECDS* have been excluded. The highest frequency of documents, according to these data, affected the first two centuries of the Christian era, i.e., those characterized by the so-called *furor epigraphicus*, with a dramatic decrease from the 5th century onwards:

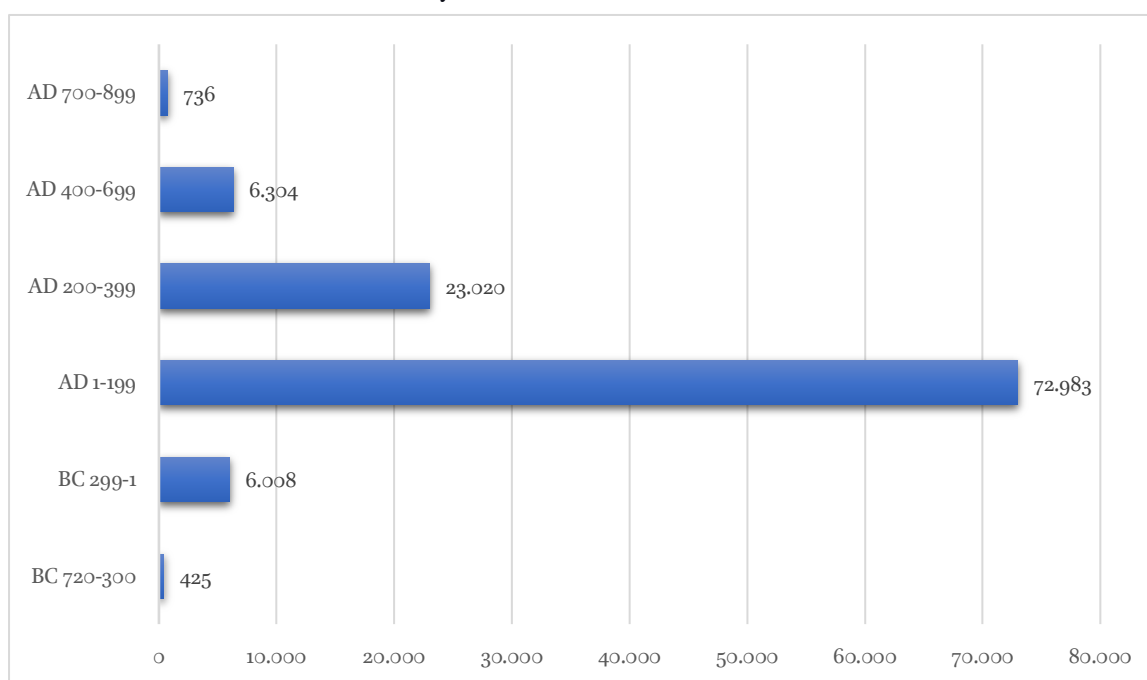


CHART 1.1 *Frequency of dated inscriptions across time. Data from EDCS*

⁵⁴ This method cannot have a heuristic value for two reasons: first, it would provide only relative data concerning literacy rather than the actual diffusion of a given phenomenon. Secondly, even if a research is concerned with orthography, it could not provide reliable results because the number of inscriptions does not provide an estimate of the actual words in which a given phenomenon could have been potentially documented.

If one combines regional and chronological criteria, as is shown in CHARTS 1.5 - 1.10 – displayed in the Appendix (§ 1.6) for ease of reference – data show that Rome has always been the area with the highest frequency of inscriptions, except for the earliest period. Other *regiones* and *prouvinciae* show fluctuating frequencies, which tend to coincide with the periods of conquest and abandonment of each area.

As for documents on other writing materials, an approximate estimate could be provided by searching papyri.info, which records papyri, ostraca, tablets, and even parchments. For this reason, the below charts will provide estimates partially overlapping TABLE 1.2 with regard to ostraca and tablets. Here too, it is not possible to provide any conclusive estimate of the total number of Latin texts on such supports. The main publications are the *Corpus Epistularum Latinarum* (CEL), the *Chartae Latinae Antiquiores* (ChLA), the *Corpus Papyrorum Latinarum* (CPL), and, for specific groups of texts, the *Albertini Tablets* (TAlb.), the *Vindolanda Tablets* (TVindol.) and the *Ravenna Papyri* (P.Ital.). Many other texts are scattered in different editions. A search on papyri.info by means of the filter “language” reveals about 3,240 documents. However, this result is not reliable since many of the resulted documents turn out to be written in Greek. If Greek texts are excluded, Latin texts, whose distribution is displayed in TABLE 1.3, are approximately 1,637 (retrieved on June 2019):

DATE	WRITING MATERIAL	N° OF TEXTS (according to material)	REGIO / PROVINCIA	N° OF TEXTS (according to material and provenance)
1st BC	papyri	7	Aegyptus	7
BC 1st – 1st AD	papyri	12	Aegyptus	12
1st AD	tablets	66	Aegyptus	2
			Germania Inferior - Cingula	1
			Britannia - Londinium	2
			Germania Superior - Vindonissa	61
	ostraca	84	Aegyptus	63
			Palaestina - Masada	21
	papyri	67	Aegyptus	50
			Palaestina - Masada	17
1st-2nd AD	tablets	420	Britannia - Vindolanda	420
	ostraca	23	Aegyptus	23
	papyri	17	Aegyptus	17

2nd AD	tablets	20	Aegyptus	20
	ostraca	46	Aegyptus	46
	papyri	128	Aegyptus	127
			Palaestina	1
2nd-3rd AD	papyri	25	Aegyptus	24
			Palaestina	1
3rd AD	tablets	3	Aegyptus	3
	ostraca	165	Aegyptus	20
			Africa Proconsularis – Bu Njem	145
	papyri	250	Aegyptus	88
			Syria - Dura Europos	162
3rd-4th AD	papyri	11	Aegyptus	11
	ostraca	2	Aegyptus	2
4th AD	ostraca	12	Aegyptus	2
			Africa Proconsularis	10
	papyri	78	Aegyptus	78
	parchments	2	Aegyptus	2
4th-5th AD	papyri	9	Aegyptus	9
	parchments	2	Aegyptus	2
5th AD	papyri	36	Aegyptus	29
			Aemilia (Regio VIII) - Ravenna	6
			Sicily	1
	tablets	34	Africa Proconsularis –Theveste	34
5th-6th AD	ostraca	12	Africa Proconsularis	12
	papyri	4	Aegyptus	3
			Aemilia (Regio VIII) - Ravenna	1
	parchments	1	Aegyptus	1
6th AD	ostraca	4	Africa Proconsularis	3
			Aegyptus	1
	papyri	45	Aegyptus	23
			Aemilia (Regio VIII) - Ravenna	19
			Samnium (Regio IV) - Reate	1
	parchments	2	Aegyptus	2
7th AD	papyri	26	Aegyptus	3
			Gaul	9
			Aemilia (Regio VIII) - Ravenna	13
			Switzerland	1
8th AD	papyri	4	Aemilia (Regio VIII) - Ravenna	4

TABLE 1.3. *Number of Latin texts recorded on papyri.info according to date, provenance, and writing materia*

The below charts display the frequency of these documents according to writing material (CHART 1.2), provenance (CHART 1.3) and date (CHART 1.4)⁵⁵:

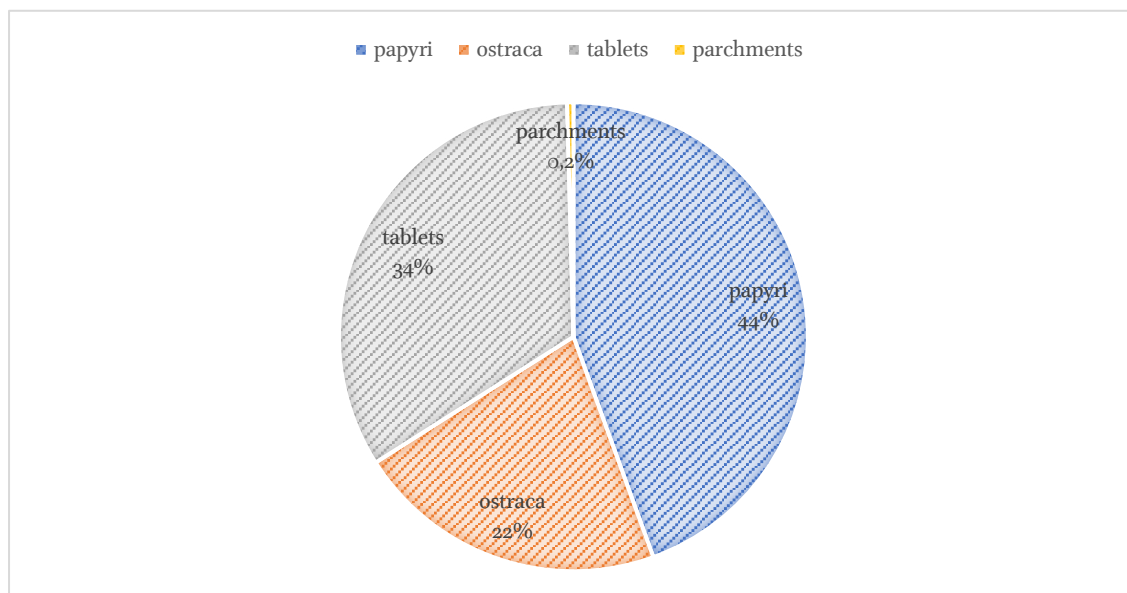


CHART 1.2. *Frequency of Latin texts recorded on papyri.info according to writing material*

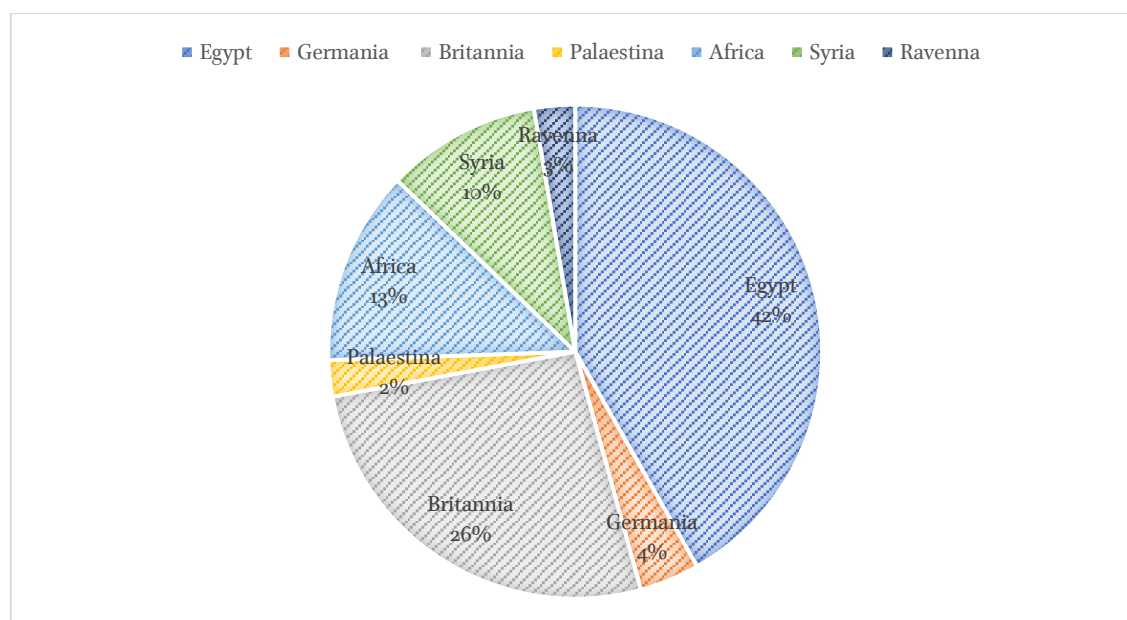


CHART 1.3. *Frequency of Latin texts recorded on papyri.info according to provenance. Data from papyri.info*

⁵⁵ GRAPH 10 gathers the texts presented in TABLE 3 with different criteria as for the indication of date, i.e., I BC + I BC – I AD (TABLE 3) = I BC – I AD (GRAPH 10), I AD + I-II AD + II AD (TABLE 3) = I-II AD (GRAPH 10), II-III AD + III AD (TABLE 3) = II-III AD (GRAPH 10), III-IV AD + IV AD (TABLE 3) = III-IV AD (GRAPH 10), IV-V AD + V AD (TABLE 3) = IV-V AD (GRAPH 10), V-VI AD + VI AD (TABLE 3) = VI AD (GRAPH 10), VII AD + VIII AD (TABLE 3) = VII-VIII AD (GRAPH 10).

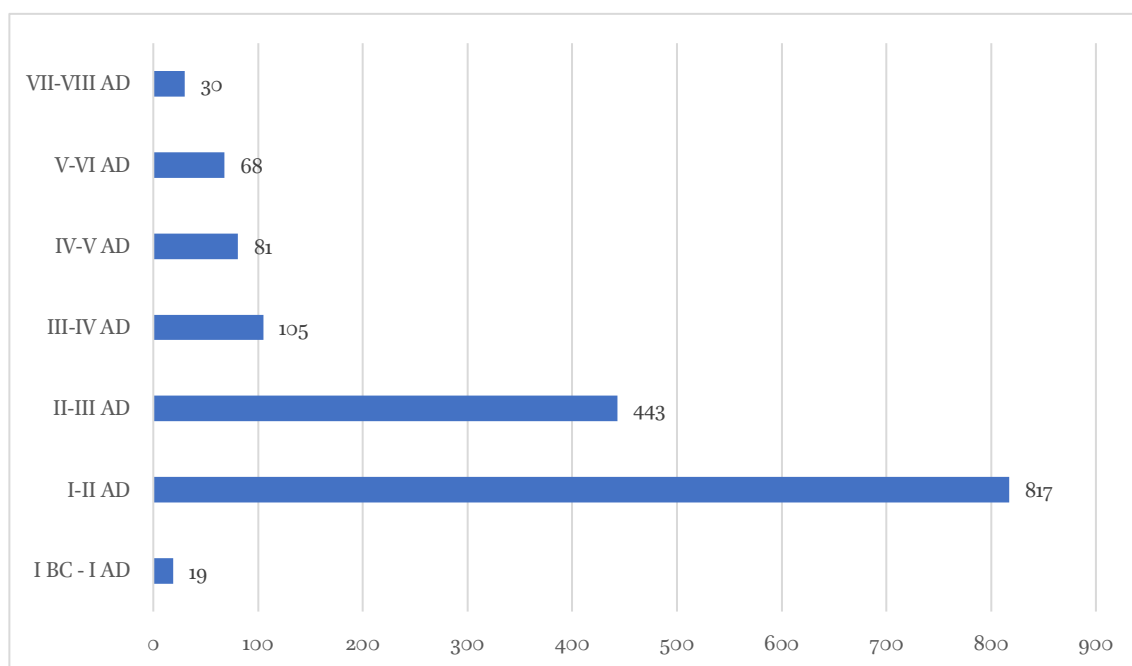


CHART 1.4 Number of papyri, ostraca, tablets and parchments across time. Data from papyri.info

It should be stressed that papyri.info does not record all the actual texts on such supports: for example, the *Tabulae Pompeianae Sulpiciorum* (*TPSulp.*), the *Tabulae Londinii* (*Tab.Lond*), which are instead recorded on *EDCS* - and some texts published on *CEL*, *CPL*, and *ChLA* are not recorded.

CHARTS 1.1 and 1.4 show a similar trend as for frequency across time. Most of the documents recorded on papyri.info, except those attested from the 5th century onwards, come from areas on the Roman Empire's borders and are associated with military districts. TABLE 1.3 and CHARTS 1.2 and 1.3 clearly show that most of the documents are represented by papyri (44%) and come from Egypt (42%). These frequencies are only superficially overlapping since many papyri come from Ravenna and Dura Europos, whereas Egypt shows a high number of documents on other supports as well, notably ostraca. These documents allow shedding light on the presence of Latin in Egypt, which is scarcely represented by inscriptional data (cf. TABLE 1.2). A similar consideration can also be done for documents from Palaestina (both papyri and ostraca) and Syria (papyri). However, texts from Masada and Dura Europos are official documents, related to ephemeral military districts and generally provide a scarce attestation of phenomena deviating from Classical Latin. Africa provides interesting groups of documents, generally characterized by many deviations from Classical Latin, i.e., the Bu Njem ostraca (253-259 AD) and texts of the Vandal era, i.e., the famous Albertini Tablets (end of the 5th century AD) and a group of ostraca approximately dated 5th-6th century AD (*O.Vandal*).

A significant number of texts, represented mainly by the Vindolanda tablets, come from Roman Britain (26%).

This rapid picture of the Latin available primary sources would suggest, at first sight, that these texts are scarcely representative, and for each period, cannot provide a balanced sample for the study of variation. In general, a given phenomenon could be attested in a particular area and a particular period just because of documentary density. For example, we cannot assume that Latin papyri from Egypt provide an actual variety of “Egyptian” Latin, since the fact that the Latin papyri mostly come from Egypt is totally accidental. This problem is further complicated by the previously mentioned writing and scribal filters.

In the following section, we shall depict the methodologies that allow us to make the best use of these bad data.

1.3.2 The importance of digital resources

Despite the above caveats, the undeniable merit of documentary texts lies in a large amount of available data and the possibility of elaborating them, even in statistical terms, thanks to the modern digital resources that have been digitalizing such texts since the early 2000s. As a matter of fact, the more data can be analyzed, the more plausible tendencies are likely to be identified. Moreover, such databases present the advantage of gathering texts scattered in various publications. We shall introduce a brief overview of the major tools which have been employed for the present study (for a more detailed description of such resources, see Elliot 2015 and Marotta, Rovai, De Felice & Tamponi 2020, pp. 41-49).

As for epigraphy, the main sources are represented by the databases gathered within the *Electronic Archive of Greek and Latin Epigraphy* (EAGLE)⁵⁶ and by the *Epigraphic Database Clauss-Slaby* (EDCS)⁵⁷ to which we have previously referred. EDCS is the most extensive database, gathering approximately 523,650 texts (inscriptions, tablets, and ostraca). Nonetheless, as previously mentioned, this estimate is not entirely reliable of the actual Latin texts on such supports, since many of them are recorded redundantly (i.e., the same text is associated with different univocal codes), and also non-Latin texts are recorded (these texts are recorded under univocal codes and are

⁵⁶ www.eagle-eagle.it.

⁵⁷ <http://manfredclaus.de/it/index.html>

therefore included within the total number of texts; however, the text is not reported but is only signaled by means of headings such as “ETR”, “VEN”, “GR”, “PUN”, “OSK” etc.). Furthermore, *EDCS* is not fully reliable for the adopted ecdotic criteria (cf. Elliot 2015), and a further check on other databases and original publications is needed. However, *EDCS* is very useful as first source of consultation and generally provides information also about the date and text type. The databases within the *EAGLE* project can be used to check the texts reported on *EDCS*: in fact, each text recorded on *EDCS* is provided with a direct link to the other potential databases wherein it has been recorded. The databases within the *EAGLE* project (cf. Orlandi 2017) are the *Epigraphic Database Roma (EDR)*,⁵⁸ the *Epigraphische Datenbank Heidelberg (EDH)*,⁵⁹ the *Epigraphic Database Bari (EDB)*⁶⁰ and *Hispania Epigraphica (HEp)*.⁶¹ *EDR*, managed by the University of Rome “La Sapienza”, contains approximately 94,188 inscriptions (23 July 2020) from Rome and other *regiones* of Italy, including Sicily and Sardinia. This database is very accurate and provides an extensive bibliography as well as photos and drawings for most of the texts. *EDH*, managed by the Heidelberg Akademie der Wissenschaften, contains approximately 81,419 inscriptions from all over the Empire. At present (23 July 2020), inscriptional data from *Alpes*, *Raetia*, *Noricum*, *Pannonia Superior* and *Inferior* have been entirely recorded. *EDB* which is managed by the University of Bari “Aldo Moro”, gathers about 41,694 inscriptions from Christian Rome. Finally, *HEp* contains the Roman inscriptions from the Iberian Peninsula (ca. 30,820 texts).

As for Greek inscriptions, which can provide useful information for the study of Substandard Latin (i.e., Latin loanwords and Latin personal names, whose adaptation may hint at Latin phonological processes), the main tools are the *Packard Humanities Institute Searchable Greek Inscriptions (PHI Greek Inscriptions)*,⁶² containing approximately 210,000 texts; the *Inscriptiones Graecae Digital Edition (IGDE)*,⁶³ managed by the Berlin Akademie der Wissenschaften, containing Greek inscriptions published on *IG*, the *Epigraphische Datenbank zum antiken Kleinasien*,⁶⁴ managed by the Department of Ancient History at the University of Heidelberg, containing Greek inscriptions from Asia Minor.

⁵⁸ <http://www.edr-edr.it/default/index.php>

⁵⁹ <https://edh-www.adw.uni-heidelberg.de/home>

⁶⁰ <http://www.edb.uniba.it>

⁶¹ <http://eda-bea.es>

⁶² <https://inscriptions.packhum.org>

⁶³ <http://telota.bbaw.de/ig/index.html>

⁶⁴ <https://www.epigraphik.uni-hamburg.de/content/index.xml>

As for papyri, ostraca and tablets, the most useful resource, as previously mentioned, is papyri.info,⁶⁵ born under the leadership of Roger Bagnall. This database gathers materials from the *Advanced Papyrological Information System* (APIS), the *Duke Databank of Documentary Papyri* (DDbDP), the *Heidelberger Gesamtverzeichnis der griechischen Papyrusurkunden Ägyptens* (HGV).⁶⁶ The *Papyrological Navigator* (PN) allows to search within these materials (cf. van Minnen 2011).

Trismegistos (TM),⁶⁷ to which papyri.info is closely connected, is a further extensive database that provides metadata on epigraphical and papyrological documents, such as place (*TM Place*), date and edition(s) (*TM Texts*), prosopography (*TM people*). It is extremely useful for supplementing information about inscriptions, especially as far as date is concerned and mapping texts. It currently counts 844,651 entries.

All these digital resources are fundamental tools for the study of Latin (and Greek) primary sources. However, they are not linguistically annotated corpora, and relevant data can be drawn only indirectly by means of the adopted ecdotic criteria, as well as thanks to the application of particular diacritics. For instance, EDCS tends to signal aberrant forms through angle brackets, wherein the Classical Latin spelling is inserted with the equals along with the non-Classical spelling (e.g. $f<e=I>cius$ in EDCS-11700020 indicates that the text reports FICIMVS, whose normalization is *fecimus*), or by means of an exclamation mark at the end of the aberrant form (e.g. *Maxemina(!)* in EDCS-30100447 for MAXIMINA). However, these diacritics, together with the other ones following the Leida system (cf. below) are not applied consistently. In addition to that, it is not possible to query the internal search engine to find the forms signaled by means of these diacritics. As for papyri.info, aberrant forms are generally signaled through an asterisk (e.g. *invecill[o]** in <http://papyri.info/ddbdp/c.ep.lat;242>, with the Classical Latin form in the *apparatus*), but also in this case, this criterion is not applied consistently.

In the last decade, Latin primary sources have begun to be annotated with linguistic information. In this framework, the *Corpus for Latin Sociolinguistics Studies on Epigraphic texts* (CLaSSES)⁶⁸ and the *Computerized Historical Linguistic Database of Latin Inscriptions of the Imperial Age* (LLDB)⁶⁹ represent the most remarkable projects.

⁶⁵ <http://papyri.info>

⁶⁶ <http://www.rzuser.uni-heidelberg.de/~gvo/>

⁶⁷ <https://www.trismegistos.org/index.php>

⁶⁸ <http://classes-latin-linguistics.fileli.unipi.it>

⁶⁹ <http://lldb.elte.hu/en/database/>

At the moment *CLaSSES*, built at the University of Pisa under the leadership of Giovanna Marotta, collects Old and Archaic Latin inscriptions from Rome and Central Italy (about 1,250 inscriptions), the Vindolanda Tablets, and 220 letters on papyrus and ostrakon from Egypt, North Africa, and the Near East. A further section on inscriptions from Sardinia (1,814 inscriptions) is under construction. The annotation is concerned with the domain of grapho-phonology and morpho-phonology.⁷⁰ *LLDB*, built at the MTA Research Institute for Linguistics of Budapest under Béla Adamik's leadership, pursues an initial project of József Herman and aims to record non-classical phenomena with regards to all levels of analysis within the primary sources of the Imperial age. Inscriptions from all over the Roman Empire have been recorded, as well as papyri and ostraca.⁷¹ At present, the database has recorded approximately 90,000 relevant forms (i.e., non-Classical forms). These databases follow different criteria of annotation: *CLaSSES* records the entire text, and an ID-Token is also assigned to Classical forms; moreover, it annotates also paragraphematic signs (i.e., *apices* and *I longae*, but not punctuation); *LLDB*, instead, records only non-classical forms, according to Herman's methodology (cf. § 1.3.3). However, either of them shares the purpose of associating linguistic information to extra-linguistic one, with different aims as far as the study of linguistic variation is concerned. *CLaSSES* is mainly concerned with syntopic corpora, since it focuses especially on diaphasic and diastratic variation (cf. Marotta 2015). *LLDB* mainly focuses on regional variation, and for this reason deals with a more extensive amount of texts from the age of the second dialectalization stage onwards. These corpora are therefore complementary, and the present study will benefit from both of them. However, for the purpose of this work, a specific tool for collecting data has been created as well, which will be further described in § 1.5.

1.4 Case studies

The phenomena that will be analyzed are suitable for a sociolinguistic analysis, as the vast bibliography devoted to them demonstrates. Indeed, with different degrees of interpretation, all of these phenomena invoke the dimensions of diatopic, diaphasic, and diastratic variations and contact (notably, with Koine Greek and the Sabellian languages, but also the Semitic and Celtic languages in some cases). For the analysis of these phenomena, different methodologies will be adopted, according to the empirical nature of the data, i.e., according to the diffusion of the

⁷⁰ For further details, cf. De Felice, Donati & Marotta (2014, 2015), Marotta (2016a), Marotta, Rovai, De Felice, & Tamponi (2020).

⁷¹ For further details, cf. Adamik (2009, 2012, 2016).

phenomenon within the documentation on one hand, and to its nature on the other. In general, a methodology with “progressive zooms”, so to speak, will be applied; once all deviations from Classical Latin have been collected, the methodology of analysis will be calibrated on the basis of what data offer: a quantitative approach if data for a given synchronic or syntopic group of texts are balanced enough to allow the use of statistics, and a more traditional one, i.e., an investigative method joining all the possible tools of philology and historical research, in case the documentary framework is patchy and fragmentary. The aim is to provide a fine-grained analysis of phonological and orthographic change progression, with particular reference to the phases of actuation, embedding, and evaluation (in case of meta-linguistic evaluation, explicit or implicit, by classical authors and grammarians is available).

In the attempt to individuate variation clues, Mancini's (2012, 2014, 2018) methodology will be generally followed. Provided the attestation of variants in praesentia, the implicational scale diatopy > diaphasy > diastraty is to be applied, i.e., diaphasic variation can be detected only provided that diatopic variation has been excluded, and diastratic variation can be detected only provided that diaphasic variation has been excluded. To individuate diatopic variation for a given synchronic cut, it is necessary to examine texts from different areas. To individuate diaphasic variation, it is necessary to examine synchronic and syntopic texts differing as for text type (i.e., formal vs. informal). To individuate diastratic variation, it is necessary to examine synchronic, syntopic, and synphasic texts; alternatively, it can be inferred indirectly from diaphasic variation according to Labov's curvilinear principle. A fundamental handhold is represented by rhetors and grammarians' evaluation, who, implicitly or explicitly, assign sociolinguistic labels. These judgments, if available, are particularly important to shore up the evidence from random remains.

The possibility of applying this methodological template varies considerably according to the analysis level, the examined synchronic cut, and, obviously, the available data. As for the grapho-phonological level, the writing and scribal filters raise many issues, especially as far as diaphasic, and diastratic variation is concerned. In fact, detecting, within a given synchronic and syntopic corpus, variants related to formal vs. informal texts does not necessarily provide actual diaphasic variants but rather spelling variants, given the general assumption that formal texts are supposed to be more correct as for orthography. However, it can be assumed that if there is strong evidence, corroborated by grammarians' evaluation, that a given phenomenon is markedly dialectal, then it is conceivable that this is also connoted in diaphasic and diastratic sense.

We shall present a rapid overview of the being examined phenomena by stressing their relevance for a socio-historical analysis that focuses on continuity and discontinuity along the Latin-Romance continuum. A more accurate *status quaestionis* will be presented in the specific chapters.

1. Vowel prosthesis before word-initial sC. Vowel prosthesis before word-initial sC characterizes some Romance varieties, notably the Ibero-Romance and Gallo-Romance languages, Logudorese Sardinian, and, to a certain extent, Tuscan and, consequently, Italian (wherein it was proper of literary tradition until the 80s of the past century). A thorough diachronic study of vowel prosthesis in the Romance languages is provided by Sampson (2010). This phonological process is attested within Latin documentation since the 1st century AD, and is recorded in all historical grammars of the Latin language and studies on Substandard Latin (cf., e.g., Leumann 1977, pp. 104-105 § 116; Väänänen 1981, p. 48, § 84). Several studies have highlighted a particular presence of this phenomenon among the inscriptions from Roman Africa (cf. Schuchardt 1866-1868, II: 337-365; Prinz 1938; Acquati 1971, pp. 182-183; Fanciullo 1992; Lorenzetti & Schirru 2010). This piece of evidence would suggest that African and Sardinian Latin, and, consequently, submerged Afro-Romance and Sardo-Romance, might have shared this isogloss, together with other shared characteristics, such as vowel system and the preservation of /k/ before front vowels (cf. Fanciullo, 1992; Lupinu 2000, 2003; Lorenzetti & Schirru 2010, 2013; Adamik 2020). The study aims to analyze the actual diatopic dimension of this phenomenon by providing data of its occurrence in each area of the Roman Empire, also in relation to other related phenomena (i.e., VsC > sC apharesis, and *insC* > *isC* and *ex(s)C* > *esC* developments, with following aphaeresis and possible prosthesis by reanalysis), in order to ascertain clues of regional diversification.

Furthermore, this study aims to address the relation between Latin and Koine Greek as for vowel prosthesis. In fact, vowel prosthesis before word-initial sC is also attested in Koine Greek as evidenced by papyri and inscriptions from Egypt, Asia Minor, and Syria (cf. Gignac 1976, p. 312 for Egypt and Bubenik 1989, pp. 234-235, 242, and 2007, p. 636 for Asia Minor and Syria). In the light of this, previous studies have sought to attribute the spread of vowel prosthesis in Latin as due to Koine Greek influence (cf. Schuchardt, 1866-1868, II: 337-365; Prinz, 1939; Pisani, 1940); conversely, vowel prosthesis in Koine Greek has been fragmented and attributed to different substrates (i.e., the Aramaic substrate as for Syro-Palaestinean Koine Greek and Phrygian substrate as for Asia Minor Koine Greek).

2. **Consonant gemination and *geminatio litterarum*.** Consonant gemination in Latin raises many solicitations regarding the dimensions of variation, as the comprehensive bibliography demonstrates (cf., e.g., Graur 1929; Giannini & Marotta 1989; Benedetti & Marotta 2014). Nonetheless, this topic is not suitable for a systematic analysis both because of the scarce reliability of epigraphic writing as far as the notation of *geminatae* is concerned, and because of the nature itself of the phenomenon, which regards different segments, different distributional patterns, and has a heterogeneous origin. Therefore, a systematic analysis would run the risk of providing dispersive and, to a certain extent, not reliable results. Indeed, the major monographs concerning consonant gemination, i.e., Graur (1929) and especially Giannini & Marotta (1989) excludes programmatically epigraphic data. Therefore, our analysis will be concerned with a series of specific topics which have been individuated *a posteriori* through the examination of the collected data, i.e., (i) the emergence of the writing habit of the *geminatio consonantium*; (ii) gemination of preconsonantal *s*-, (iii) remarks on the *littera*-rule; (iv) phonological processes of gemination before /r/, /j/ and in intervocalic environment.

(i) A sample of archaic inscriptions dated 3rd-1st century BC will be analyzed to deepen the initial spread of this writing habit, which, as is known, is applied with a certain consistency only from the 1st century BC onwards. The analysis will also focus on other iconic devices for signaling syllable weight, both on the line and above the line.

(ii) The gemination of preconsonantal *s*- is a particular writing habit attested within Latin documentary texts (e.g. RESSTITVIT, *AE* 1904, 21), Greek inscriptions and papyri (e.g. Ἀβασσokάντος, *SEG* XXXVII, 451), and Oscan inscriptions written in the epichoric alphabet. This type of *geminatio consonantium* has been recently analyzed within the corpus of the Vindolanda Tablets by Cotugno & Marotta (2017), but a wider re-examination of its grapho-phonological and socio-graphic value is needed. Therefore, forms showing this feature within the three aforementioned linguistic traditions will be collected in the attempt to investigate its diffusion in chronological and areal terms, to determine whether this phenomenon could be attributed to a writing koine, and to ascertain its phonological value. The emergence of this writing habit is to be put in relation to syllable structure, and its analysis will be significant in the light of the results drawn from CHAPTER 2. Indeed, the gemination of preconsonantal *s*- affects the sC_[-cont] cluster, and might suggest a tendency of /s/ towards the association to the coda position of the previous syllable (as further clues in syllable division in non-literary texts such as BASILIS|CVS, CRES·CENS may suggest, cf. Mancini 2019, pp. 39-40). The fricative /s/, attracted by the previous syllable, would thus become ambisyllabic. A further piece of evidence could be represented by the fact that, in relative terms, this

type of *geminatio* shows a significant correlation to the presence of vowel prosthesis (e.g., ISSTERCORIA, *ICUR* III 6932).

(iii) A further subsection will address the *littera*-rule issue, which raises many problems as far as the concept of phonetic law is concerned. The analysis is meant to re-examine a series of critical lemmata which are supposed to comply with this rule. Primary sources, despite the caveats concerning the reliability of the notation of consonantal length, will allow to shed light on some controversial issues and will offer the evidence of new lemmata worth of tentative studies on the relation between monophthongization and gemination as described by Benedetti (1996) and Benedetti & Marotta (2014).

(iv) Phonological processes of spontaneous intervocalic gemination and gemination before /j/ and /r/ will be analyzed. The analysis will be concerned with lexemes which stably display the singleton spelling in lexical repertoire, i.e., by excluding all those lexemes with fluctuating spellings, such as *Appuleius* ~ *Apuleius*, *Britannicus* ~ *Britannicus*, and many other onomastic bases, as well as most instances of the gemination of /s/. Tendencies concerning regional and social diversification will be drawn, and special attention to syllable structure will be paid.

3. /kt/ outcomes. This topic assumes particular relevance with regards to the issue of continuity and discontinuity of substrate phenomena. As is known, several scholars (e.g. Baherens 1922, p. 85; Bonfante 1968, p. 544; Lausberg 1971, §§ 432-434, Pisani 1978, 62-63) interpreted the spelling <t> as evidenced by inscriptions (e.g. OTAVS in *CIL* IV, 4870) as an allograph of the spelling <tt> (= /tt/), hinting at the assimilation continued in Sardo-Romance and, partially, Italo-Romance. Given that the spelling <t> is particularly widespread among the Pompeian inscriptions, and that the Italic languages show a tendency towards the weakening of the coda within this cluster (as spellings such as <ht> and <t> would show, cf., e.g., Osc. *Úhtavis*, Umbr. *speturiae*), these two phenomena have been put in relation and therefore projected over the Romance situation by means of the diachronic formula *-kt- > -t(t)-*. Mancini (2000a, 2000b), following Väänänen's intuition, points out, with phonological and philological argumentations, the unlikelihood that <t> may be superimposable to <tt> (= /tt/). Rather, it would hint at a *Sprachbund* feature of Central Italy around the end of the Republican era, then aborted with the spread of Neo-Standard Latin. A different account is provided by Adams (2013, pp. 166ff), who tends to interpret the <t> spellings as instances of degeminated spellings of <tt>. Differently from other scholars such as Baherens, Bonfante and Pisani, however, he does not consider this outcome as triggered by the Italic languages. A punctiform analysis of the various treatments of Latin /kt/ within primary sources is therefore needed, to

ascertain whether the spelling <t> is typical of the Late-Republican era and mainly widespread within Central Italy, and the potential relationship <t> may have with <tt>.

1.5 Data collection

In order to collect as much data as possible, different methodologies have been applied.

As for epigraphic data, the principal source was *EDCS*, which was conveniently adapted for overcoming some difficulties concerning the consultation of this database. As for papyrological documentation, the first source was *papyri.info*.

These databases, as previously mentioned, are not designed for specific linguistic inquiries but rather for searching specific words or groups of letters. Therefore, linguists are expected to know already which phenomena are to be searched before collecting data. Since our analyses are concerned with specific phenomena, these sources, at first glance, would seem suitable for our purpose. Nevertheless, a series of issues are to be coped with concerning, on the one hand, the criteria whereby non-classical forms are recorded within these databases and, on the other, the tools which are to be elaborated for classifying the collected data. We shall first discuss the second issue.

Let us suppose that *EDCS* and *papyri.info*, which possibly collect all the available Latin primary sources, can provide, without any glitch, all the non-classical spellings a linguistic study is going to deal with. At this point, it would be necessary to elaborate a system for collecting these data and classifying them according to the criteria suitable for a sociolinguistic study, i.e., in merely correlative terms, by tagging these data with linguistic and extra-linguistic information (e.g., as for text type, date, provenance). The easiest way is to prepare a spreadsheet, record each form showing a given feature, and associate it with the required metadata. However, this procedure would imply some methodological risks for our specific purposes: since the analysis is not concerned with a preset corpus, but with all the possible forms showing a given feature, such a technique would not be the surest way and would take a long time. A system for automating this procedure is therefore needed. We will get to this point later.

As for the first issue, i.e., the specific criteria whereby non-classical forms are recorded on *EDCS* and *papyri.info*, we have previously referred to the use of particular diacritics, which, however, are not applied consistently. It is necessary to discuss these two databases separately since their search

engines and the adopted ecdotic criteria (indeed, these aspects are deeply interrelated) are much different from each other.

The search engine of *EDCS* does not permit the extraction of all the forms showing a given feature. Generally, there may be two cases, depending on the way the text has been reported, i.e., according to diplomatic criteria or according to the ecdotic criteria of the Leida system.

(i) In case the text has not been normalized, a given non-classical form can be detected directly via the search engine by typing a set of characters or a word within the window “search text 1”. For example, we can detect vowel prosthesis instances, *-kt-* spelling variants, and geminated consonants by simply typing a given set of characters containing the required features. This is relatively easy as for vowel prosthesis: as a matter of fact, a limited set of combinations of characters is expected (which can be summed up with the formula $V(v_1, v_2...v_n)sC(c_1, c_2...c_n)$), which do not return an unmanageable amount of results. For example, by searching <isp> we can find *ispesina* (*CIL* 8 150, *EDCS*-14900104). However, it must be said that, in this way, some cases of vowel prosthesis with geminated /s/ cannot be found. This procedure is more complicated as for the *-kt-* spelling variants and geminated consonants. In fact, in the first case, the most commonly expected spellings are <tt> and <t>. It goes without saying that such a search would return a vast amount of results, most of which are not relevant for this specific study. Therefore, one should already know which word, or rather which lexemes and morphemes, are more likely to undergo these phonological processes, i.e., those showing *-kt-*, such as variants of the personal names *Octavius*. Indeed, by typing <otav>, we can find *OTAVIVS* (*CIL* 8 1053, *EDCS*-17700877). As for consonant gemination, we have to cope with the fact that this phenomenon affects various segments. Therefore, one is expected to search the doubled variants of each consonant. Even in this case, such research would return a too vast amount of results, and only if one already knows which word is to be searched, relevant data can be found.

(ii) In case the text has been normalized, the investigated phenomena are indicated by means of curly brackets (this is the case of prosthesis and geminatio consonantium, e.g. {I}*Spiritus* in *EDCS*-06000227, Aſſ{f}ricanus in *EDCS*-09801946), round brackets (in case of <t> for /kt/, i.e., (c)t, e.g. O(c)tavia in *EDCS*-16300692), and angle brackets (in case of <tt> for /kt/, i.e., <c=T>t; e.g., O<c=T>ta<v=B>u(m) in *EDCS*-32804885). The advanced function “wrong spelling” allows the detection of these forms by using the same research criteria shown in (i), i.e., as if that form was reported according to diplomatic criteria (for example, we can find O<c=T>ta<v=B>u(m) in *EDCS*-32804885 by typing <ottab>).

In light of the above, the following problem clearly arise. Typing a combination of characters for detecting the investigated phenomena poses many difficulties: on the one hand, the results of

the research are quantitatively tricky to manage, and most of them are not relevant to our research; however, trying to overcome this problem by searching specific lexemes risks to restrict the potential relevant forms dramatically; furthermore, we cannot actually know *a priori* the possible variants of a given underlying or etymological form. Even without considering this problem, the issue still remains how to record and classify these forms automatically, in order to avoid, on the one hand, an unnecessary waste of time, and, on the other hand, human mistake (which would be almost unavoidable if the recording process was totally carried out manually).

To overcome these problems, it was necessary to bypass the internal search engine and work directly on the texts reported within *EDCS*. In fact, by leaving all search fields blank, it is possible to visualize all the texts therein. Nonetheless, since the server has a limit of data processing and cannot display more than about 40,000 texts, some specific filters were used for extracting all the actual texts: for those areas containing less than 40,000 inscriptions, the filter “locality” was applied; for those areas with a high epigraphic density, such as Rome, *Latium et Campania Regio I* and *Africa Proconsularis*, further subfilters were employed, i.e., those referring to *titulorum distributio* and *virorum/feminarum distributio*, which, variously combined thanks to the boolean operators, permitted to extract all the texts within these areas (with redundant results, since many texts are associated to different text types and people).

The extracted texts (data retrieved in June 2018) have been subsequently treated in a .txt file. Redundant texts, i.e., those displaying the same *EDCS* code, have been deleted by a C program. Therefore, it was verified that within this .txt file, there were as many *EDCS* codes as the texts recorded within *EDCS*. At this point, search matrices were elaborated by taking into consideration both the possible variants of a given phenomenon and the potential combinations these variants might have been signaled through by *EDCS* criteria. In order to retrieve data from this .txt file, a C++ program was designed the matrices subsequently underwent: this program extracts the word containing the search criterion and automatically associate in a spreadsheet this word to the metadata indicated on *EDCS*, i.e., edition of the text, *EDCS* code, date, province, locality, the text wherein that form is reported, text type, *virorum/feminarum distributio*, and writing material. As for consonant gemination the matrix is the formula <xx>, <x{x}> and <{x}x> (where <x> indicates whatever consonantal segment, or rather grapheme).

As for vowel prosthesis and /kt/ treatment, the elaboration of search matrices turned out particularly difficult and, at the same time, elementary. The spelling <t>, which is particularly relevant for the present study, can be detected through <(c)t>, but in many cases, as previously

mentioned, we have but <t>. Moreover, /kt/ shows different spellings within the Latin documentation, such as <tt>, <pt>, <cit> and, more rarely, <ht>. For this reason, we decided to broaden the search to all the occurrences of <t>, which is the lowest common multiple. As for vowel prosthesis, the above presented formula is too simplistic, and does not permit to collect other relevant forms, i.e., those with double <ss> as well as other related phenomena, such as VsC > sC aphaeresis and *ins*C > *is*C (> sC > VsC) and *ex*(s)C > *es*C (> sC > VsC). For this reason, the research criteria were broadened to <s> and <x>, which represent the lowest common multiple. The imaginable amount of data resulting from searching just single letters was managed thanks to a series of macros and quite mechanical procedures described below. The following operations concern all the examined phenomena – with different degrees of complexity according to the amount of the extracted data – and are meant to build a template suitable for data analysis.

(1) Next to the first column, labeled “token,” containing the extracted form, a further provisional column was added, labeled “cleaned token,” wherein a macro fills in the token without the several diacritics used by *EDCS*. The column “cleaned token” was sorted alphabetically, and all the not-relevant forms were deleted manually. This first step allowed us to lessen the extracted forms considerably. Forms such as *FATVM* were not deleted in the first instance, given that it might represent a variant of *factum*. As for prosthesis and related phenomena and /kt/ spelling variants, given the loose search criteria, we decided to keep the respective classical forms to obtain data about spelling variation.

(2) Another macro deletes the forms fully supplemented by the editor, i.e., those preceded and followed by square brackets into a broader portion of texts that could not have been detected by extracting the single word.

(3) A more accurate manual filtering was carried out. All those forms which were not relevant to the examined phenomena, and those forms wherein the examined spellings were within loose abbreviations (i.e., within round brackets) or in a supplemented portion of the word (i.e., within square brackets), were deleted. As for consonant gemination, all those forms with “etymological” and “morphological” gemination were deleted (for further discussion, see CHAPTER 3).

(4) Another macro deleted all the redundant forms. This procedure was essential for the spreadsheets containing data about vowel prostheses and /kt/ spelling variants. There might be the case whereby the same word within the exacted text has been elicited more than once. For example, a form such as *ISPIRITVS* has been extracted twice because it contains two <s>. However, within a given text, there might also be a case that a relevant form is actually reported more than once. This macro individuates the identical rows, i.e., those wherein the cells under the column “token” and

the column “*EDCS* code” are identical. Such rows are automatically deleted in case that token is reported within the text only once. By employing a basic Excel formula, identical rows that were not deleted were highlighted (provided that the column containing the *EDCS* code was sorted alphabetically). A careful inspection ascertained whether identical tokens within the same texts were actually reported as often as their occurrence within the text. If not (that is in the case whereby a token was actually reported more than once but contained the search criteria more than once), redundant forms were deleted manually.

(5) Tokens were leveled out according to diplomatic criteria. Next to the column “token,” a column “classical form” was added, wherein the respective classical forms were filled in (or, such as vowel prosthesis and /kt/ outcomes, the same form, if not deviating from Classical Latin). This procedure was carried out manually and allowed to evaluate those dubious forms that were not deleted at preliminary scrutiny.

(6) Next to the column “classical form”, the columns “type” and “POS” were added. The lemmatization and the indication of the part of speech were carried out manually. However, by sorting the column “type alphabetically,” this procedure was relatively rapid.

(7) Information about the date, if not reported on *EDCS*, was supplemented by crosschecking *TM* Texts. Next to the column “date,” a further column, “century,” was added, relevant to gathering data according to synchronic cuts.

(8) In addition to the columns “*provincia/regio*” and “locality,” another column, “coordinates,” was added. Data about coordinates were automatically filled by employing a macro program wherein data from *TM* places had been inserted. A manual entry was carried out for those localities whose coordinates are not reported within *TM* places.

(10) In case text type is not reported within *EDCS*, a manual entry will be carried out by crosschecking other databases.

In summary, each spreadsheet is provided with a set of general information:

column A: token

column B: classical form

column C: type

column D: POS

column E: language

column F: text

column G: *publication*

column H: EDCS code
column I: date
column J: century
column K: *regio / provincia*
column L: locality
column M: coordinates
column N: text type
column O: *virorum / feminarum distributio*
column P: writing material

At this point, each spreadsheet was further implemented according to linguistic information:

As for vowel prothesis, data have been classified according to the typology of the phenomenon (column Q), i.e., (1) #sC (classical form), (2) #sC > #VsC; (3) #insC (classical form); (4) #insC > #isC; (5) #insC > #isC > #sC; (6) #isC > #isC > #sC > #VsC; (7) #ex(s)C (classical form); (8) #ex(s)C > #esC; (9) #ex(s)C > #esC > #sC; (10) #ex(s)C > #esC > #sC > #VsC; (11) #VsC (classical form); (12) #VsC > #sC; (13) #VsC > #sC > #VsC. Obviously, assigning such labels required a careful evaluation, as we shall see, because in many cases, especially as far as onomastics is concerned, the underlying “classical” form is not transparent. Data falling into (2), (6), (10), (13) categories have been further classified according to the graphicization of vowel prothesis (e.g. <e>, <i>, column R), and segmental context (i.e., segments preceding and following vowel prothesis, columns S and T).

As for the *geminatio consonantium*, different spreadsheets for each segment have been created. Linguistic information concerns the segmental context, i.e., intervocalic or before /j/, /r/, preconsonantal and post-consonantal (column Q). As for intervocalic gemination, the etymological quantity of the vowel followed by the geminated consonant was specified (column R).

As for /kt/ treatment, a classification according to the different variants was carried out (column Q), i.e., (1) <ct> (classical form), (2) <nct> (classical form), (3) ct > t, (4) ct > tt, (5) ct > pt, (6) ct > cit, (7) ct > ht, (8) nct > nt, (9) nct > ct, (10) nct > t.

Let us now return to papyri.info. Unlike *EDCS*, the text is not amended, and, in the case of aberrant spellings, the classical form is reported in the apparatus. Therefore, typing a given set of characters allows us to detect all the potential forms showing a given feature. Moreover, thanks to the diacritic #, it is possible to detect word-initial phenomena (this is particularly relevant to collecting forms with vowel prothesis). Nevertheless, papyri.info poses some specific issues. First,

it is not possible to search with a string showing fewer than three characters. Second, it is not possible to directly extract the text. Therefore, specific search matrices of three characters have been elaborated, potentially containing all the possible variants of the examined phenomena, in the light of the evidence provided by column Q of each spreadsheet. The results were scrutinized one by one (the interface of papyri.info makes this procedure easier than *EDCS*). Therefore, relevant forms were filled in on each spreadsheet and therefore classified according to the previously described criteria.

Finally, also Greek papyri and inscriptions have been searched. As for Greek papyri, papyri.info was searched, according to the above methodology. As for Greek inscriptions, *PHI* Greek Inscriptions were searched. Like papyri.info, the # diacritic allows collecting word-initial letters. Unlike papyri.info, however, the search is not limited to a minimum of three characters. Also, in this case, a series of matrices containing the possible variants were elaborated. These matrices have taken into account all the possible graphemic realizations of /i/. Relevant forms, notably Latin loanwords and Latin personal names were filled in manually on the above-described spreadsheets.

Once all the phenomena within the documentation available on *EDCS*, papyri.info, and partially, *PHI* Greek Inscriptions have been collected, redundant forms (i.e., those recorded more than once within *EDCS* or reported in texts recorded both on *EDCS* and papyri.info) have been deleted.

Eventually, the recorded non-classical forms have been verified by checking the original publications or the photos and drawings available on other databases. Therefore, a further criterion of classification, distinguishing lost inscriptions and those that are still examinable, was added.

This data collection system and classification, albeit with a slight margin for error, allowed a richer collection of forms if compared to previous analyses. A more complete sight will be available only once the linguistic annotation projects of the entire epigraphic and papyrological corpora, carried out by *CLaSSES* and *LLDB*, will be completed. In the meantime, this methodology might certainly represent a precious tool for laying the foundations of detailed analyses of the investigated phenomena. It should be stressed that this entire procedure took only 4 months, despite dealing with a large amount of data.

1.6 Appendix

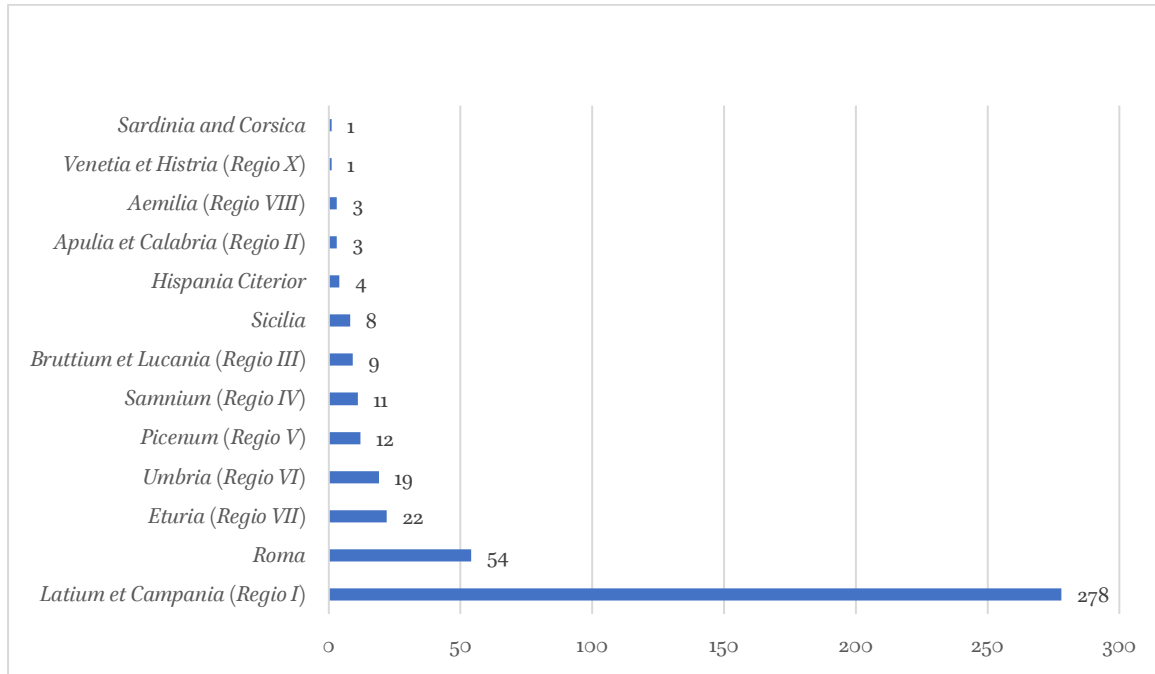


CHART 1.5 Number of inscriptions for each area (BC 720-300)

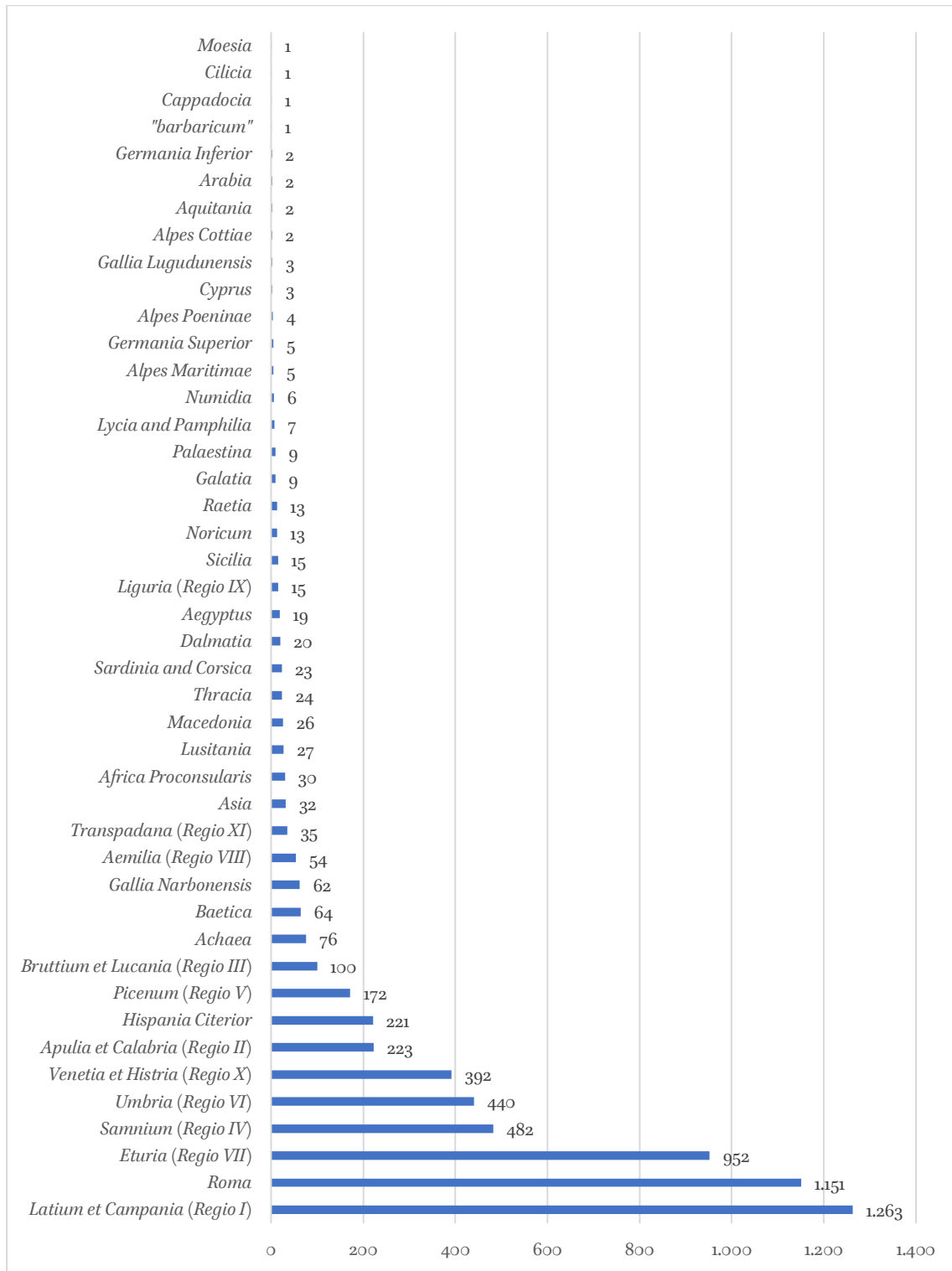


CHART 1.6 Number of inscriptions for each area (BC 299-1)

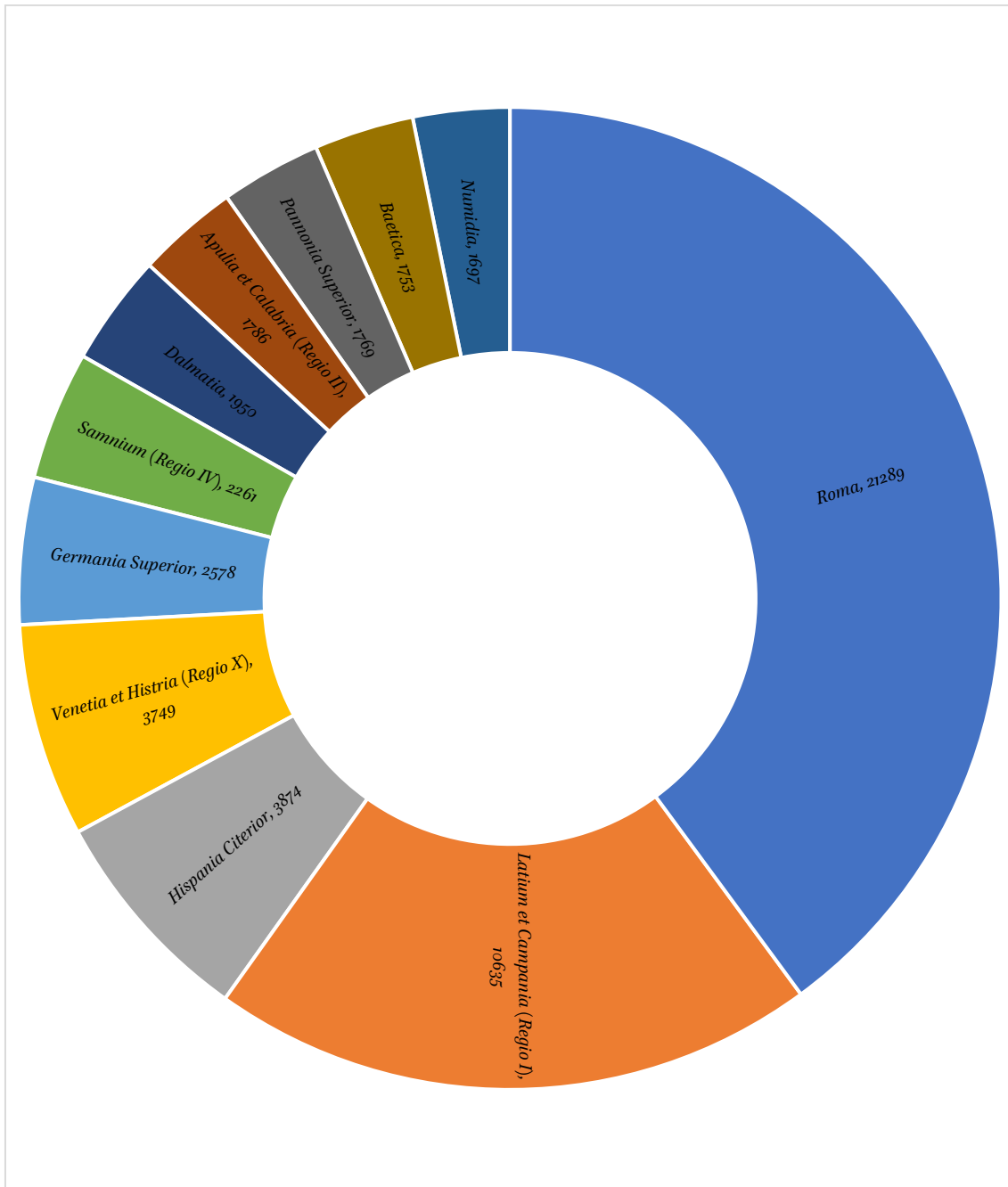


CHART 1.7 Number of inscriptions for the areas showing the highest documentary density (AD 1-200)

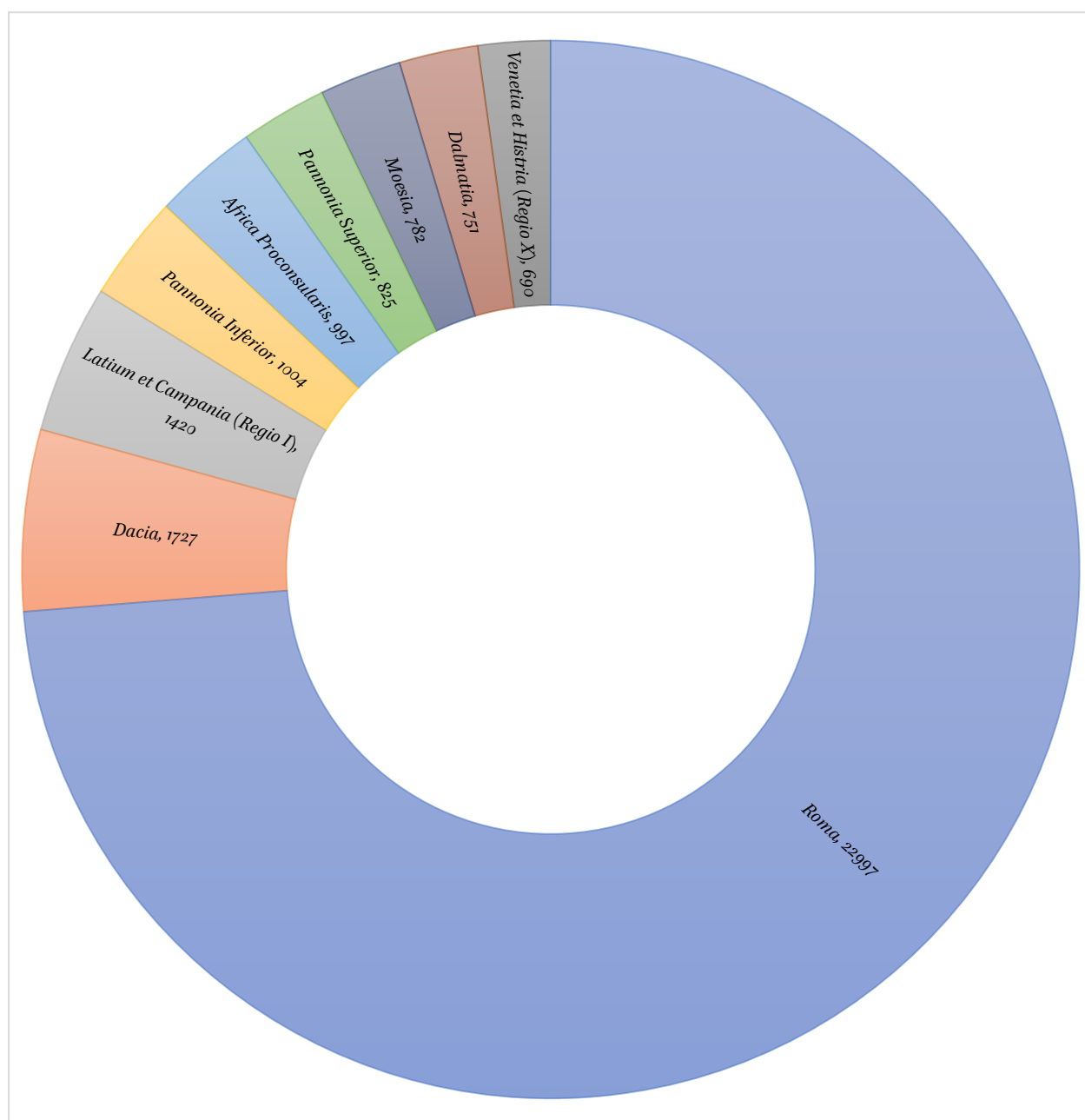


CHART 1.8 Number of inscriptions for the areas showing the highest documentary density (AD 201-400)

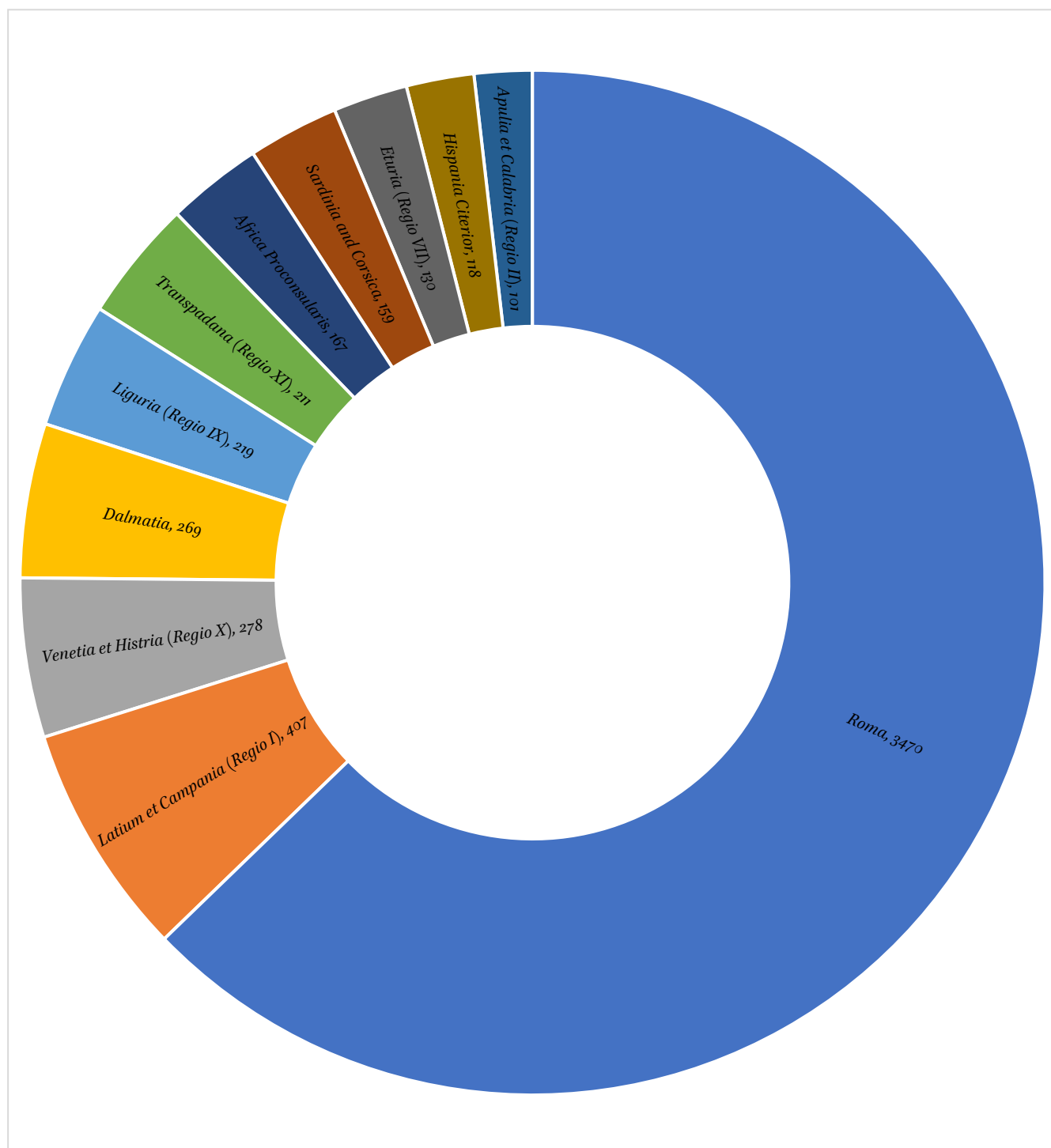


CHART 1.9 Number of inscriptions for the areas showing the highest documentary density (AD 401-700)

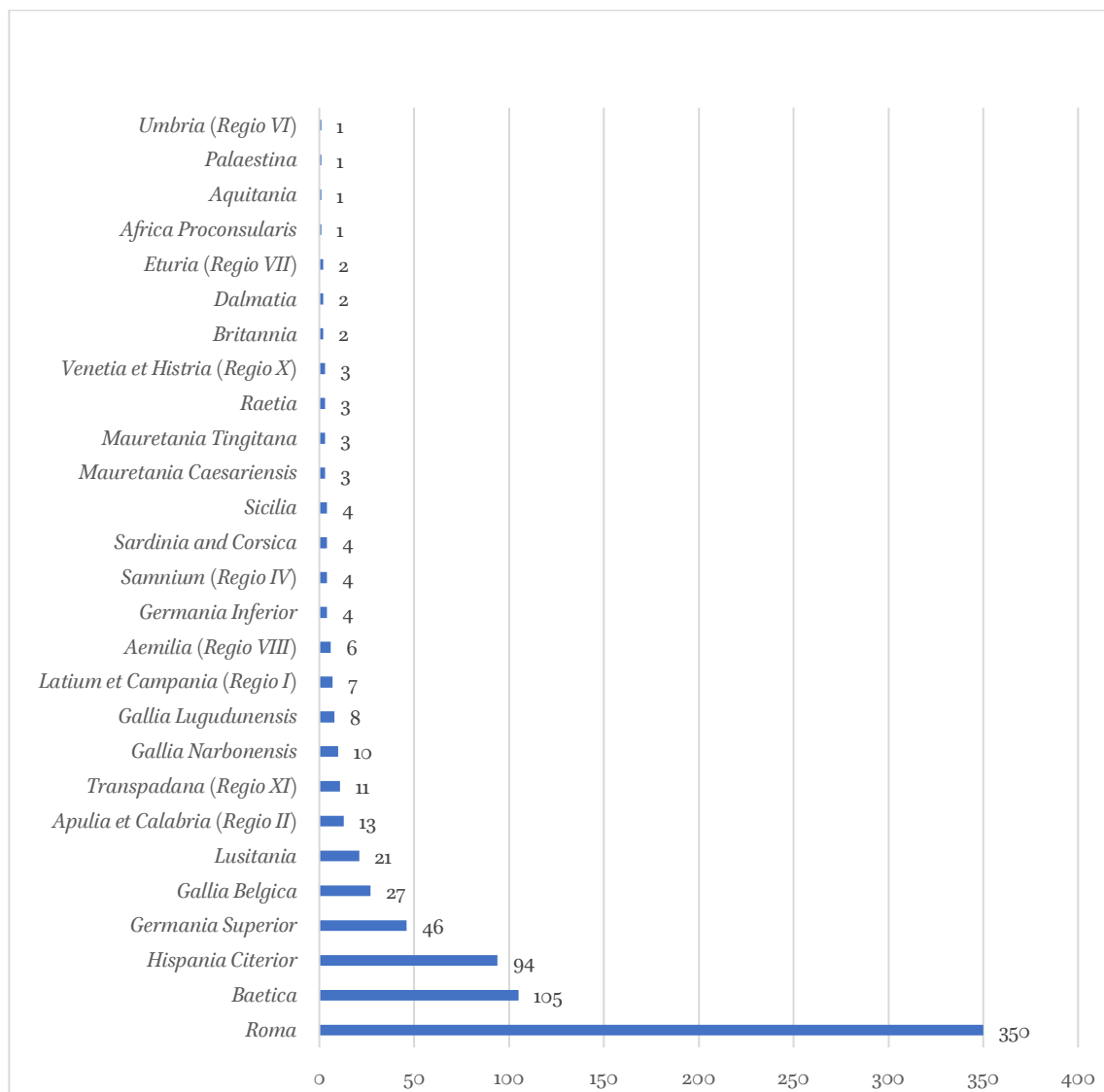


CHART 1.10 *Number of inscriptions for each area (AD 700-899)*

Chapter 2

Vowel prosthesis before sC in Substandard Latin and Koine Greek

This chapter aims to propose a synoptic account of vowel prosthesis in word-initial sC in Substandard Latin and Koine Greek. After having provided a general account on vowel prosthesis before sC in Romance (§ 2.1) and theoretical issues on the syllabification of sC (§ 2.2), we shall present the *status quaestionis* and the points to be addressed (§ 2.3). A new scrutiny of the attestations in documentary texts suggests that the phenomenon was widespread all around the Roman Empire, both in Substandard Latin and Koine Greek (§ 2.4). Different syntopic analyses have been subsequently provided to investigate both external and internal factors, namely to which level of variation this phenomenon is to be attributed in a diasystematic perspective and the phonotactic and prosodic contexts in which vowel prosthesis emerges (§ 2.5). Finally, the diachronic path is taken into account (§ 2.6) by focusing on the following topics: i. the relation between polygenesis and monogenesis, continuity and discontinuity; ii. Greek/Latin interference, in the attempt to establish which language is responsible for triggering the phenomenon; iii. phonological drifts in Substandard Latin, which determined the creation of a word-initial pattern (i.e., the deletion of initial *ex-*, the simplification of *#in(s)C* into *#isC*, and the aphaeresis of *#VsC* into *#sC*).

2.1 Vowel prosthesis in Romance

As is known, the prosthetic vowel before word-initial sC in the current Romance framework is present, with varying degrees of productivity, in the Ibero-Romance area, in Sardo-Romance (Logudorese), in Gallo-Romance and, partially, in some Tuscan varieties. This areal macro-distinction has long been known to the tradition of Romance studies (cf. Schuchardt 1867, p. 349; Wartburg 1936; 1950), and a recent diachronic, documentarily detailed, picture is provided by Sampson (2010).

This isogloss, as has been noted, reflects, except in the case of Tuscan and literary Italian, the areal distribution of final consonant preservation: because of the frequency of occurrence of words beginning with sC in post-consonantal position, the prosthesis would have thus been generalized to

provide syllabic support for the fricative (for theoretical considerations cf. § 2.2) (cf. Politzer 1959, Tekavčić 1974, p. 231; Hall 1964).

The varieties in which the phenomenon is still documented can be distinguished according to the following criteria: (1) prosthetic vowel after a consonant (remnants of literary Italian and Tuscan varieties); (2) generalized prosthetic vowel, either after a consonant or after vowel (Lugodorese Sardinian and Ibero-Romance, with some exceptions, e.g., Portuguese); (3) generalized prosthetic vowel, but now lexicalized and no longer productive (French).

- **Tuscan and Italian:** Latin documents of the Lombard period (Schiaparelli 1929-33) show a high frequency of vowel prosthesis (cf. Sampson 2010, p. 81 FIGURE 4.6); in early vulgar texts, such as the *Conto navale pisano* (1100 ca. AD) (Castellani 1976, pp. 123–48, text 128–30) vowel prosthesis before word-initial sC is almost systematic. In the subsequent and established literary tradition of Italian vowel prosthesis was recommended only in post-consonantal environments, In the subsequent and established literary tradition of Italian vowel prosthesis was recommended only in post-consonantal environments, and Alessandro Manzoni systematically applies this rule in *I Promessi Sposi*. The relation with consonant-ending position can be seen in the distribution of the allomorphs of the articles: word-initial sC can be only preceded by vowel-ending articles, i.e., *lo* (DEF.MAS.SG.), *gli* (DEF.MAS.PL.) and *uno* (INDEF.MAS.SG.), with the vowel providing syllabic support for initial /s/ (cf. Marotta 1993). At present, this phenomenon has wholly disappeared, except in the crystallized phrases *per iscritto* ‘in writing’ and *in ispecie* ‘especially’ (Sabatini 1985, p. 157; De Mauro 1993, pp. 410-411). However, it is still widespread in some Tuscan varieties (cf. Rohlfs 1966 § 187), especially among uneducated people (e.g. [uniz’mette] ‘he isn’t stopping’, cf. Sampson 2010, p. 95), and it is productive with loanwords (e.g., *ho visto un film in istreaming* ‘I watched a streaming movie’).
- **Sardinian:** in Logudorese Sardinian, as is shown in TABLE 2.1, the process is still productive, whereas it is absent in Campidanese:

Italian	Campidanese	Logudorese
<i>scuola</i>	/skola/	/iskola/
<i>scala</i>	/skala/	/iskala/
<i>andar male</i>	/zballai/	/izballare/
<i>sbrigare</i>	/zbrigai/	/izbrigare/
<i>schiena</i>	/skina/	/iskina/
<i>scrivere</i>	/skriri/	/iskriere/

TABLE 2.4 Comparison between Campidanese and Logudorese Sardinian in the treatment of word-initial sC, from Blasco Ferrer (1984, p. 210, § 45.1.2)

It is generally agreed among scholars that vowel prosthesis was presumably widespread in the Campidanese dialect as well and that it probably regressed due to the influence of Italian (cf. Meyer-Lübke 1902, p. 21; Wagner 1907, p. 23; 1941 § 27; Viridis 1978, pp. 38-39; Blasco Ferrer 1984, p. 210, § 45.1.2). The spread of this phenomenon in all the Sardinian area during the Middle-Ages would be evidenced by the earliest vernacular texts (11th-14th c. AD), cf. Blasco Ferrer (1995, pp. 252-259). More recently, however, Blasco Ferrer (2002, p. 136) had hypothesized that in Campidanese the phenomenon would have been consistently less regular than in Logudorese: this hypothesis would be supported by the outcomes of Latin *scio*, which in Logudorese Sardinian is [ˈisko] (< ISCĬO, with the drop of [j] < [i] due to accent retraction), whereas in Campidanese Sardinian is [ˈʃiu] (< SCĬO). It cannot be ruled out, as Paulis (1984, pp. I-CVIII) and Lupinu (2003) point out, that the vowel prosthesis isogloss should be related to the plural definite article isogloss, which in Logudorese is consonant-ending (i.e., *sas, sos*; e.g. *sas iskalas* ‘the stairs’), whereas in Campidanese is vowel-ending due to paragoge (e.g., *isi skalas* ‘the stairs’).

- **Ibero-Romance:** in the Ibero-Romance area the prosthetic vowel is generalized from the 13th century AD at the latest, and affects not only Latin inherited lexicon (e.g., Lt. *status*, Sp. *estado* vs. It. *stato*) but also newly introduced loanwords (e.g., Sp. *estress* ‘stress’) (cf. Nespor & Bafille 2008, pp. 69-72 and Whitley 2002, pp. 42-43). In Castilian vowel prosthesis is realized as [e], whereas in Catalan as [ə] in the eastern variety and [e] and [a] in the western one (e.g., Cat. *escriure* ‘to write’, [əsˈkriwra], [esˈkriwre], [asˈkriwre], cf. Wheeler 2005, pp. 250-251). In Portuguese, instead, vowel prosthesis is generally higher (e.g., Ptg. *espaço*, ‘space’ [iʃˈpasu]; *estare*, ‘to stay’ [iʃˈtar], cf. Mateus & D’Andrade 2000). However, Portuguese is recently experiencing a regression of this phenomenon, especially among younger generations, wherein forms such as *espaço* ‘space’, *estare* ‘to stay’, *escutar* ‘to listen’ are often pronounced without the prosthesis, due to a general weakening of unstressed vowels (cf. Mateus & D’Andrade 2000, pp. 44-45 and Sampson 2010, p. 12)
- **Gallo-Romance:** Until approximately the 12th century AD, the prosthetic vowel was a generalized process in the Gallo-Romance domain (except for the area of Northern Italy). Subsequently, for reasons that are much debated (cf. Sampson 2010, pp. 115ff), the process regressed. Currently, the prosthetic vowel is productive only in some Occitan varieties, while in French it characterizes only Latin inherited lexicon as lexicalized element (e.g., Lt. *stella*, Fr. *étoile*), and is not productive with recent loanwords (e.g., *stress* ‘stress’, *Scrabble* ‘Scrabble’, cf. Sampson 2010, pp. 13).

2.2 Theoretical issues

The prosthetic vowel before word-initial sC has drawn the attention of theoretical frameworks that place syllable structure at the center of the description of phonological processes.

According to non-linear phonology (cf. Goldsmith 1990, p. 109 ff.; Kenstowicz 1994, p. 253 ff.), the syllable is represented as a structure hierarchically organized around a peak of sonority, represented by the Nucleus. To the left of the Nucleus, there may be one or more segments that constitute the Onset, and to the right of it one or more segments that constitute the Coda, with which the Nucleus forms the Rhyme (cf. FIGURE 2.1).

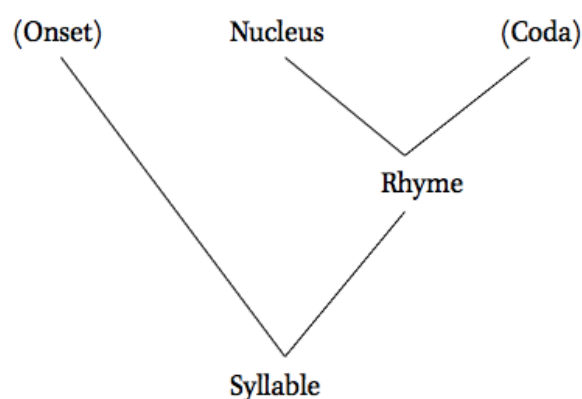


FIGURE 2.1 *Representation of the syllable according to the principles of x-bar syntax*

From a typological and acquisitional point of view, the prototypical and unmarked syllable has a CV structure (Nespor & Bafle 2008, pp. 116-117)⁷² and, within the framework of Optimality Theory, this is reflected in the identification of a basic Onset constraint, which favors simple Onsets (cf. McCarthy 2004, pp. 31-8).

Based on the hierarchy of sonority (i.e., vowels > glides > liquids > nasals > fricatives > stops) which has been part of the phonological theory for more than a century (cf. Sievers 1881; Jespersen 1904; Saussure 1916; cf. the historical account by Ohala 1990),⁷³ several theoretical frameworks have identified principles that would govern the arrangement of the segments around the Nucleus, such

⁷² Ingram's (1978) study showed that, up to the age of 15 months, the percentage of CV syllables is 89% in monosyllabic words and 87% in dissyllabic words. Crosslinguistically, all human languages have syllables with a CV structure, whereas not all languages have syllables containing codas or complex onsets (the 10-15% of languages do not admit sequences of two or more consonants, cf. Bell & Hooper 1978)

⁷³ It should be pointed out, however, that the phonetic correlate of sonority is not well understood. For this issue, cf. Kenstowicz (1994, p. 254).

as the Sonority Sequencing Generalization/Principle (Blevins 1995, p. 210) or the Preference Laws (Vennemann 1988). Basically, it is pointed out that languages show a tendency to arrange the segments around the Nucleus according to a principle of increasing sonority in the Onset (or Head in Vennemann's terminology) and decreasing sonority in the Coda and, furthermore, and to prefer syllabic structures in which the Onset / Head is a segment placed high in the consonantal strength hierarchy (the head is the more favored, the closer to one the number of segments it contains, the greater the consonantal strength is, and the more abruptly the strength of the segments constituting it decreases, cf. Vennemann 1988, pp. 13-14).

However, many languages admit deviations from the optimal syllable and may have more complex onsets, generally of the type C₁C₂ (usually *muta cum liquida* or sC) and C₁C₂C₃ (as in the case of /s/ + *muta cum liquida* clusters). In case of a complex sC_[-cont] onset, which does not follow a principle of increasing sonority, some theoretical frameworks, such as Government Phonology, consider the sibilant heterosyllabic, i.e., the coda of an underlying syllable with an empty Nucleus (cf. Kaye 1992), of which the prosthetic vowel would thus be the realization at the superficial level (until it becomes lexicalized and part of the underlying representation in those varieties in which the process has long been generalized).

Interestingly, however, the syllabification of the sC group is exempt from sharp categorizations (cf. Bertinetto 2004). If the emergence of the prosthetic vowel and some phenomena of failure to diphthongization (e.g., Lt. *vēs.tis* > It. *veste*) is evidence of the tendency to the heterosyllabification of sC in the varieties of Spoken Latin that gave rise to the Romance languages, nevertheless classical metrics highlight the particular cohesion of the sC group, which is tautosyllabic and does not make position (cf. Weiss 2009, p. 70). This particular cohesion can be ascribed to the special-status of /s/ in Latin morphophonology and a morpho-lexical constraint tending to preserve the sC sequence (cf. Marotta 1999; Sampson 2010, pp. 71-72). This strong cohesion of the sC group is further evidenced by the fact that, among the possible phonological processes (1-3) aiming at the optimalization of this (coda-)onset cluster, only the insertion via prosthesis (3) took place:⁷⁴

- (1) Deletion: #C₁C₂V > #C₁V / #C₂V, e.g. CL *sponsus*, VL *ponsus*
- (2) Anaptyxis: #C₁C₂V > #C₁VC₂V, e.g. CL *spiritus*, VL *sipiritus*
- (3) Prosthesis: #C₁C₂V > #VC₁C₂V, e.g. CL *spes*, VL *ispes*

⁷⁴We anticipate some data from Latin, which will be discussed in § 2.4. We refer to variants deviating from Classical Latin (CL) as Vulgar Latin (VL) for purely expositional reasons.

In solution (1) there is a simplification, with deletion of an element of the cluster; in the solutions (2) and (3), a new vocalic nucleus⁷⁵ is created to provide syllabic support, either on the right (thus becoming /s/ the onset) or on the left (thus becoming /s/ the coda). Solution (1), as we shall see, is sporadic; solution (2) is attested only once, while solution (3) is the one that gradually takes place in the process of re-syllabification from Latin to Romance. This aspect accounts for two phenomena: on the one hand, the particular relation that this process has with phonosyntax, as is evidenced by the productivity of the phenomenon in post-consonantal environments in literary Italian as well as by the areal isogloss linking the presence of the prosthetic vowel to the maintenance of word-final consonants (cf. Kiss 1971; Lausberg 1971; Tekavčić 1974); on the other hand, as previously mentioned, the particular cohesion that the sC cluster presents, due to constraints of morpho-lexical order, aiming at maintaining a formal identity in sC-beginning roots. Moreover, the phenomenon (3) is further favored by the segmental nature of /s/, which, both from an acoustic and an articulatory point of view, is more similar to the class of the sonorants than to the obstruents, and, under particular conditions, can become syllabic (Marotta 1999, p. 300).

2.3 Vowel prosthesis in Latin: *status quaestionis*

Vowel prosthesis before word-initial sC in Latin has drawn the attention of many scholars since the in-depth analysis by Schuchardt (1866-1868 II, pp. 337-365). The present section aims at focusing on the major points which previous analyses have underlined:

- It is widely agreed that vowel prosthesis was particularly widespread in African Latin (cf., e.g., Schuchardt 1866-1868, II: 337-365; Acquati 1971: 182-183; Kiss 1971, pp. 91-93; Durante 1981, pp. 37-38; Lorenzetti & Schirru 2010). This fact would suggest that this isogloss might have been shared by submerged Afro-Romance and Sardo-Romance, together with other shared characteristics, such as vowel system and the preservation of /k/ before front vowels (cf. Fanciullo 1992; Lupinu 2000, 2003; Lorenzetti & Schirru 2010, 2013). In fact, Afro-Romance relics do show forms with vowel prosthesis before word-initial sC (cf. Wagner 1936). Nevertheless, such Afro-Romance relics do not provide cogent evidence of vowel prosthesis since, as we shall see, Semitic as well as Berber languages that mediated these forms are characterized by vowel prosthesis before word-initial sC as well. Furthermore, the hypothesis that vowel prosthesis was typical of African Latin is based only on

⁷⁵ In either case, it is to be expected that the timbre of the initially indistinct epenthetic vowel will coarticulatorily specify itself according to the phonetic environment (cf. Kenstowicz 2003), i.e. [e, i, i].

absolute data given that Roman provinces of Africa show a high epigraphic density, a higher number of attestations is not surprising in itself.

- Inscriptional evidence displays that vowel prosthesis was widespread also in Christian epigraphs from Rome (cf. e.g., Schuchardt 1866-1868, II, pp. 337-365; Prinz 1938; Väänänen 1966, p. 48). Nevertheless, it is not possible to attribute vowel prosthesis to the Latin of Rome as such. Indeed, Rome, especially during the Imperial period, was characterized by intense migratory movements and held many alloglot communities (cf. Banfi 1991). Therefore, the evaluation of this phenomenon in Rome should be based not only on quantitative data, but should take into consideration also qualitative cues, such as onomastics and prosopography (cf. Lorenzetti & Schirru 2010, p. 305).
- The first attestation of vowel prosthesis in Latin is commonly acknowledged as ISMVRNA (*CIL* IV 7221), from Pompeii (cf. e.g., Väänänen 1966, p. 48; Sampson 2010, p. 56), dating back to the 1st century AD (79 AD at the latest). Since vowel prosthesis affects, in this case, a particular cluster, i.e. [zm], which did not exist in Latin during the historical period, it is not immediate to individuate a continuity between this type of vowel prosthesis and those affecting properly Latin sC clusters (e.g. *scio* > *iscio*).
- Latin inscriptions from the Iberian Peninsula and Gallia Transalpina scarcely attest vowel prosthesis (cf. Prinz 1938; Herman 1990, p. 159; 2000, p. 125; Adams 2007, pp. 672-673). This evidence raises the issue of the discontinuity between Latin and Romance traditions. However, it is not possible to deduce any definitive conclusion yet, since an updated scrutiny of all Latin non-literary texts has not been carried out so far.
- The substrate hypothesis accounting for the origin of vowel prosthesis. Schuchardt (1866-1868 II, pp. 337-365) attributed this phenomenon either to an African local (*einheimisch*) dialect or to the arrival from Asia Minor of communities which would have spoken a variety of Koine Greek characterized by the presence of vowel prosthesis (cf. below). The Greek influence hypothesis is also assumed by Prinz (1938) and Pisani (1940).
- The above point introduces the issue of vowel prosthesis before word-initial sC in Koine Greek. Koine Greek as evidenced by papyri and inscriptions from Egypt, Asia Minor and Syria shows attestations of vowel prosthesis before sC (cf. Gignac 1976, p. 312 for Egypt; and Bubenik 1989, pp. 234-235 and 242 for Asia Minor and Syria). As for Asia Minor and Syrian Koine Greek, it has been assumed that local languages could have triggered the diffusion of vowel prosthesis, i.e., Phrygian as far as Asia Minor

Koine Greek is concerned (cf. Thumb 1901, p. 145; Brixhe 2002, 2010)⁷⁶ and Aramaic as far as Syrian Koine Greek is concerned (cf. Bubenik 1989, pp. 234-235; Banfi 1996, p. 20; Mancini 2008, p. 296). Nevertheless, the substrate hypothesis, which is assumed only for two of the three aforementioned varieties of Koine Greek, bears some flaws, both from a logic and a factual point of view. Given that three varieties of Koine Greek show attestations of vowel prothesis, assuming that this phenomenon is a common and widespread feature of Koine Greek, independent from language contact, would appear the most economical guesswork. Furthermore, if, on the one hand, the Semitic languages tend to vowel insertion before word-initial sC, and therefore Aramaic interference cannot be ruled out *a priori*, Phrygian evidence, on the other hand, is rather weak, and no testimonies are found of a similar phenomenon in this *Restsprache* (cf. Dressler 1965). Ultimately, since attestations of vowel prothesis in Koine Greek concern mainly Latin loanwords (cf. Consani 1999), a wider re-examination of the matter is needed, by considering together both Latin and Koine Greek documentation.

- Vowel insertion before word-initial sC is to be put in relation to other phonological processes, i.e. aphaeresis in word-initial VsC (e.g. *Hispania* > *Spania*), [ks] > [ss] assimilation (and following aphaeresis) in words beginning with ex(s)C (e.g. *expectare* > *espectare* > *spectare*), [ins] > [is] nasal drop (and following aphaeresis) in words beginning with in,sC (e.g. *instrumentum* > *istrumentum* > *strumentum*). In all these cases – quite widespread also in manuscript tradition – the resulted word is reanalyzed as beginning with sC, and vowel prothesis (sometimes by means of inverse spellings) may be later inserted (cf. Ernout 1957; Väänänen 1966, p. 48; Lausberg 1971, p. 295-297; Stotz 1996, pp. 107-108; Sampson 2010, pp. 57-58; Adams 2013, p. 464; 2016 pp. 277, 360-365).
- Tendencies to the re-syllabification of word-initial sC are evidenced not only by direct sources, which are addressed hereto, but also by the manuscript tradition. In the *Mulomedicina Chironis* (4th c. AD) we find *estercus*; in some manuscripts of the *Itala* we read *istare*; in the *Chronicarum Libri IV* (7th-8th c. AD) we find instances like *espontane*, *ad esclavos*. Other examples are reported by Schuchardt (1866-1868, II, pp. 337-365). However, there is no mention of this phenomenon in the grammarians' sources, not even in the *Appendix Probi*, which does present forms with initial sC. The only exception, as we shall see, is the late Isidore. However, according to Acquati (1971), the presence of the prosthetic vowel would be indicated by the distribution of the prepositions *ab* and *a* in the texts of African authors such as Apuleius, Cyprian, and St. Augustine, since before word-initial sC there would always be *ab*, while before all other consonants there would only be *a*. Another clue, albeit

⁷⁶ Bubenik (1989, p. 242), more prudently, states that vowel prothesis in Asia Minor Koine Greek was a «regional peculiarity of the Asia Minor Koinè [...] a feature of the provincial substandard of the Hellenistic Koinè spoken by the middle and low classes in several regions of Asia Minor (most notably Phrygia)».

weak, reported by Leumann (1977, pp. 104-105) is the identification, suggested by a passage in Pliny the Elder (*nat.hist.* 12,7), between the toponym *Hispania* 'Spain' and the Greek adjective *σπάνιος*, *σπανία* ('rare'), occurring in the Theophrastus' section from which Pliny draws. Nevertheless, as Prinz (1938, p. 104), Stotz (1996, p. 120), and Sampson (2010, p. 57 ft. 8) note, this example cannot be brought to support the insertion of a prosthetic vowel on the Greek base *σπαν-*, since apheresis in the toponym *Hispania* was as common in Koine Greek as it was in Substandard Latin (cf. § 2.4), so it is possible that Pliny simply restored the standard form.

In the following section (§ 2.4) we shall present a general overview of the collected data in both Latin and Greek documentation. Subsequently (§ 2.5), we shall attempt to examine the collected evidence in detail to address the problem of polygenesis or monogenesis of the phenomenon and identify the potential directrices of contact.

2.4 Data analysis: overview

The picture of Latin and Greek with respect to this phenomenon appears composite since the prosthetic vowel is documented in both languages. The questions, therefore, are whether both languages develop this phenomenon independently and then converge or whether one has influenced the other and according to which historical channel.

We will analyze the data proceeding from the general to the particular, by presenting, for each language, general quantitative data. Subsequently (§ 2.5), we will look at the single areas of the empire to investigate the historical dynamics of interpenetration, and how this phenomenon was embedded in the linguistic and historical structures.

2.4.1 General data

Quantitatively, 647 forms with a prosthetic vowel were recorded. Compared to Prinz's (1938, p. 106) count and the data discussed by other scholars, the documentary framework can be updated as follows in TABLE 2.2:

Region	Prinz	<i>Alii</i>	New data	
			Lt.	Gk.
Rome, Latium et Campania	107	37 (Gaeng)	213	-
Northwest Africa	52	17 (Omeltchenko), 33 (Acquati)	200	-
Asia Minor	22	95 (Dressler)	2	114
Iberian peninsula	7	5 (Gaeng)	24	1
Northern Italy and Gallia Cis.	7	-	24	-
Egypt	1	3 (Gignac), 4 (Consani)	9	14
Gallia Trans. and German prov.	5	1 (Gaeng)	11	-
Syria	-	3 (Bubenik, Consani)	3	6
Etruria, Umbria, Picenum	-	-	8	1
Balkans, Pannonia	2	2 (Omeltchenko)	6	-
Southern Italy and Sicily	11	-	3	2
Sardinia	-	4 (Lupinu)	4	-
Uncertain	-	-	2	-
Britannia	-	-	-	-
Total	214	120	509	138

TABLE 2.5 *Quantitative data of the forms with vowel prothesis in Latin and Greek (1st BC - 8th AD)*

TABLE 2.2 data are displayed according to the synoptic data set out in Sampson (2010, p. 60). The item *Alii* concerns specific data collections, namely Acquati (1971) for North Africa inscriptions, Dressler (1965), Gignac (1976) and Consani (1999) for Greek forms, Lupinu (2000) for Sardinian inscriptions, and Gaeng (1968) and Omeltchenko (1977) for Christian inscriptions. For practical purposes, the macro-areal subdivision refers to Sampson's one, with some modifications.⁷⁷ A preliminary examination seems to show a situation that is quite different from the Romance picture. As a matter of fact, the phenomenon is not attested much in the Iberian Peninsula and Gallia Transalpina, as Herman (1990, p. 159) and Adams (2007, pp. 672-673), among others, highlighted. On

⁷⁷ Note that the *prouvinciae* Syria and Sardinia and the *regiones* Etruria, Umbria, Picenum have been added; 'Southern Italy' refers to the *regiones* Samnium, Apulia et Calabria, Lucania et Brutii, whereas Sampson's table includes Campania as well). The last column concerns the number of attestations respectively in Latin (= Lt.) and Greek (= Gk.) texts.

the other hand, in absolute terms, the phenomenon appears scarcely represented in the provinces of Eastern Europe, consistently with the Romance situation.

TABLE 2.3 shows the data presented in TABLE 2.2 by considering the typology of the prosthesis as well as other parallel phenomena:

		PHENOMENON	OCCURRENCES
Lt.	(1)	#sC > #VsC [+ 1 st c. BC]	442
	(2)	#VsC > #sC; #insC > #isC > #sC; #exsC > #esC > #sC [+ 1 st c. AD]	68
	(3)	#VsC > #sC > #VsC [+ 2 nd c. AD]	18
	(4)	#insC > #isC > #sC > #VsC [+ 6 th c. AD]	22
	(5)	#exsC > #esC > #sC > #VsC [+ 4 th c. AD]	27
Gk.	(6)	#sC > #VsC [+ 1 st c. AD]	136
	(7)	#VsC > #sC [+ 1 st c. AD]	25
	(8)	#VsC > #sC > #VsC [+ 3 rd c. AD]	2

TABLE 2.6 General quantitative data about prosthesis and parallel processes in Latin and Greek inscriptions and papyri

The table reports the data as follows. The various types of the listed phenomena are arranged in chronological order from the first attestation, and a distinction between their occurrences in Latin (Lt.) and Greek (Gk.) texts is made.

The phenomena (1)-(3)-(4)-(5) for Latin and the phenomena (6) and (8) for Greek respond to the sum of the data presented in TABLE 2.2. The phenomena (1) and (6) are corresponding to what we may call "primary prosthesis," i.e., vowel insertion before a word etymologically beginning with sC. As can be seen, in Latin texts, the phenomenon is attested from the 1st century BC, while in Greek from the 1st century AD. In later times, insertion may occur by means of reverse spellings following processes (4) and (5), e.g., EXPOPONDIDERVNT (*T. Alb.* 11), EXTEFANIAE (*ICUR*-2-5066). Within this picture, we have also considered anaptyctic forms, mostly prefixed verbs, with vowel insertion between the final consonant of the prefix and the sibilant, e.g., ABISTVLERVNT (*IRP Leon* 243), SUBISCRIPSI (*AE* 1939 88) attested from the 1st c. AD, and, in Greek, συνισπουδάσαντες (*MAMA IV* 85a, 1st-3rd c. AD).

The phenomena (2) and (7), attested in both Latin and Greek documentation since the 1st century AD, consist of aphaeresis in words beginning etymologically with VsC (e.g. SPANIAM, *AE* 1947, 148). The phenomena (3), (4), (5), and (8), which can be grouped into the category of "secondary prosthesis", involve, in cases (3) and (8), the insertion of the prosthesis as a result of a process of

reanalysis affecting words beginning with VsC that have gone through processes (2) and (7), e.g., *Ισκληρία* (*SEG* 6 373), *ISCARIA* (C. Gloss. Biling. 14, l. 11); the phenomena (4) and (5), restricted to the Latin documentation for obvious morphological reasons, imply the insertion of the prosthesis as a result of a process of reanalysis affecting the forms beginning with *ex(s)C* and *insC*: as a consequence, respectively, of the processes of assimilation [ks] > [ss] and of dropping of [n] before sibilant, these words are interpreted as beginning with VsC and thus undergo processes of aphaeresis (cf. *STRUMENTVM AE* 1930, 88; *STEIVS CIL* 6 26834) and insertion, often through reverse spellings, e.g., *HINSTROMENTIS* (*P. Ital.* 2.30), *EXSCVLTPVM* (*CIL* 2 14, 121), *ISCEPTOR* (*RAC*-1996-8544). Evidence within the Latin documentation of the spellings <esC> and <isC> in words beginning with *ex(s)C* and *insC* are quite numerous, but in this review they have not been considered unless there are apparent signs of reanalysis. The phonological erosion leading to the opacification of these prefixed forms proceeds alongside the semantic emptying of such prefixes, particularly *ex*.

In parallel, starting in the 1st century AD, there are forms #sC > #C, e.g., *PONSVS* (*CIL* 13 7550), in which the reorganization of the syllabic onset does not proceed in the direction of strengthening, but of the deletion of C1, according to a process widely documented in L1 language acquisition.

Additionally, it should be stressed that in the data collection, there emerged problematic forms that have posed challenges for lemmatization. Besides the forms <esC> and <isC>, which have been recorded only in case textual elements evidence the reanalysis, there are in fact several cases in which it is not easily possible to discern whether the absence of the prefix *ex* should be interpreted as a case of aphaeresis (i.e. *ex(s)C* > *esC* > *sC*) or as an etymological form: this is the case, for example, of the alternations *spect-* ~ *expect-*. If the context makes it possible, for reasons of meaning, to distinguish the verbal forms, the same cannot be said for the anthroponyms *Spectatus* ~ *Expectatus*.

Another problem is represented by some onomastic types, which have not been taken into account, presenting oscillating spellings. Schuchardt, for example, reports among the forms with prosthetic vowel the onomastic type *I(n)stimenius*, which has several graphic variants (e.g., <*HINSTUMEN(N)IUS*>, <*INSTIMEN(N)IUS*> etc., cf. Solin 1987, p. 521), documented in about twenty inscriptions between the 1st century BC and the early imperial age (cf. Gregori 1987, pp. 90-91). The initial vowel is to be considered in all probability etymological. The name is connected with other gentilicia such as *Insteius*, *Instuleius*, *Instanius* (cf. Schulze 1904, p. 177 ff.). The name *I(n)stacidius*, which we have also excluded from the data analysis, is probably connected to the same base.

We add that another problem of interpretation is posed by some forms of *στήλη* in the Greek documentation, which were possible to differentiate by means of a textual examination. In fact, in Greek epigraphy, since the 5th century BC, it is widespread the formula *εἰς στήλην λιθίνην*, which tends to be crystallized with the concretion of the preposition with the noun, leading to the formation of expressions such as *εἰστήλην λιθίνην*, *ἐστήλην λιθίνην* and *ἰστήλην λιθίνην*. Only by examining the syntagmatic context can it be determined whether *ἐστήλη* / *ἰστήλη* / *εἰστήλη* are a formulaic remnant or a form with a prosthetic vowel.

Occasionally, a prosthetic vowel is documented not before sC, but before sV (e.g. ESOPERA, ESABARIO in *O. Did.* 417, cf. § 2.5.1.1), which is probably a sign of such an intensive pronunciation of /s/ as to become syllabic. In a single case, then, anaptyxis is attested within the sC group, in the form *σιπιριτους* (*Def. Tab.* 270).

An overall examination of the documentation does not reveal any compelling correlations between the emergence of the prosthesis and the post-consonantal position. In fact, net of the forms for which it is not possible to infer the preceding context due to textual lacunae, we see an almost equivalent distribution of the two phonological environments.⁷⁸ As we shall see, only a detailed examination of a few texts of a certain extent will enable us to develop an idea in this regard.

From this preliminary picture, some observations can already be drawn:

- Primary prosthesis appears first in Latin and then in Greek, and is documented more in Latin than in Greek;
- The processes of aphaeresis of words with etymological #VsC, in both languages, are later than those of primary prosthesis by about a century;
- Among the reanalysis processes with following insertion of prosthetic vowel, the first documented is the insertion in #VsC words that had undergone aphaeresis; in later times, however, we can also see the reanalysis in words beginning with *ex(s)C* and *insC*.

⁷⁸By limiting the attestations to those in which the context is such as to allow us to infer the element preceding the prosthetic vowel, we can find 40 forms in sentence-initial position (32 proper nouns / 8 common nouns); 138 forms in post-consonantal context, in which we have also considered the forms with anaptyxis of the type SUBSCRIPSI (51 proper nouns / 10 adjectives / 49 nouns / 28 verbs); 132 forms in post-vocalic context (60 proper nouns; 9 verbs; 62 common nouns and adjectives).

- From a purely quantitative point of view, it seems that prosthesis, also because of parallel phonological developments operating in the Latin language, is more widespread in Latin than in Greek. Let us add, however, that also in Greek there is another phonological process converging towards the creation of the same phonological pattern, whereby the original compounds of εἰς + lexemes beginning with consonant give rise to /isC/, cf. e.g. ἰσχυρῖναι (*SB* 4 7333).
- On the other hand, if Latin metrics show evidence of tautosyllabic treatment of the sC cluster (cf. § 2.2), Classical Greek shows clear indications of a tendency towards the heterosyllabification of this sequence. In word-internal position in fact, a short vowel followed by the sC group can be lengthened (e.g. ὀστέων *orest.* 404, cf. Devine & Stephens 1994, p. 33), and, as far back as 6th century BC inscriptions there is a tendency for preconsonantal /s/ gemination, an indicator of ambisyllabicity (cf. CHAPTER 3). However, syllable division in Latin non-literary texts, e.g., BASILIS/CVS, CRES-CENS, suggests a tendency to the heterosyllabification of this cluster also in Substandard Latin.

2.4.2 Chronological distribution of the collected forms

Let us examine in detail the chronological distribution of the collected forms. CHART 2.1 refers to the absolute data of primary and secondary prosthesis phenomena by comparing the Latin and Greek documentation.

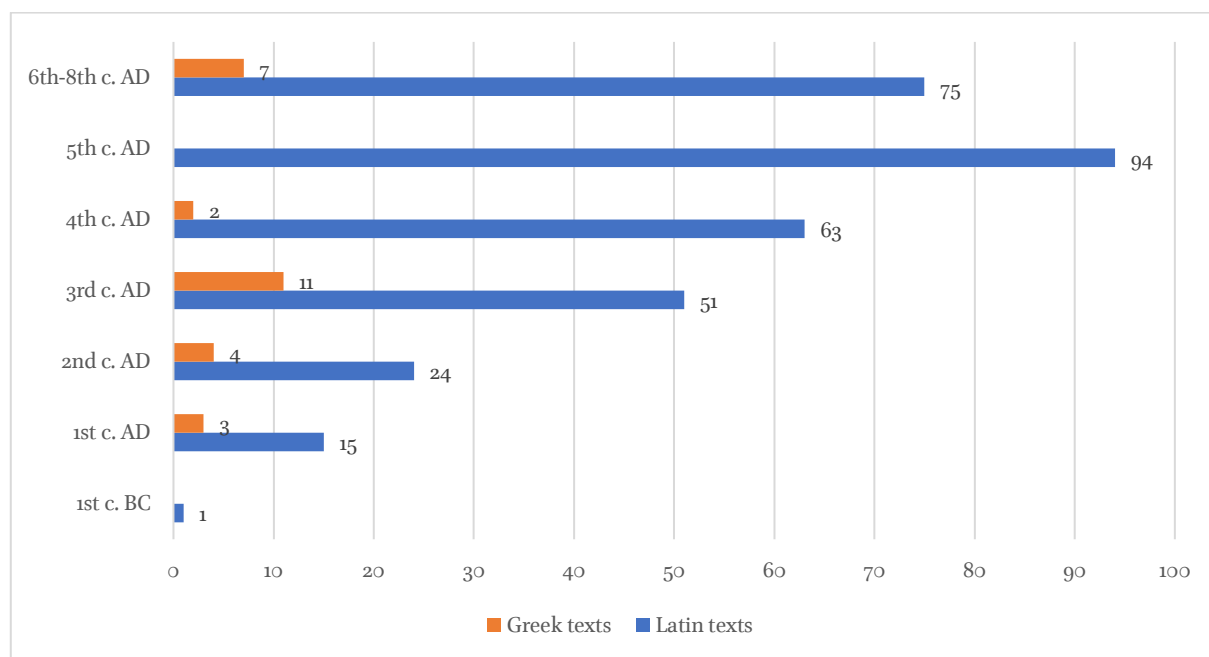


CHART 2.11 Chronological distribution of the collected forms (primary and secondary prosthesis)

The data refer only to datable inscriptions. Loose dates have been circumscribed on the basis of onomastic and textual elements. As far as Latin is concerned, these data clearly show a diachronic trend, which is even more relevant considering that, starting from the 4th century, the documentation tends to decrease. The increase in attestations should be seen in relation to the phenomena of simplification and reanalysis of *ex(s)C* and *insC*, which feed this trend. On the other hand, the lower number of attestations in the 6th-8th century is due to a significant decrease in the records taken into consideration. However, starting from this period, Medieval Latin documents, such as Lombard texts, show the phenomenon diffusely.

The documentation in Greek, on the contrary, is less suitable for this type of analysis since the dating of most of the forms is difficult to establish. Out of the 138 collected forms, in fact, only 27 are documented in datable inscriptions; therefore the evidence of the distribution of the forms does not provide a clear interpretative framework, if not that the phenomenon is all in all sporadic, especially in the light of the limited number of types associated to these occurrences.

2.4.3 Geographical distribution of the collected forms

A preliminary projection of the geographic distribution of the forms was presented in TABLE 2.2. In CHART 2.2 we present the frequency of the spelling of the prosthetic vowel.

The chart refers to the geographic distribution already described in TABLE 2.2. Data on the frequency of the spelling of the prosthetic vowel (both primary and secondary) have been related to the *sC* spelling. Orange-highlighted data refer to Greek epigraphic corpora from Asia Minor and Syria. Relative estimates have not been calculated for the documentation from Egypt and Northern Italy (cf. TABLE 2.2) because in the first case the low number of occurrences in relation to the extensive documentation would not lead to relevant results, and a qualitative analysis is more heuristic, as discussed in detail in § 2.5; in the second case because the documentation from Northern Italy is mostly limited to the Ravenna Papyri and, for this reason, a statistical calculation would be likewise irrelevant.

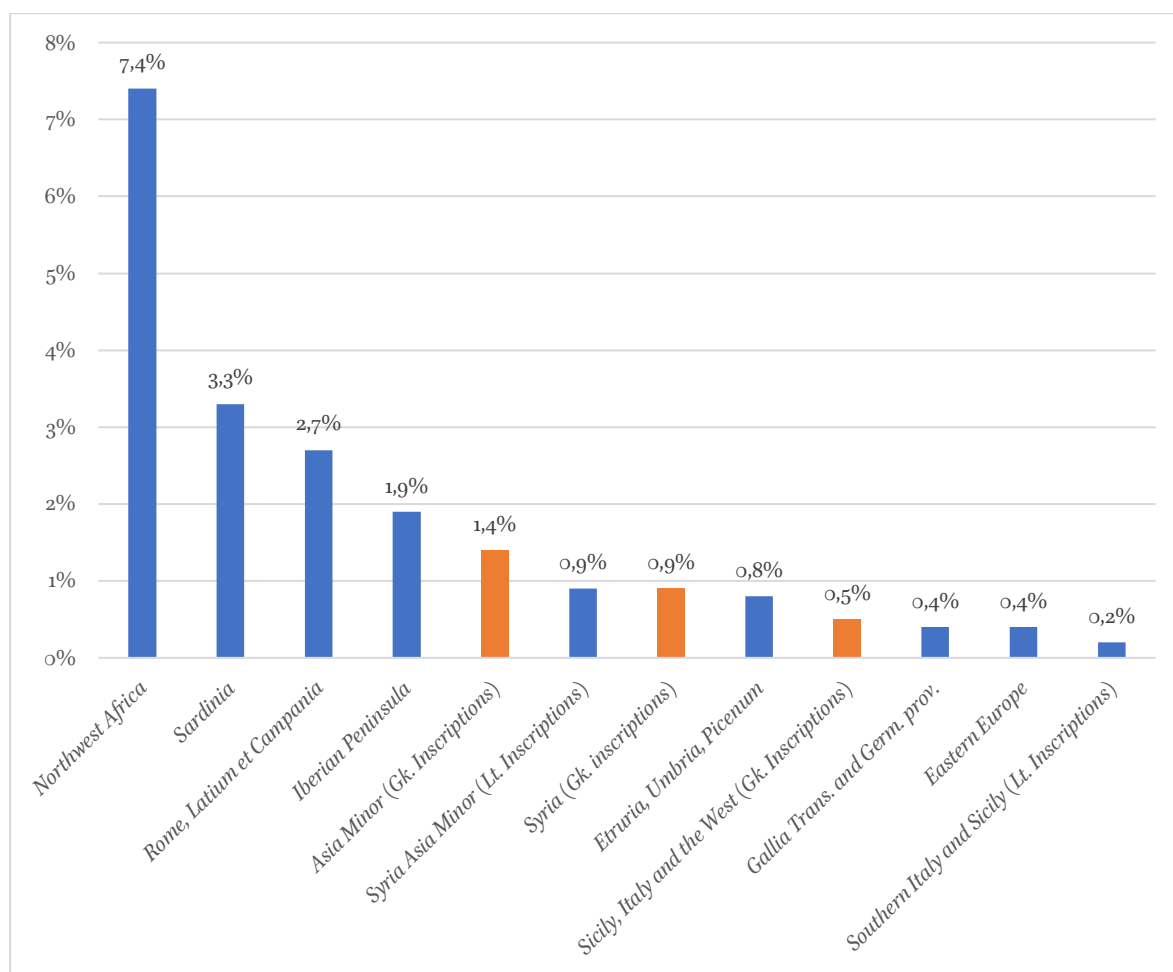


CHART 2.12 *Relative frequency of the spelling with vowel prosthesis (1st c. BC – 8th c. AD)*

Although these statistical projections require some caveats, first of all that we are referring to the frequency of the spelling and not to the frequency of the phonological phenomenon in itself, a significant datum, however, is the high frequency of this spelling in the documentation from North Africa and, conversely, the low frequency found in the Greek documentation from Asia Minor, where it is a common belief that the phenomenon is diffuse. On the other hand, this relative ratio also allows us to reduce the absolute figure of a higher number of forms from the area of Rome, and to show that, despite what the absolute data suggest, this spelling is well represented in the documentation from Sardinia and the Iberian Peninsula.

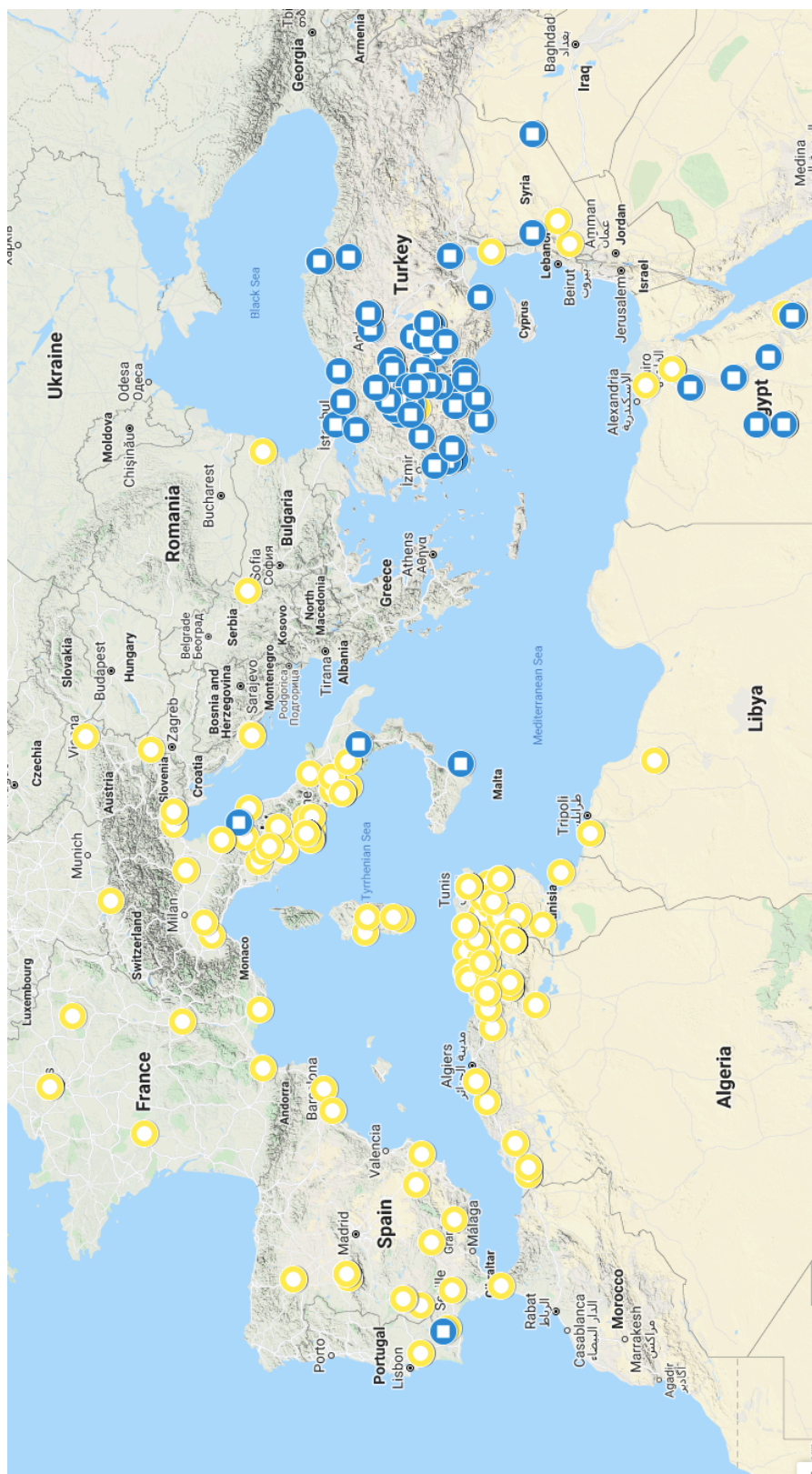
2.4.4 Further remarks

However, the data discussed so far do not highlight a complex phenomenon since the assignment of the labels "Lt" and "Gk" was given on the basis of the language of the text. In fact, there are numerous cases in which there are phenomena of interference between the two languages, which can be investigated more thoroughly only by means of a meticulous examination of the texts, and which can be reduced to two facts: the presence of borrowing from one or the other language, often with hybrid morphology; Latin word in Greek script or Greek word in Latin script. We list below some cases, which will be further investigated in the course of the analysis of the texts, so as to frame the problem we are going to outline: Ἰσ·πληραντια βενεμερεντι · φηκειτ (*IG XIV*, 2016), from Rome; DEDALI ISPES TVA PIE ZESES, from Rome (*CIL XV*, 7025), ἰσ[το]πενδίων (*Quellen Ankara* 138,115) from Asia Minor or the forms recorded in the *Folium Parisinum* (Kramer, 1983, I, 14; cf. § 2.5.1).

Furthermore, if we look at the documentation in relation to lexical types, we can see that the forms attested in the Greek and Latin texts, except for a few limited cases, respond to the same types, due to the circulation of a common lexicon, especially in the military sphere, and to onomastic diffusion (the most represented types are στεφαν-, στρατ-, SPIRIT-, STIPEND-).

The degree of interference, however, is not only noticeable the lexical level, but also at the morphological one, cf. e.g. Ἰσκοπελλιανῶ (*MAMA VI List* 151), with lexeme of Greek origin, but Latin suffix *-iānus* and gemination before /j/ (cf. CHAPTER 3) and εἰσταβλαρις, with lexeme of Latin origin (*stabularius*), but the treatment of the suffix -αριος according to the morpho-phonological evolution of Koine Greek, i.e. -αριος > -αρις.

These particular examples, as well as the syntopic and synchronic occurrence of prostheses in both Greek and Latin documentation suggest a reconsideration of the phenomenon in an areal perspective, clearly visible by way of a geolinguistic macro-examination from MAP 2.1



MAP 2.1 Geographical distribution of the forms with vowel prosthesis in Latin (yellow) and Greek (blue)

Although the map presents the flaw of leveling out the chronological aspect, it reveals an unequivocal datum: both Latin and "the other Latin" shared prosthesis: the former to a greater extent, the latter to a lesser extent.

The elements we introduced thereby suggest the need to frame the phenomenon on the particular level within bilingual communities and, on the general one, within the framework of Greco-Roman koinè-writing, as well as to reconsider some substratistic hypotheses.

Given this general account, a further detailed and qualitative investigation is necessary in order to probe the historical dimension of the documents attesting to vowel prosthesis. We will proceed to analyze the data by making a macro-distinction between the area with the circulation of Greek and the area with the circulation of Latin as vehicular languages.

2.5 Syntopic analyses

2.5.1 Greek-speaking area

2.5.1.1 *Egypt*

As is well known, Roman Egypt was a complex sociolinguistic area in whose repertoire the varieties of Egyptian, Koine Greek, and Latin coexisted with varying degrees of usage. The prosthetic vowel is attested in both Greek and Latin documentation; in parallel, both phenomena of apheresis *ex(s)C* > *sC* and *insC* > *sC* and also cases of prosthesis before simple /s/ are documented. In the following, we present a list of some of these forms:

- (1) a. IS·CIS (= *scis*?; *CEL* 79; approximately 50 AD)
- b. εἰστατήρων (= στατήρων; *O. Did.* 373, 88-96 AD)
- c. ἰστατήρα (= στατήρα; *O. Did.* 425, 125-140 AD)
- d. ESOPERA (= *supra*; *O. Did.* 417; 100-125 AD)
- e. ESABARIO (= ?; *O. Did.* 417; 100-125 AD)
- f. ἰστρατιώτης (= στρατιώτης; *I. Did.* 7, 177-192 AD)
- g. Ἰσμαράγδω / Ἰσμαράγδου (= Σμάραγδ-; *P. Med.* 46; 3rd c. AD)
- h. ἐσπέρματα (x 2) (= σπέρματα; *P. Sakaon* 70; 338 AD)
- i. ἐσχοινίου (= σχοινίου; *P. Sakaon* 70; 338 AD)

j. ἰστοργῆς (= στοργῆς; *Milne Cairo Mus.* 77.9282; 4th c. AD)

k. ἰσ[ρ]ίβαις (= σκρίβας; *Stud. Pal.* 1.3.; 455 AD)

l. εἰσταδιάρχη (= σταδιάρχη; *SEG XXXII*, 1588; 6th-7th c. AD)

The forms (1a) - (1f) are attested in very interesting documentary niches, which provide useful information about the circulation of Latin in Egypt, namely the well-known ostraca from Wâdi Fawâkhir (*CEL* 72-80) and the ostraca and inscriptions from the fort of Didymoi (*O.Did.*) in the Eastern Desert, where a Roman praesidium was settled.

In the *verso* of the quite fragmentary ostrakon published in *CEL* 79, the form IS·CIS (l. 5) can be read. Cugusi (1992-2002 II, p. 73) interprets it as [*concup*]/*is-cis*, with an erroneous word-cut. Nonetheless, the reading of the form IS·CIS as the 2nd p.sg. indicative present of the verb *scio* could not be ruled out. The syllabic punctuation, well-documented in this fragment and indicative of a low alphabetization level (Guéraud 1942 p. 161), could hint at the heterosyllabic treatment of the sC cluster.⁷⁹ Further considerations could corroborate the plausibility of this reading. Firstly, the prosthesis in the verb *scio* is well-documented— see, for example, the forms ISCIAS and ISCIRE in the Bu Njem ostraca (*O. Bu Njem* 83 and 104).⁸⁰ Furthermore, the verb *scio* in the 2nd p.sg. is employed quite frequently in letters and brief messages due to obvious pragmatic and communicative reasons.⁸¹ The ME following IS·CIS could be interpreted as the subject of an infinitive structure (by integrating *f*[...] with *f*[*acere*]).⁸² Therefore, the sense might be, “you know I do willingly.”

The forms (1b)-(1f) are taken from the Didymoi site in the Eastern Desert. The corpus consists of both Greek and Latin texts, dating from 76/77 AD to 250 AD (Cuvigny 2012, p. 2). In particular, the Latin letters are of great interest from a linguistic point of view, as they contain a concentration of aberrant spellings comparable only to the private letters of the Bu Njem ostraca (24%) and exhibit a variety of elements of interference between Latin and Greek (cf. Dickey 2012; Leiwo 2018). The corpus of the published texts comprises approximately 470 documents,⁸³ mainly in Greek. Latin texts are overall 42.

⁷⁹ Comparable syllabic punctuation would not be isolated. See e.g. IS · PE · RA · BI in *CIL* X 8189.

⁸⁰ The vowel prosthesis in the verb *scio* is overall attested 9 times (see Logud. *iskire*).

⁸¹ Cf. e.g. *CEL* 141 (*optime scis*), *CEL* 147 (*optime scis*), *O. Did.* 429 (*et tu scis*), *T. Vindol.* 255 (*scis certe*).

⁸² For a comparable structure, see *CEL* 141: *scias me pater accepis[se]*.

⁸³ The corpus has not yet been published in its entirety. It should contain a total of 930 texts

Vowel prosthesis is attested in the lexeme στατηρ- (1b) and (1c) (cf. FIGURE 2.2), with different spellings, due obviously to itacism.⁸⁴ The word στατήρ, -ῆρος, ὁ ("a weight, standard coinage"; *LSJ* s.v.) is well documented in Greek papyri. This word is attested in Latin from the end of the Republican Age (Cic. *de orat.* 2.159 and *CIL* IX 1656) and was adapted mainly into the -a class (*statera*, -ae, f.; 'a type of scale', *OLD* s.v.) from the accusative στατήρα.⁸⁵ Vowel prosthesis is also attested in the Latin word *statera*, which is continued in many Italian dialects (*REW* § 8233) (*ISTATERA*, *CIL* 8 22914, from *Hadrumantum*).

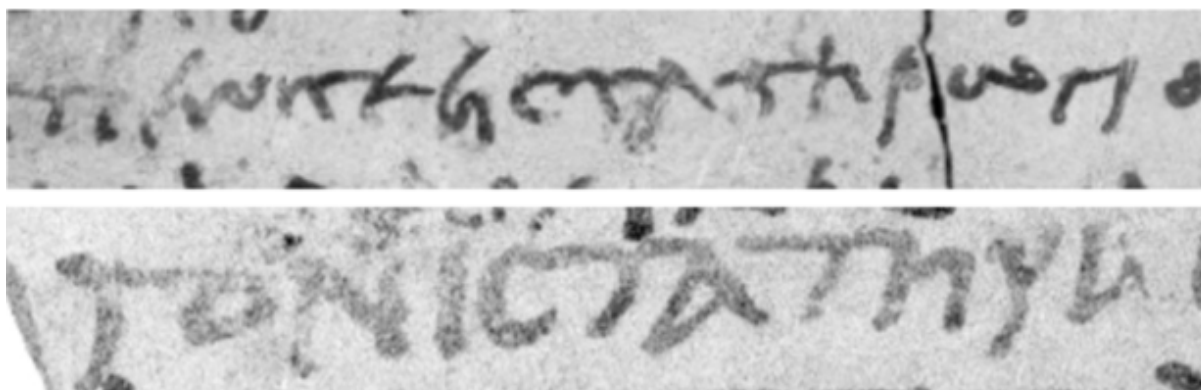


FIGURE 2.2 Details of *O. Did.* 373 e 425

The form appearing in (1f), with the geminated spelling of the fricative /s/ (cf. CHAPTER 3), is attested in the lexeme στρατ-. Notably, the inscribed brick edited in *I. Did.* 7 (cf. FIGURE 2.3) contains the form ΛΥΣΙΤΑ/ΝΩΝΡΟΜ, which is a hybrid Greek/Latin plural genitive; moreover, the use of <Y> instead of <OY> is probably due to graphemic interference with Latin (Cuvigny 2001, p. 156).

⁸⁴ Since the Roman period, the alternation between <η>, <ι>, <ει> and, more rarely, <ε> to indicate /i/ is very frequent in Greek papyri (cf. Gignac 1976, p. 235).

⁸⁵ On the other hand, see *statere*, -eris, m. in *Cod.Theod.* 12.7.1 and *Vulg.Matth.* 17.27; and *stateri* (NOM.PL.) in *CPL* 208-209, l. 10 (150-199 A.D.).

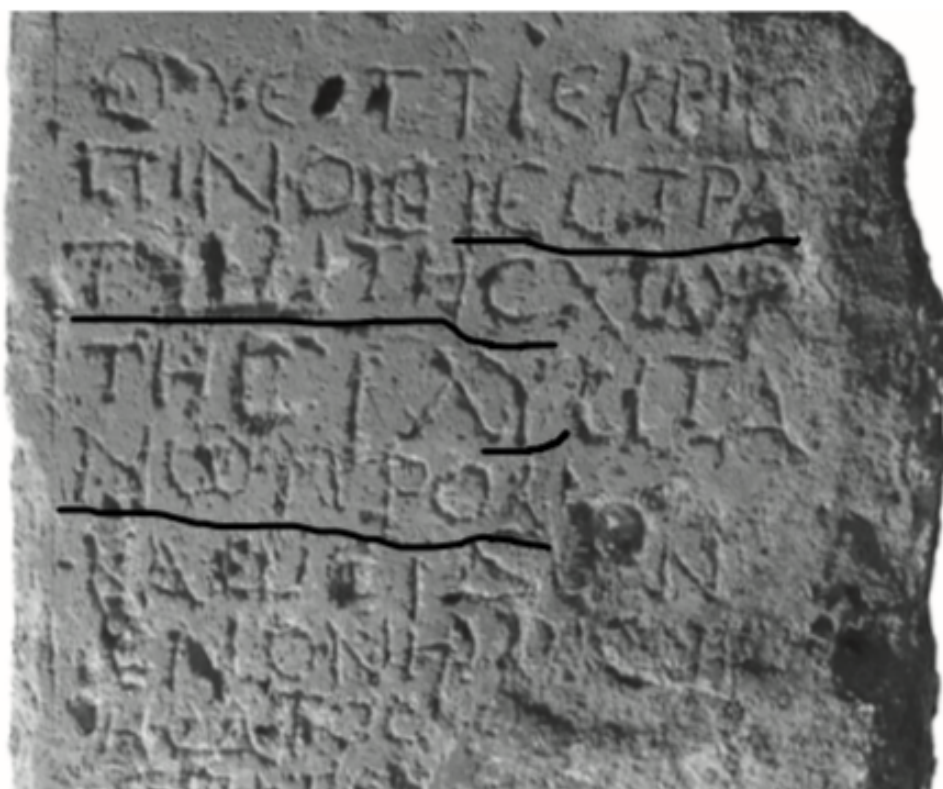


FIGURE 2.3 Detail of I. Did. 7

The documentation from Didymoi offers two instances of prosthesis before #sV, cf. ESABARIO / ESOPERA (*O. Did.* 417). This ostracon, of a certain extent (22 lines), is very appealing. It consists of two different letters, both addressed to *Claudius*. The first one is sent by *Demeterus* (*sic*), the second one by *Numosis*. The same author, probably *Numosis*, handwrote the two texts, , as Bülow-Jacobsen (*O. Did.*, *ad loc.*) suggests. Several elements show that neither *Demeterus* nor *Numosis* were of Latin L1. Indeed, the letters were written by employing a Latin-Greek glossary, as calques, as well as erroneous translations, would suggest.

Given that *Demeterus* and *Numosis* may have had a better competence of Greek than Latin, the fact that they are writing in Latin for a private text would imply that *Claudius* was able only to understand Latin. Bülow-Jacobsen suggests that *Claudius* might have been Dacian since he is mentioned together with a certain *Diurponain* (l. 22), a name of Dacian origin. The letters show peculiar phenomena: on the one hand, typical Substandard Latin forms commonly found in other texts; on the other hand, idiosyncratic imperfect learning phenomena. In this text, we find various epenthetic phenomena, such as anaptyxis within the *muta cum liquida* cluster (i.e., DEMETERV, FRATERI, MAGISTERI, SCIRIBE) and paragoge (DONICO, CL *donec*). The cases of prostheses before #sV are to be put in relation to the segmental nature of /s/, which is to be supposed tense enough to become

a syllabic segment (cf. Marotta 1999). However, this kind of prosthesis, albeit less frequent than that before sC, is also attested in Latin (cf. ISSVPASS i.e., *suprascripta* in *T.Alb.* 8).

Although this type of prosthesis is not directly relevant to the subject at hand, it is nevertheless worthwhile to dwell on the analysis of these two forms to frame some linguistic features arising from the documentation from Didymoi.

The form ESABARIO is pretty interesting and deserves particular attention. The sentence wherein it is attested is: INTERROGA SI ACEPIT ESABARIO (ll. 18-19). Therefore, it is likely that ESABARIO, which possibly stands for ESABARIVM (acc.sg.) indicates a type of good that is usually sent to soldiers. Indeed, private letters usually refer to the sending of various types of goods (see, e.g., Claudius Terentianus's and Rustius Barbarus' epistolary). It is not clear which kind of word, perhaps a Greek borrowing, is to be supposed for ESABARIVS/ESABARIVM. Bülow-Jacobsen proposes three different explanations, i.e., a corrupted form of, respectively, *sabanum*, *subalarium* or *sandalium*. A further examination might shed light on which form is more likely.

- The term *sabanum* / σάβανον 'line cloth or towel', probably of Semitic origin (cf. Aram. *sibnī*, Arab. *seban*), is commonly attested in Latin as well as Greek papyri, and it is continued in some Romance languages (e.g., Prov. *sabana*, Sp. *sábana*, cf. *REW* § 7478 and *FEW* s.v.; cf. *savanuye*, *AIS* 60 'la pezza', Monte di Procida (NA)). In Latin and Greek papyri, it is usually mentioned in contexts referring to the sending of goods, cf. e.g., MISI TIBI [...] IMBOLVCLUM IN QUO HABES [...] SABANA (*CEL* 142, ll. 8-11; 98-117 AD) and παρέλαβον [...] το σάβανον (*O. Claud.* I 142, ll. 4-6; 109 AD). The form with the -ιον suffix, i.e., σαβάνιον, is attested as well (e.g., *P. Gen.* (2) 1 80). A similarity between ESABARIO, i.e., *sabarium*, and σαβάνιον is evident. The form *sabarium* instead of *sabanium* might have been influenced by the Latin suffix *-ārius*, or, more likely, by the enlarged variant of the diminutive suffix -ιον, i.e. -αριον (see e.g. παιδίον ~ παιδάριον). Koine Greek, as is known, is characterized by a high productivity of the diminutive suffix, which tended to lose its original semantic value and to be applied as a general derivative suffix, similarly to -(c)*ŭlum* in Vulgar and Late Latin.
- The second hypothesis linking ESABARIO with *subalarium* is suggestive. Greek σουβαλάριον is formed via the -ιον suffix from the Latin adjective *subalaris*, -e 'carried under the arm (of a weapon)' (*OLD* s.v.). This word is recorded neither in Daris' lexicon nor in *LSJ*, but it seems to be attested in two Greek papyri, i.e., *O.Claud.* 2 276 (τὸ σουβαρίον l. 5) and *SB* 28 17086 ([τὸ σου]βαλάριον, l.2). Interestingly, the first-mentioned attestation shows the drop of -λα-, suggesting a resemblance with the being discussed (*e*)*sabarium*. It is worth noting that while in Latin the adjective *subalaris* is referred to weapons (e.g. *subalare telum*, *Nep. vitae* 10.5.3), Greek σουβαλάριον seems to refer to another type of object. In *O.Claud.* 2 276 it is attested within the following context: καλῶς ποιήσεις λαβὼν τὸ σουβαρίον μου παρὰ τοῦ ὄνηλάτου τοῦ τὴν πινακίδαν ἔχοντος καὶ πλ\ῆ/σόν μοι αὐτὸ ὑδάτους ('you will do well if you get my σουβαρίον from the donkey-driver with the tablet and fill it for me of water').

Albeit the not fully comprehensible context, the word σουβαριον seems to refer to an object carried by donkey-drivers, having the property to be filled with water. In *SB* 28 17086 the context is: [τὸ σου]βαλάριον μου ἐκ τοῦ λάκκου ἀνενεγκάτω Ἀγαθῦς ('be my σουβαλάριον from the tank sent to Agathys'). Also, in this case, σουβαλάριον seems to refer to an object related to the water supply. Therefore, it is likely that σουβαλάριον indicates a goatskin or something. This form might have been created within the jargon of soldiers allocated in the desert, to whom water supply was a primary need, to refer to a container which probably could be carried under the arm. Indeed, the documents attesting to these forms come from the Eastern Desert, a hyper-arid area. The ostraca of Didymoi belong to the same environment, and the examined ostrakon (*O.Did.* 417) is almost contemporary to *O.Claud.* 2 276 (125-175 AD) and *SB* 28 17086 (75-125 AD). A possible relation between ESABARIO and σουβα(λ)άριον is thus possible. The not entirely correspondence as far as vocalism is concerned poses some problems; nevertheless, distant assimilation, or at least a mechanical error, cannot be ruled out.

- Another hypothesis suggests that ESABARIO represents the diminutive form, with rhotacism, of σάμβαλον, i.e. σα(μ)βάριον. The term σάμβαλον is a dialectal form of σάνδαλον 'sandal' (cf. Bülow-Jacobsen, *O.Did.*, ad loc). Nevertheless, the variant σάμβαλον is never attested in papyri.

The form ESOPERA (1d) is also worthy of interest in other respects: first of all, it can be compared to the form SOPERA we find in the corpus of letters by Claudius Terentianus (*CEL* 146). This is one of the few certain examples of /ʊ/ > [o] in stressed syllable in Egyptian epistolary texts. It is relevant that the use of the prepositions *super* and *supra* to introduce the topic, as is the case of *CEL* 146 and *O. Did.* 417, is believed to be a colloquial feature due to the influence of Greek (cf. *Fest.* 394, p. 11: *per se 'supera' significat quidem 'supra'. Verum ponuntur etiam pro 'de' Graeca consuetudine, ut illi dicunt ὑπέρ*).

The evidence discussed so far shows how the prosthesis can be placed, for the first two centuries of the Vulgar Era, in the horizon of a diastratic variant, sometimes idiolectal, circulating in the military circles of alloglots learning Latin. In parallel, in the same period, we find, in Terentianus' epistolary, the form SPEC[T]EMVS for *expectemus* (*CEL* 146) (cf. Adams 1977, p. 21; Kramer 2007, p. 72; Adams 2016, p. 277), which shows how in barely controlled registers the tendency for the erosion of initial *ex(s)C* was already active. The interference microphenomena previously discussed will act on this fault.

Starting from the 3rd century AD, we may notice how prosthesis and parallel phenomena penetrate into the bureaucratic writings as well. This can be seen in the forms (1g)-(1l) (for which see

also Gignac 1976, p. 312; and Consani 1999, p. 86). Note that *P. Sakaon* 70 from Theadelphia is written by Aurelius Aiel, son of Sakaon, one of the most important and wealthy people in the village, who performed various liturgies (cf. Bagnall 1982). In (1l) the form with the prosthetic vowel is a borrowing from Latin that is quite attested in Greek papyri (cf. Daris 1991, pp. 283-284).⁸⁶ In parallel, see the two forms STRVMENTA in *P. Oxy.* 4129 51, a bilingual contract of sale (257 AD), and the three instances of VIR ISP(ECTABILIS) in a bilingual procedural debate (*ZPE*-170-151, 5th c. AD).

Particular attention should be paid to the *Folium Parisinum*, which represents a pretty singular document, with some differentiation elements from other bilingual glossaries, namely the adoption of Latin script both for Latin and Greek words and probably its collocation outside the context of the learning of Latin as L2.

This document is composed of 46 couples of words about the lexicon of tavern and body parts, and it has been published in C. Gloss. Biling I, 14 and more recently in Kramer (2011), also containing the apograph of the document.⁸⁷

This glossary is classified within the so-called *Gebrauchsglossare*, which were not compiled for didactic purposes, but practical ones, and presents a text much deviating from traditional norm (cf. Kramer 1981; Capasso 1998; Herman 1998, p. 31).

The text is dated palaeographically between the end of the 6th and the beginning of the 7th century AD, though Lowe and Seider proposed to backdate it to the 4th century AD. According to Kramer, the glossary was addressed to people with Latin L1, who knew neither Greek language nor Greek script, maybe, more precisely, to sellers or soldiers who arrived in Egypt from the Western provinces.⁸⁸

The nature of spontaneous text, written for practical purposes, can be deduced even from the disposition of the words within the document, which is chaotic and sometimes presents an order

⁸⁶ The form ἰσκ[ρ]ίβαις should be interpreted as a NOM. SG. (= σκρίβας); see [σκρι] βας in l. 14. Note that this borrowing is adapted into Greek morphology in the class of masculine nouns in -ας, whereas the unadapted form σκριβας is generally more attested in Greek papyri and is indeclinable (see τὸν σκριβας in *P. Lips.* 1 40).

⁸⁷ This document is also published in *P. Paris 4bis* (with photo in pl. xviii), *CGL* II 563, *CPL* 277, *CLA* V 696 (with photo). The photograph of the document can be seen also in Wessely, *Schrifttafeln* (pl. VII, n. 20) and Seider, *Lateinische Paläographie* II (n. 68 pl. 4).

⁸⁸ «Das Glossar richtete sich auf den Unterschied zu den meisten anderen uns erhaltenen zweisprachigen, nach sachlichen Kriterien geordneten Wortlisten an Menschen lateinischer Muttersprache, wobei sowohl der vulgärsprachliche Charakter der griechischen und lateinischen Wörter als auch die Tatsache, dass nicht einmal die Kenntnis des griechischen Alphabets vorausgesetzt wird, dafür spricht, dass an kleine Händler und einfache Soldaten, die aus dem Westen nach Ägypten gekommen sind, als Zielpublikum zu denken ist» (Kramer, *C. Gloss. Biling.* I, 14, p. 89).

Latin-Greek (cf. l. 11) and Greek-Latin (cf. l. 13), as well as both horizontal and vertical disposition of the couples (cf. respectively ll. 19 and 1-2).

Five words within this glossary present the phenomenon of vowel prosthesis before word-initial sC both in Latin and in Greek words, as it can be seen in (2):

(2)	Line	Latin	Greek	Gloss
a.	11	ISCARIA	SERIS	'endive'
b.	20	BVCA	istoma	'mouth'
c.	22	ISCIO	OIDDAM ⁸⁹	'I know'
d.	23	TVNICA	ISTICARIN	'tunic'
e.	28	ALEV	ISCORDA	'garlic'

As can be noted, the phenomenon of vowel prosthesis is attested both in Latin (*iscaria*, *iscio*) and Greek words (*istoma*, *isticarin*, *iscorda*). Moreover, there is another example of vowel prosthesis before another consonant cluster, i.e., *oxomin* (l. 2, corresponding to *pane*, l. 1).⁹⁰

- (2a) The Greek term σέρις (gen. -εως and -ιδος) in the couple (2a) means 'endive, chicory' (cf. *LSJ* s.v.). It is borrowed in Latin in the class of dental stems (*seris*, *-idis*), and it is documented in Late Republican and Early Imperial technical treatises (Varro, *rust.* 3.10; Plin. *nat.* 1.20, 20.76; cf. *OLD* s.v.). In Late Latin, *seris*, *-idis* is replaced by *escaria* (scil. *herba*, viz. 'edible grass', cf. *TLL*, vol. V 2, p. 856, lin. 15 - p. 856, lin. 44), derived from *ēscā* ('food', probably related with the verb *edo*, cf. *DELL* s.v. *edo*). From the diminutive (e)*scariōla(m)* Tsc. *scariōla*, *scarōla*, Fr. *escarole* and Sp. *escarola* derive (cf. *REW* § 2914, *DELI* and *DEI* s.v.; *TLL*, vol. V 2, p. 856, lin. 7 - p. 856, lin. 14). The form *iscaria* in (2a) can be explained as the result of the aphaeresis of the initial vowel and the reanalysis of *escaria* as beginning with sC (**scaria*) and the following insertion of vowel prosthesis, according to similar phenomena of reanalysis which affect Latin words beginning with VsC.

⁸⁹ *eddam* according to *CGL* II 563, *CPL* 277, Seider, *Lateinische Paläographie* II 68; *oiddam* according to *P. Paris 4bis* and Kramer (2011, n. 11).

⁹⁰ The reading *oxomin* (Gk. ψωμίν < ψωμίον 'bread') is not certain. Before the word *oxomin*, a sign is interpreted as a *signum crucis* by Lowe, Seider, and Kramer, and as a <t> in *P. Paris*, *CGL*, and *CPL* (the reading *toxomin* would thus be interpreted as a univerbation between the article and the word). The reading *oxomin*, which is more likely, is to be interpreted as a prosthetic form in which the quality of the inserted vowel is assimilated to the quality of the first vowel in ψωμίν (with confusion between /ps/ and /ks/).

- (2b) the prosthetic vowel is attested in the Greek word στόμα ‘mouth’, which is matched with the Latin form *buca* (for the more common *bucca*).⁹¹ As it is widely known, *bucca* substitutes the Classical Latin form *ōs*, *orīs* ‘mouth’, probably due to the homophony with *ōs*, *ossīs* ‘bone’, after the loss of vowel quantity distinction (cf. Väänänen 1981, p. 77).
- (2c) the prosthetic vowel is attested in the verb *scio*, which is glossed via *oiddam* (cf. οἶδα ‘I know’). The form *iscio*, with vowel prosthesis, is quite attested in Latin non-literary documents, see, e.g., ISCIAS and ISCIRE in *O. Bu Njem* 83 and 104 (and possibly IS-CIS in *CEL* 79). This verb, with vowel prosthesis, is continued in Log. *iskire* (cf. *REW* § 7722).
- (2d) the prosthetic vowel is attested in the noun *isticarin*, cf. στιχάριον ‘variegated tunic’ (*LSJ* s.v.) with the -άριον diminutive suffix attached to στιχῆ, and the syncope -ι(ο)ν > -ιν, highly frequent in Koine Greek (cf. Bubenik 2009, pp. 192-193).
- (2e) the prosthetic vowel is attested in the syncopated form *iscorda*, from σκόρ(ο)δον ‘garlic’ (cf. NeoGk. σκόρδο), which is highly attested in Greek papyri (cf. Preisigke, *Wört.* s.v.). The match between *aleu(m)* (sg.) and (ι)σκόρδα (pl.) suggests that the plural form σκόρδα is reanalyzed as a nominative singular of the feminine class. This is a piece of further evidence that the compiler of the glossary had Latin as L1.

Even with the problems of interpretation that it poses, this text shows us how a person with Latin L1 tended to the systematic insertion of the prosthesis when adapting Greek words beginning with sC. If, as Kramer asserts, the author of the text must probably be identified in a merchant or soldier from the western area, this small piece would suggest that, in a variety of Latin, around the 7th century, the phonological rule was systematic and productive, and generalized to every phonosyntactic context.

2.5.1.2 Syria

Nine forms with prosthetic vowels are attested in the Roman province of Syria, as is shown in (3). Three of them are attested in Latin inscriptions, namely ISTVPENDIORO (*AE* 1939, 221) and ISTRΑ (= *strata*, in *AE* 1931,86 and *AE* 1931,104, two *miliaria* along the *strata Diocletiana*). The other forms are

⁹¹ Indeed, it seems to be the unique attestation of the degeminated form (cf. *TLL*, vol. II, p. 2225, lin. 49 - p. 2226, lin. 62).

attested in the Greek documentation. Many of these attestations come from the city of Dura Europos, a crossroad with intense linguistic variation (cf. Taylor, 2002).

- (3) a. ἰσταρτηγα (= στρατηγός; *SEG* XV.850, 168 AD; Dura Europos)
- b. εἰσκότλα (cf. lat. *scutella*; *SEG* VII 371, 2nd c. AD; Dura Europos)
- c. εἰσπύλλ[α (cf. lat. *spinula*; *SEG* VII 371, 2nd c. AD; Dura Europos)
- d ἰστήλην (= στήλην; *IGLSyr* V, 2396; 196 AD; Emesa)
- e. ISTVPENDIORO (= *stipendiorum*; *AE* 1939, 22r; Seleucia Pieriae)
- f. ISTRΑ (= *strata*; *AE* 1931,86; 293-305 AD; Khan Aneibe)
- g. ISTRΑ (= *strata*; *AE* 1931,104; 293-305 AD; Valle Albana)
- h. ἰστα(ρτηγα) (= στρατηγός; *MUSJ* 36.1.1959; 250-256 AD; Dura Europos)
- i. ισφηνη (= σφήν?; *SEG* VII, 431 AD; Dura Europos)

Some of the Greek forms listed above are well known to tradition. Nevertheless, there is one issue that needs further analysis. Scholars generally argue that a typical feature of the Syro-Palestinian Koine Greek is the presence of vowel prosthesis in front of sC due to the Aramaic substrate, and adduce these examples as supporting evidence. Indeed, the Semitic languages generally avoid word-initial sC and usually prefer CV syllables (cf. Lipiński 1997, §§ 9.14, 9.15, 10.2). In addition to this, in the Palmyrene inscriptions, Latin and Greek personal names beginning with sC are written with initial <ϣ> /ʃ/ (e.g., ³SPYDN for Σπεδιανός, cf. Stark 1971, p. 136), as well as many Latin and Greek borrowings in biblical Aramaic (e.g., ³SPLNT for σπληνίον, ³STRṬYS for στρατιώτης, ³ṢṬLṬ for στολή, ³SQRTWR for *scriptor*, ³SQWTL for σκουτέλλιον/σκούτλια)⁹² However, these spellings are not systematic, and it is also possible that these graphemic oscillations depend on the source language, as Consani (1999, p. 85) has pointed out.⁹³

Therefore, the influence of the Aramaic substrate in the Latin/Greek forms shown in (3) may not be fully explanatory. On the one hand, vowel prosthesis is well attested in the Greek lexeme στρατ- also in Egyptian and Asia Minor Koine Greek (cf. §§ 2.5.1.1 and 2.5.1.3).⁹⁴ On the other hand, (2b) and (2c) could be interpreted as Latin loanwords reflecting Substandard Latin, as can be

⁹² See Bubenik (1989, p. 235), Banfi (1996, p. 20), and Mancini (2008, p. 296). In Biblical Aramaic, the prosthetic element represented by <ϣ> is documented in various initial consonantal clusters (not only sC, but also πτ, ξ, and *muta cum liquida*) as well as simple consonants, see Krauss (1898 I, pp. 136-140). Comparable usage is documented in (Neo)Punic inscriptions (see e.g. 𐤓𐤕𐤍 for Κλέων in *CIS* I, 2, 143, the *trilinguis* from Pauli Gerrei).

⁹³ On the other hand, the Latin name *Statilius* appears without the prosthetic vowel (STṬṬYLS), as well as some borrowings such as SPG (σπόγγος) and STRWMTYN (στροφάματα). See BUBENIK (1989, p. 235) and CONSANI (1999, p. 85).

⁹⁴ Cf. anche Ἑστάρτωνος dall'Asia Minore (*JHS* 19 (1899) 123, 132; si veda § 2.5.1.3).

inferred from a comprehensive examination of the graffito. This document, inscribed in the southern wall of the temple of the Palmyrene gods at Dura Europos (*SEG VII*, 371), records a list of objects (cf. *FIGURE 3.4*). Four of these objects, shown in (i) - (iv), are apparent Latin loanwords that clearly show substandard (and even pre-romance) features:

- (i) The form εἰσκότλα (col. I, l. 7) is generally related to Latin *scutella* 'bowl'. This correspondence needs probably to be reconsidered. The word *scutella* is obviously evident in the Greek form σκουτέλλιον, circulating in Egyptian papyri (Daris 1991, p. 283) and formed via the suffix -ιον. The Latin word *scūtŭla* 'plate', which is also attested in other non-literary sources (cf. *Vindol. Tab.* 194, 208, 590), is otherwise the basis of σκούτουλα (Daris 1991, p. 283) and also of σκούτλι(ο)ν (< *scut(ŭ)l-*).⁹⁵ Also, the form εἰσκότλα must be connected with *scūtŭla*. It should be noted that this form, dating from the 2nd century AD, shows several elements hinting at a Substandard Latin phonetic spelling: not only the vowel prosthesis, but also the syncope of the post-tonic vowel and the use of <o> instead of <ou>, which is probably a clue to a Proto-Romance merger between /ŭ/ and /ō/ into /o/ in tonic position. Also, it is worth mentioning that εἰσκότλα is in agreement with δύω. This fact suggests that εἰσκότλα is considered a neuter plural, with a metaplasm of gender and inflectional class that is common in Egyptian Greek (cf. Schirru 2013, p. 317).
- (ii) The form εἰσπύλλ [α (col. I, l. 11) implies a syncopated form from Lt. *spinŭla* 'spine', with subsequent total assimilation (cf. It. *spilla* 'pin'). This seems to be the only attestation of such a Pre-Romance development for this word in the ancient record.
- (iii) Similarly, the form φῖβλα (col. II, l. 3) results from the syncope of *fibŭla* 'buckle' (cf. It. *fibbia* 'buckle'). For similar outcomes, see e.g., φῖβλατῶριν in Egyptian papyri (cf. Daris 1991, p. 297; 3rd century AD)⁹⁶ and *fiblis* in *CIL* 3, 536 (3rd century AD).
- (iv) The form τοράλλια is a hapax in Greek.⁹⁷ It could be connected with the Lt. *toral* 'coverlet' (Cumont 1926, p. 374). Note the gemination of /l/ before /j/ < /i/ antevocalic, typical of the Latin of the Imperial Age (cf. *CHAPTER 3*). No Romance developments of this base are known.

⁹⁵ The word *scūtella* is derived from *scŭtra* (* *scutro-la* > * *scŭtrla* > *scūtella*). Thus, the retroformations *scŭta* (with *ŭ* due to overlapping with *scŭtum*) and later *scūtŭla* (cf. *DELL* and *EDLIL*, s.v. *scŭtra*) were created. This *scūtŭla* 'plate' should not be confused with *scūtŭla* 'wooden cylinder', which is a borrowing from Greek σκυτάλη 'stick, cylinder'.

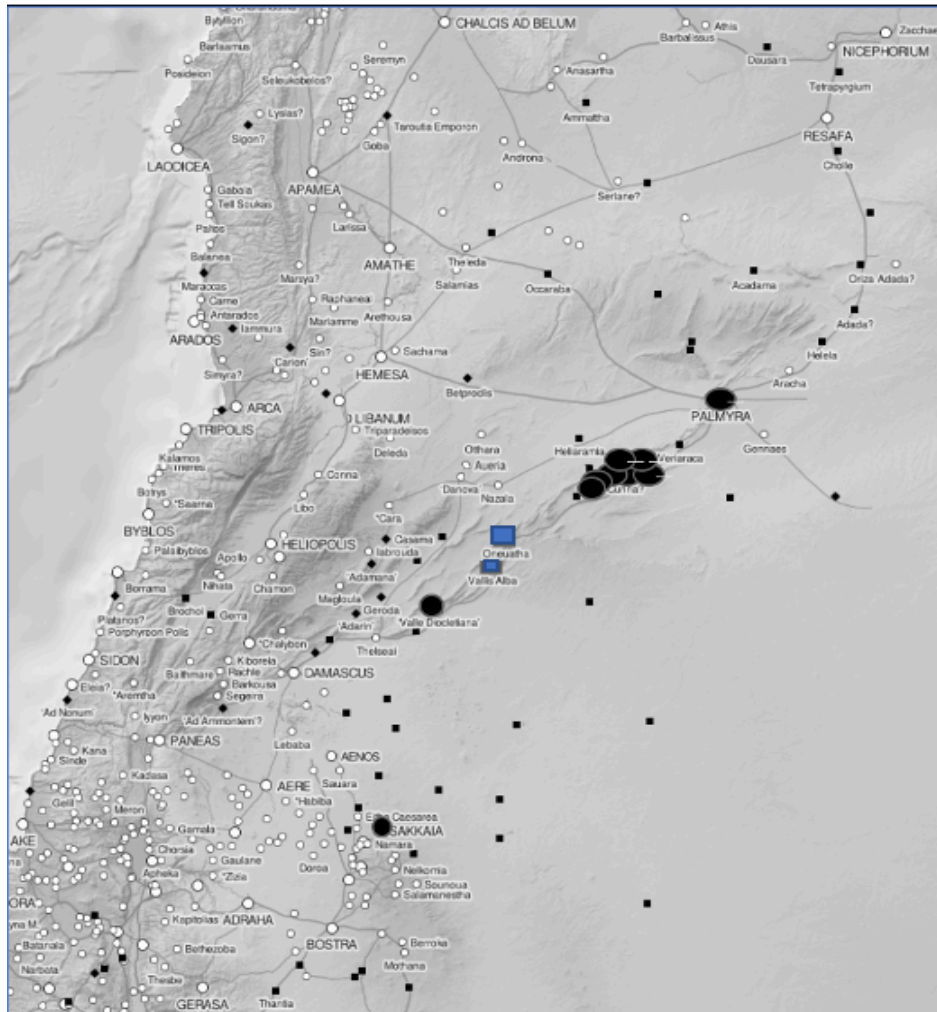
⁹⁶ Cf. *fibula[torium]* in *AE* 1953, 132.

⁹⁷ But perhaps cf. the forms τολαρ(ια) (*SEG VII*, 417) and τυλαρ(ια) (*SEG VII*, 431, where the form *ti* is attested), from Dura Europos.

ΛΕΙΧΝΗΑ ΧΡΥΣΙΝΑ
 ΕΧΩΜΕΝΤΟΥΘΓ
 ΟΝΗΛΘΧΡΥΣΙΝΟΝΕΜΑ ΔΕΥΞΕΦΙΒΛΑ
 ΚΘΕΠΘΚΙΘ ΤΡΙΣ ΦΙΒΛΑ
 ΜΑΚΩΝΙΘΣ ΤΡΙΣ ΧΡΥΣΙΝΑ ΡΙ
 Μ Δ ΡΙΘ
 ΝΔΒΛΘΤΡΙΟ ΛΘΜΑΘΤΡΙΠΟΔΑΤ
 ΓΘΚΟΤΑ ΔΥΩ ΤΕΤΡ ΚΡΘΤΡΙΣ
ΤΟΡΑΛΛΙΑ ΔΥΩ
 ΘΓΘΔΙΔΑΙΔΥΩ ΔΥΩ
 ΒΘΡΚΕΝΔΕΝΑ
ΓΘΠΥΙΔ
ΜΘΤ ΜΔ
 ΙΧΟΝ ΣΑ
 ΛΥΧΝΗΑΡΓΥΡΑ
 ΜΙ
 ΥΡΙ Ν
 ΤΕΤΡΑΠΟ Α
 Γ Γ ΙΠ
 ΛΥΧΝΑΓΛΥΠ
 ΞΡ ΙΚΑΙΘ
 ΥΝ

FIGURE 2.4 Apograph of SEG VII 371 (Cumont 1926, p. 374)

In the documentation in the Latin language, the prosthesis is attested in one inscription from Seleucia of Piera (1e), characterized by the presence of many elements deviating from the norm (cf. Galdi 2006, pp. 293-294), and in two *miliaria*, dated to the 3rd century AD, along the *strata Diocletiana*, that complex system of fortifications, built after the Sasanian campaign (293-298 AD), which ran along the *limes Arabicus* from Palmyra to Damascus (1f-g). The fact that the two *miliaria* are contiguous, as shown in MAP 2.2, suggests that these documents were produced in sequence in the same epigraphic workshop, if not by the same author (the blue colored boxes refer to the two aforementioned *miliaria*, while the dots refer to other *miliaria* along the *strata Diocletiana* in which the word STRA(TA) is written without the prosthetic vowel).



MAP 2.2 *Miliaria along the strata Diocletiana showing the spelling ISTRA(TA)*

Certainly, the data from Aramaic and, in general, of the Semitic languages make it plausible that the forms known to the tradition can be traced back to an Aramaic substratum. However, the prosthetic vowel is attested, for the same lexemes, also in the Greek documentation from Egypt and, as we shall see, from Asia Minor. Moreover, many of these forms present other elements typical of Substandard Latin. In the light of this, it is conceivable that the prosthetic vowel was instead a trait of a Graeco-Roman koine-writing, widespread in low diastratic contexts in the military sphere, consistently with what emerges from the data of the first attestations of the phenomenon in the Egyptian area.

2.5.1.3 *Asia Minor*

Greek inscriptions found in the Roman province of Asia Minor and throughout the Anatolian area abundantly attest, as seen, to the vowel prosthesis in word-initial sC. This observation led Thumb (1901) to hypothesize a dialectal feature of Asia Minor Koine Greek due to the Phrygian substrate, and some scholars argue that the prosthetic vowel was a characteristic of the Phrygian "accent" (Brixhe 2002, 2010). However, several factors suggest that the Phrygian element should be revisited. First, the phenomenon is also attested in other varieties of Koine Greek (§§ 2.5.1.1 and 2.5.1.2), and its first attestations in Asia Minor date back to the Christian era. For this reason, a global and more economical explanation is preferable, along the same line of Dessler's (1965) and Consani's (1999) views, who argue that the phenomenon is to be studied internally to Greek and in the framework of the contact between Latin and Greek. Moreover, Dressler (1965) revealed that there is insufficient evidence that Phrygian - as well as the Anatolian languages - did not admit words beginning with sC. After all, the very status of Neo-Phrygian is the subject of recent debates, and its vitality and circulation may have been overestimated (cf. Tzitzilis 2014). Moreover, the higher number of attestations of vowel prostheses in the Asia Minor Koine Greek is more likely due to a thicker epigraphic density in that region.

On the other hand, Latin influence is evident through an overall analysis of the documentation, with particular regard to chronology, lexical types, and onomastics. The chronological evidence reveals that the earliest attestations, dating back to the 1st century AD, concern the military lexicon (4):

- (4) a. Λονγεῖνος [...] ἰστρατιώτης (= στρατιώτης; *IK Perge* 469, 56-64 AD, from Perge)
 b. ἰστ[το]πενδίων (= στοπενδίων; *Bosch, Quellen Ankara* 138, 114; 74-107 AD, from Ankyra)

As already seen, vowel prosthesis is also attested in the lexeme στρατ- (4a) in the Egyptian and Syro-Palestinian Koine Greek (see 1f, 3a, 3h). It is worth noting that the soldier's name in (4a) is of Latin origin (Λονγεῖνος).⁹⁸ Moreover, the form ἰστ[το]πενδίων (4b) is an obvious Latin loanword⁹⁹ and the noun *stipendium* / *stupendium* is attested with vowel prosthesis in Latin inscriptions throughout the Roman Empire.¹⁰⁰ One might therefore postulate that, at first, vowel prostheses circulated in the Asia Minor Koine Greek in military environments, interfering with Latin. This interference is evident in onomastics, where the phenomenon is attested in anthroponyms with hybrid Latin/Greek formation (e.g., Ἰσκοπελλιανῶ)¹⁰¹ and in personal names of Latin origin (see, for example, Ἰστεμένιος).¹⁰² In addition, onomastic data show that vowel prosthesis is attested in personal names - related mainly to Christianity - spread throughout the Roman Empire,¹⁰³ often preceded by the "default-names" Αὐρήλιος and Φλαύιος.¹⁰⁴

Indeed, the Asia Minor data are important not because they would attest to a dialectal feature of the Asia Minor Koine Greek, but because a large number of documents allow the emergence of a situation that Syrian and Egyptian documents testify to more sporadically. A higher population density, in fact, implies a higher number of funerary inscriptions (hence the 35 attestations of vowel prosthesis in the word στήλη) and a richer onomastic repertoire. Also in this case, it could therefore be assumed that vowel prosthesis was a feature of the Graeco-Roman Koine Greek in the Eastern provinces, as can be inferred from the presence of the phenomenon also in Latin inscriptions (5):

⁹⁸ See also Μάρκου ἰστρατιώτου (3rd c. AD) and Οὐλπ(ίου) Κλε[. .] ἰστ[ρατ]ιώ[του] (2nd c. AD).

⁹⁹ See Consani (1999, pp. 78-79) for the analysis of other Latin loanwords, such as ἰσκληναρίου (= *scriniarius*, *MAMA* V, 301; 5th - 6th c. AD).

¹⁰⁰ Cf. IST[IPE]NDIIS (*CIL* 8, 9838; from *Mauretania Cesariensis*); ISTIPEN(DIORVM) (*CIL* 6, 32694; 3rd c. AD, from Rome); ISTIPEN(DIORVM) (*CIL* 8, 21568; 1st - 3rd c. AD, from *Acque Sirensi*); ISTIPENDIOR[] (*CIL* 6, 2789; 3rd c. AD, from Rome); ISTVP(ENDIORUM) (*AE* 1979,447; 2nd c. AD, from Split); ISTVPENDIOROM (*AE* 1939, 221; from Syria).

¹⁰¹ As Consani (1999, pp. 78-79) shows, the name Ἰσκοπελλιανῶ (*MAMA* VI List 151; 2nd-3rd AD, from Kürd Uşak) has a Greek lexeme (σκοπελ-) and a Latin suffix (-ianus). Also, note the gemination of /l/ before the prevocalic /j/ (see Rovai 2015b, p. 176).

¹⁰² The form Πόπλειος Ἰστεμένιος (*MAMA* IX 294; 133 AD, from Aizanoi) - perhaps corresponding to *Publius Steminus* - is attested in the city of Aezanoi, where numerous immigrants from Italy were settled (cf. Levick, Mitchell, Potter, & Waelkens, pp. lx-lxii).

¹⁰³ Personal names derived from the lexemes στρατ- and στεφαν- are the most attested. See for example Ἑστράτις (*MAMA* I 225) and Εἰστρατόνικος (*MAMA* X 278). Such names were equally widespread in Christian Rome, see for example ISTRATONICE (*CIL* 14, 629). Their circulation in Christian onomastics probably echoed the expression "soldier of Christ" (cf. 2 *Tim* 2:3). The name Ἰστέφανος (*SEG* XLI, 1217) is attested in Asia Minor inscriptions 7 times from the 3rd to the 6th century AD (cf. § 2.5.2.1).

¹⁰⁴ See, for example, Αὐρ Ἰστέφανος (*SEG* XLI 1217) and Φλάβιος Εἰστρατόνικως (*MAMA* I 217). As is known, the names Aurelius and Flavius - respectively from the 3rd and 4th century AD - became a kind of "default-name" to indicate the Roman citizenship (see Salway 1994).

- (5) a. FORVM ISTATVIS VETERVM PRINCIPVM ORNATVM (*CIL* 3 352; 331 AD)
 b. FL(AVIUS) BVRAIDO [PROTE]CTOR ESCOLE PED[ITVM] (*MAMA* XI, 72; 390 AD)

The inscription (5a) comes from the city of Orcistus. It is a petition written by the citizens - *sectatores sanctissimae religionis* - to the emperor Constantine, in which they ask for the status of an independent city. The inscription (5b) is an epitaph dedicated by Flavius Buriado to his wife. The lexeme SC(H)OL- of Greek origin is also attested with prosthesis in other contemporary Latin inscriptions.¹⁰⁵

Deserving a final mention is a group of Christian sepulchral *carmina* (*SEG* VI, 137-140; 300-350 AD) showing an interesting use of vowel prosthesis in the versification (6):

- (6) a. φένγος οὐκ ἰσοράτη, ἰσκοτόεσα δὲ νύξ (n. 147, v. 16)
 b. ἀλλ' ἐμῆς στοργῆς (n. 138, v. 5)
 c. τί σπεύδουσ' ἔθανες; (n. 140, v. 2)
 d. πρίν σε νυνφικὸν ἰστέφανον κοσμήσαμεν ἣν θαλάμοισιν (n. 140, v. 5)

In (6a) vowel prosthesis is used to increase the number of syllables in the dactylic pentameter. The inserted element is in arsis in the second hemiepes. In contrast, in (6b) the phrase ἐμῆς στοργῆς does not develop vocalic prosthesis, since an additional syllable would not fit in the hexameter (note the simplified spelling ἐμῆς στοργῆς > ἐμῆς τοργῆς).¹⁰⁶ In (6c) the prosodic chain neutralizes the distinction between τι-σπευδ and τ-ισπευδ.¹⁰⁷ Finally, in (6d) the vowel prosthesis is used to increase the number of syllables as in (6a). The insertion is in arsis in the third foot of the hexameter.

In view of the above picture, we can infer that also in this case the phenomenon of the prosthetic vowel, until at least the 3rd century AD, belonged to a low variety, mostly limited to military contexts and immigrated Italic communities. From the end of the 3rd century AD, according

¹⁰⁵ See for example ISCOLASTICVS (*CIL* 6, 32955; 403 AD, from Rome).

¹⁰⁶ On the other hand, there are 5 occurrences of the noun στοργή with vowel prosthesis in the Greek inscriptions of Asia Minor.

¹⁰⁷ See συνισπουδάσαντες (*MAMA* IV 85a), ἰσπουδῇ (*MAMA* VII 228).

to what has already emerged in the Egyptian documentation, the phenomenon surfaces also in more educated texts, written by non-Latin speakers.

2.5.1.4 Summing up

The phenomenon of the prosthesis as evidenced by Koine Greek documentation offers a composite situation that is difficult to ascribe to clear-cut categories. An essential obstacle is obviously the impossibility of knowing the actors of the texts and the patterns of interaction. However, if we join the pieces discussed so far, we can in the meantime infer the following picture:

- Prosthesis in Koine Greek is initially confined to military environments, relating to the period of the Roman occupation and is connoted diastratically, also in consideration of the occasional occurrence of the phenomenon in relative terms. This is particularly evident in the documentation from Egypt and Syria, where the phenomenon is attested in the same social contexts as it appears in the Latin documentation; in the documentation from Asia Minor, the phenomenon is also associated with immigrant Italic communities.
- Looking in detail at the Greek attestations, we can see that, apart from the case of ἰστήλη, in the other cases Latin or hybrid terms are involved, which may suggest that the phenomenon was widespread in (sub)standard Latin and penetrated into Greek through loans and geographical mobility.
- Beginning in the 3rd century AD, the phenomenon takes on greater productivity, and penetrates into more formal contexts as well. This change, as we shall see, must be attributed to two factors: on the one hand, the progressive penetration of the phenomenon into Latin, and on the other hand, Christianity, which, for reasons of lexical frequency, imprints an acceleration on the phenomenon.

2.5.2 Latin-speaking area

2.5.2.1 Rome, Latium et Campania

In the present section we shall consider data on inscriptions from Rome and Italy. From this area come 206 attestations of the prosthetic vowel (from the 1st century BC to the 8th century AD),

163 of which from the city of Rome. This datum should be read first of all in the light of the complex social and demographic reality of Late Republican and Imperial Rome (cf. Banfi 1991). An exclusively quantitative analysis, however, is not sufficient to understand the phenomenon: it is necessary to identify homogeneous micro-contexts and to deepen the dimensions related to chronology, contents, onomastics and prosopography of these testimonies (Lorenzetti & Schirru 2010, p. 305).

The earliest attestations of vowel prosthesis, in fact, concern servile proper names and refer to a milieu of linguistic interference enabling the emergence of phonetic spellings. Special evidence is provided by the name *Smyrna*, clearly related to the Asia Minor toponym Σμύρνη.¹⁰⁸ The first macroscopic evidence that such an onomastic base refers to a servile personal name in Latin inscriptions, and to a place name in Greek ones, suggests that slaves from the coast of Asia Minor were called by means of the toponym of the city whence they were purchased. It is likely that this influx of immigrants dates back to Pompey's Asiatic campaign (67-62 BCE), as evidenced by the fact that the earliest attestations of the name *Smyrna* date from the middle of the 1st century BC.

This name shows several graphemic variants: in this regard it is worth noting that the most aberrant spellings appear in peripheral areas, while the forms SMYRNA and ZMYRNA, following the Greek spelling, are attested mainly at Rome.¹⁰⁹ On the other hand, from Campania come many examples of the anaptyctic form SMYRINA.¹¹⁰

The oldest form with prosthetic vowel - with the particular spelling ISZMYRNAE¹¹¹ - is attested at Buccino: this inscription (Soldovieri, 2010) provides a sure backdating of the first attestation to 60-20 BC and joins the form ISMYRNA from Pompeii (*CIL* 4 7221), generally considered the oldest and dated to 79 AD at the latest.¹¹²

This graphemic variability suggests several attempts to adapt a foreign name into the grapho-phonological level, thus allowing the surfacing of phonetic spellings: on the one hand, the

¹⁰⁸ In Greek inscriptions, this name is attested 111 times as a toponym, while 9 times as an anthroponym (often preceded by the form Αὐρήλια, see for example *Panamara* 254 and *Ephesos* 22489).

¹⁰⁹ These forms are attested about 40 times between 30 BC and 200 AD, mostly at Rome. These are transliterations of the Greek variants Σμύρνη / Ζμύρνη (since the Hellenistic period, <ζ> was also used to spell [z] before the voiced consonant, see Lejeune, 1972 § 107).

¹¹⁰ Such anaptyctic forms are attested five times: once at Rome (*CIL* 6 23897), three times at Pompeii (*AE* 1912 238, *CIL* 4 7863, *CIL* 4 7864), and once at Capua (*CIL* 10 4049).

¹¹¹ Note that Greek <ζ> is transliterated through <sz>. The use of <σζ> for <ζ> is also documented in Greek papyri (Gignac, 1976, pp. 123-124). In Latin this usage is limited to a few foreign personal names (SOSZONTI, SOSZOMENE, SOSZICVS, COMASZONTE).

¹¹² There are 12 forms with prosthetic vowels. One of these is attested in Greek inscriptions from Asia Minor (*MAMA* V R 20). The others are attested mainly at Rome (7 examples), while the earliest forms come from the Campanian area.

anaptyptic forms might suggest an Oscan adaptation,¹¹³ on the other hand, the prosthetic ones are probably due to a Latin nativization (Sampson 2010, p. 56), since the cluster /sm/ did not fit the Latin phonological system and had disappeared in both initial and internal position in pre-literary Latin (cf. Weiss 2009, p. 167). The case of the name *Smaragdus* is similar. This name is attested in Latin inscriptions as early as the 1st century AD, and the earliest attestations with vowel prostheses date from the 1st-2nd centuries AD. These are servile names, often with Greek morphology (see ISMARAGDIS in *CIL* VI, 37250). In addition, the insertion of vowel prostheses in such names created a phonological pattern aligning with other Greek servile names beginning with *Is*-, such as *Ismarus* and *Ismene* (see Prinz 1938 and Sampson 2010, p. 56).

Other onomastic types in which the phenomenon is documented with a certain frequency, formed from lexemes that also exhibit prosthesis in the above examined Greek documentation, are, - abstracting from the variants they may take on - *Spes*, *Stephanus*, *Stercorius*, *Staphylus*, *Spartacus* and *Stratonicus*, and, as far as nouns go, *spiritus* and *spes*. It is generally agreed that prosthesis in Rome is particularly common within the Christian community (cf. Prinz 1938, p. 197). However, in the first three century of the Vulgar Era, the prosthetic vowel occurs in both pagan and Christian texts. This impression is visibly due to the fact that Christian anthroponymy and lexicon have a high occurrence of word-initial sC.

One finding that emerges quite clearly is the correlation between the presence of prostheses and alloglot, primarily Greek-speaking, servile milieux, as is evident from the earliest attestations of vowel prostheses in the personal names *Stephanus* and *Spes* (and their derivatives). The name *Stephanus* is attested in Latin inscriptions about 700 times from the 1st century AD, and became popular from the 3rd century onward as a Christian name (Kajanto 1963, p. 97). The earliest forms with a prosthetic vowel are dated between the 1st and 3rd centuries AD from Rome and refer to freedmen's names (*CIL* 6 2693 and *CIL* 6 62551). Note that in *CIL* 6 62551 the sisters RVBRIA ISTE FANIS and RVBRIA MARCIANE (NOM.SG.) both have a *cognomen* with Greek morphology (as was commonly the case in freedmen's *cognomina*, see Adams, 2003 p. 473ff).

¹¹³ However, anaptyxis is not recorded in Oscan for this type of consonantal cluster (see Buck 1904 § 80). More generally, it can be assumed that this epenthesis - quite peculiar - is otherwise interpretable as an idiolectal nativization of a Greek name by L2 Latin speakers (perhaps with Oscan L1). See Adams (2003, p. 157) who provides a similar account for anaptyptic forms in the Sulpicii archive.

The name *Spes*, on the other hand, is the first Latin lexeme in which vowel prosthesis is attested. This personal name was widespread in the early imperial period, as was its Greek equivalent *Helpis* / *Elpis* (Solin 1996, p. 362), and it also initially referred to freedwomen. In some cases, it is not unlikely that the Latin form reflects a calque of the Greek name, according to a common practice. A Latin/Greek interference might be evident in some forms with vowel prosthesis. Indeed, among the various personal names derived from the noun *spes* or the verb *sperare*, two in particular provide some traces of a *plebejischen Deklination* (Schuchardt 1866-68, III p. 34), namely the forms *Spenis* and *Spetis*. The former is attested a total of 37 times (Σπῆνις is also attested in Greek inscriptions, see e.g., SEG XLIII, 461), while *Spetis* is attested 8 times. It is in these submerged forms that the prosthetic vowel emerges first, see ISPETI (CIL 14 I 198, from Ostia Antica) and ISP[E]NIS (CIL 6 26687, from Rome), both of which can be dated between the 1st and 3rd centuries AD. These coronal extensions develop from (I)*spes*,¹¹⁴ with a metaplasm from the fifth defective declension to the third one (i.e., *Ispes*, -tis; *Ispes*, -nis).¹¹⁵ Such genitive morphemes -nis and -tis are induced by the genitive desinences of other Greek personal names, such as *Zosimenis*, *Eronis*, *Zosimetis*, *Aphroditis* (see Bücheler 1866, pp. 35-36).¹¹⁶

The personal name *Sperantia*, which shows a formation continued in the Romance languages (cf. It. *Speranza*, Fr. *Espérance*, Sp. *Esperanza*), unlike *spes*, is attested 8 times. The only attestation of vowel prosthesis is found in a Latin inscription written in Greek script from Rome (IG XIV 2016, 290-325 AD): Ισπηράντια βενεμερεντι - φηκειτ (with univerbation of the classical formula *bene merenti*).

To a similar bilingual context should be referred the following pagan inscription from Portici, of the 3rd century AD (CIL 10 8189), with syllabic punctuation:

(8) D · M ·	<i>D(is) M(anibus)</i>
· EV · TY · CE · TI · EV ·	<i>Eutyceti Eu=</i>
· TY · CES · PA · TER · FI ·	<i>tyces pater fi=</i>
· LI · O · DVL · CIS · SI ·	<i>lio dulcissi=</i>
· MO · QVI · VI · XIT	<i>mo, qui vixit</i>
· ANN · XXIII · M · X · D · VII	<i>ann(is) XXIII, m̄(ensibus) X, d(iebus) VII;</i>

¹¹⁴ Cf. ISSPES (CIL 6 7974, 1st-3rd century AD, from Rome) and Ἰσπής (IG XIV 48, from Syracuse).

¹¹⁵ On the declension of *spes*, see Meiser (1998, p. 147-149), Weiss (2009, p. 256).

¹¹⁶ However, textual evidence shows that both (I)*Spenis* and (I)*Spetis* are also attested as NOM.SG. (see e.g. CIL 3, 7331), probably because of the analogy with Greek personal names ending in -is (see *Elpis*, *Stephanis*, *Smaragdīs* etc.).

• QUOD • E • GO • IS • PE • RA • BI • *quod ego isperabi*
 VT • TV • MI • HI • FA • CE • RES • *ut tu mihi faceres,*
 • B • M • F • *b(ene) m(erenti) f(eci)*

As can be seen, the use of the *interpunctum* for syllabic scansion is systematic. Probably the author, of Greek LI, as the name seems to suggest, is at an early stage of alphabetization in Latin. The syllabic scansion IS • PE • RA • BI shows the heterosyllabicity of the initial sibilant.

Regarding the phonosyntactic aspect, although there is no convincing evidence from a quantitative point of view, some inscriptions provide clues that the insertion rule may have been phonologically productive in post-consonantal contexts. In (9), a Latin inscription from Rome dating to 403 AD (*CIL* 6 32955), the same lexeme SC(H)OL- shows the presence or absence of vowel prostheses depending on the preceding segment:

- (9) V / [...]CO SCOLASTICO QVI VIXIT / [...] III DEP IIII K FEB IN PACE / [...]INVS ISCOLASTICVS SORORIS / [...] V C
 TEODOSIO ET RVMORIDO CONSS

In fact, a general trend in the development of vowel prostheses in specific phrases can be inferred, see e.g. IN ISTATVAM (*CIL* 11 5966) and the formulas *vir ispectabilis*¹¹⁷ and *mater iscelesta* (or *pater iscelestus*).¹¹⁸ Similarly, anaptyctic forms in which a vowel is inserted between a prefix such as *in-* or *sub-* and lexeme-initial sC suggest the productivity of the process in post-consonantal environments, see e.g. SVBISCALIREM (*CIL* 6 29791, from Rome, 2nd-3rd century AD) and SVPERISTITEM (*ICUR* I, 3194, from Rome, 380 AD).¹¹⁹

¹¹⁷ See BIR ISPECTABILIS in *CIL* 6, 31968 (Rome, 5th-6th century AD) and VIR ISP(ECTABILIS), which is attested three times in a papyrus recording a procedural document (ZEP 170/2009, 465-480 CE, cf. § 2.5.1.1).

¹¹⁸ The form *iscelestus* / *iscelesta* is attested three times (*CIL* 10 2801, from Pozzuoli and *CIL* 6 13535 and *AE* 1990, 101 from Rome). In the adjective *scelestus*, which is attested especially in Campanian inscriptions, the appearance of the vowel prosthesis may have been favored by the frequent collocation after *mater* and *pater* (out of 14 attestations of this adjective, in 8 cases it is associated with *mater* and *pater*).

¹¹⁹ These forms can be interpreted either as formations from an underlying form with lexicalized prosthesis (in this sense Pisani 1950, p. 119 interprets SVBISCALAREM) or as an indication of the productivity of insertion in internal sandhi, in transparency of morphemic boundaries. For an analysis of such forms, see Sampson (2010, p. 55).

The inscriptions of the dendrophori¹²⁰ from Ostia Antica (10) provides interesting elements for the analysis of the insertion in relation to phonosyntactic, phonostylistic and prosodic aspects. Cocilius Hermes, *patronus* of the collegium and also mentioned in other inscriptions (*CIL* 14, 326 and *AE* 1987, 199), is the author of this dedication (*AE* 1987, 198; 256 AD):

(10) *AE* 1987, 198; 256 d.C., Ostia Antica
 C IVL C F COCIL HERMES,
 PATR ET QQVENNALIS PP COL DEN OST,
 SIGNVM M M EX ARGENT
 P III ET ET VI M N D D VT VI
 KAL IVN DIE NATALIS SVI DE
 CLXXX VSVRAS EORVM EPV
 LENTVR ET DISCVMBENTES
SPORTVLAS PARTIANTVR
 QUOT SI OBSERBATVM NON
 ERIT, TVNC S S S HONORATIS
 COLL FABR TIG OST DARI
 VOLO SVB CONDICIONE S S
STIPVLATUS EST COCILIVS
HERMES · ISPEPOND PLEBS.
 DEDICAT IDIB IANVARIS
 MAXIMO ET GLABRIONE.
 COS, OB CVIVS
 D D DEDIT ISPOR II 121

¹²⁰ The *dendrophori* - employed to sell wood and put out fires - were linked to the Magna Mater cult. As is well known, many oriental cults from Asia Minor were spread in Ostia since the end of the Republican Age (Squarciapino, 1962).

¹²¹ *C(aius) Iul(ius) C(ai) fil(ius) Cocil(ius) Hermes,*
patr(onus) et q(uin)quennalis p(er)p(etuus) col(legi) den(drophorum) Ost(iensium),
signum M(atris) M(agnae) ex argent(o)
p(ondo) III et ((semissis)) et ((sestertios)) VI m(ilia) n(ummum) d(ono) d(edit) ut VI
Kal(endas) Iun(ias) die natalis sui de
((denariis)) CLXXX usuras eorum epu=
lentur et discumbentes
sportulas partiantur;
quot si obserbatum non
erit, tunc s(ummas) s(upra) s(criptas) honoratis
coll(egi) fabr(um) tig(nuariorum) Ost(iensium) dari
volo sub condicione s(upra) s(cripta),

This text contains four words beginning with sC. Vowel prosthesis is attested twice (ISPEPONDIT, ISPORTVLAS) in post-consonantal contexts. On the other hand, instances without prosthetic vowel appear at the beginning of the line after a syntactic pause. Interestingly, the matching of three fragmentary slabs (Pellegrino 1987) may show a copy of this dedication. This copy contains some variants, such as SVCCONDICIONE (l. 1.7) instead of SVBCONDICIONE (l.11) and especially HERMESSPEPOND[IT (l. 1.5) instead of HERMES ISPEPOND[IT (l. 13). It could be assumed that the first text shows a tendency towards the definition of morpheme and word boundaries (note the use of the *interpunctum*),¹²² in contrast the second text shows a simplification in internal and external sandhi (note the assimilation and the *scriptio continua*). Prosodic and syntactic considerations must also be taken into account. The sequence *Hermes (i)spepondit* is not syntactically cohesive, as the two words belong to different sentences. The use of the *interpunctum* and the insertion of the prosthetic vowel, with secondary accent, mark the boundary of the sentences. In fact, the proximity of two identical segments /s/ and the iambic structure of the Greek name *Hermes* tended to form a phonological unit, as evidenced by the second variant. Since the *ductus* of the first stone is well finished, we cannot rule out the hypothesis that it shows a higher phonostylistic variety.

From a global examination of the documentation, we can identify two main aspects: on the one hand, the prosthesis appears in servile contexts, often within alloglott communities; on the other hand, the prosthesis is associated with curated texts, generally from after the 3rd century AD, in which the prosthesis is generally placed in a post-consonantal position. What emerges is therefore parallel to the evidence coming from the documentation in Greek-speaking areas: at first, the phenomenon emerges in diastatically marked contexts, and, progressively, it also spreads in more curated texts as a stylistic feature.

stipulatus est Cocilius

Hermes · ispepond(it) plebs.

Dedicat(um) Idib(us) Ianuari(i)s

Maximo et Glabrione.

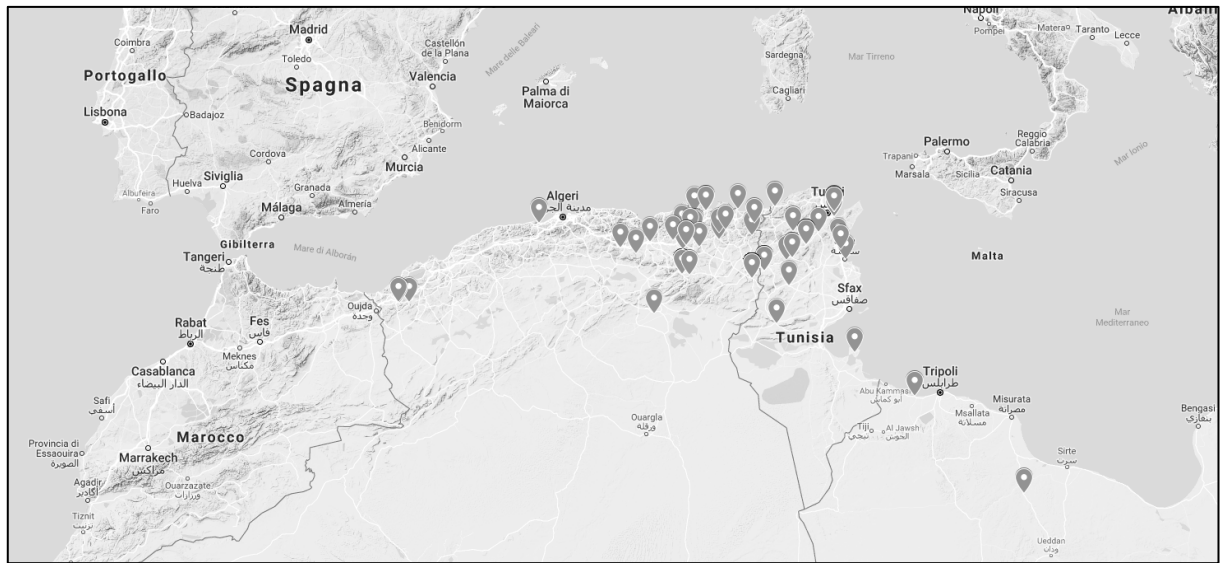
co(n)s(ulibus), ob cuius

d(edicationem) d(ecurionibus) dedit ispor(tulas) ((denarios)) II

¹²² For the use of punctuation in documentary Latin, see especially Wingo (1972) and Schirru (2012).

2.5.2.2 Northwest Africa

MAP 2.3 shows the geographic distribution of documents attesting to prosthesis in North Africa. The highest number of attestations comes from the area facing Sicily and Sardinia, i.e., the area that includes Numidia and Africa Proconsularis, which were very much alive during the Imperial Age from a socio-cultural point of view.



MAP 2.3 Geographical distribution of vowel prosthesis in inscriptions from Roman Africa

From Thugga (*Africa Proconsularis*) come the first attestations of the prosthetic vowel (50-150 AD). These are two funerary inscriptions dedicated to *Clodia Ispes* (MAD 245) and *Haelvia (sic!) Ispes* (MAD 485). As already mentioned (§ 2.5.2.1), the name *Ispes* is particularly widespread in this period, and is attested, as well as in Rome, in the nearby Syracuse

Between the 1st and 3rd centuries AD the attestations are mostly related to anthroponyms, as can be seen in TABLE 2.4.

ISPENDEVS	<i>AE</i> 1993, 1729	50-299 AD	Africa proconsularis – Maktar
ISPICVLV	<i>CIL</i> 8, 2000	50-299 AD	Numidia – Tebessa
ISTERCVLA	<i>CIL</i> 8, 4119	50-299 AD	Numidia – Lambaesis
ISPENICAE	<i>CIL</i> 8, 5245	50-299 AD	Numidia – Ippona
ISTATIA	<i>CIL</i> 8, 6260	50-299 AD	Numidia - Ain Kerma
ISTATIANVS	<i>CIL</i> 8, 7463	50-299 AD	Numidia – Cirta
ISPESINA	<i>CIL</i> 8, 11625	50-299 AD	Africa proconsularis - Haidra

ISPESINA	<i>CIL</i> 8, 16996	50-299 AD	Africa proconsularis - Nattabutum
ISPES	<i>CIL</i> 8, 19876	50-299 AD	Numidia – Skikda
ISTABERIA	<i>CIL</i> 8, 20625	50-299 AD	Mauretania - Kherbet Achir
ISPES	<i>ILAlg</i> -2-1, 380	50-299 AD	Numidia - Skikda
ISPERATVS	<i>ILAlg</i> -2-2, 4497	50-299 AD	Numidia - Mechta Ras el Kef
ISTATILIVS	<i>ILAlg</i> -2-1, 3321	150-199 AD	Numidia - El Meraba
ISPERATVS	<i>AE</i> 2013, 1912	201-300 AD	Africa proconsularis - Haidra

TABLE 2.7 *Personal names with vowel prosthesis in inscriptions from Africa (1st-3rd century AD)*

As for the other parts of speech, the presence of the prosthetic vowel seems particularly related to the post-consonantal environment, especially after the prepositions *per* (11a), *in* (11b) and the conjunction *et* (11c)-(11f).

- (11) a. PER_ISPIRITALLES (*Aud.* 253, Carthago 2nd-3rd c. AD)¹²³
b. IN ISPATIVM (*Aud.* 244, Carthago, 2nd-3rd c. AD, Latin-Greek opisthograph tablet)
c. PER TRANSSEAS HANIMAM ET ISPIRITVM (*Aud.* 220, Carthago 2nd-3rd c. AD)
d. OMNES AMICI ET AMATORES CVM QVIBVS SEMPER BAENE VIXI ET ISTATERE PONDVS LIBRE REDI VALETE (*CIL* 8, 22914, Hadrumetum, 3rd-7th c. AD)
e. D M S [I]N NOMINE PAT[RIS] ET FILI ET ISPIRITVS [S]ANCTI AMEN HA[B]ETDEV (*IC-Maktar* 12,39, Maktar, 1st-3rd c. AD)¹²⁴
f. QVINTILIANA IN PACE VICISIT ANNIS XXXVII MENSES DECE FECIT ISPOSVS BONIFATIVS ET FILIVS (*AE* 2011, 1660, Haidra, 3rd-6th c. AD)

From a peripheral area, located in an oasis along the *limes Tripolitanus*, come the Bu Njem ostraca, dated between 253 and 259 AD. In this widely studied documentary niche, the prosthesis before the verb *scio* is attested twice, cf. (12a) and (12b). In (12c) and (12d), however, two counterexamples of the same verb without the prosthetic vowel are visible.

- (12) a. ISCIAS (*O. Bu Njem* 83)
b. ISCIRE DEBES (*O. Bu Njem* 104)
c. SALVTEM SCIAS (*O. Bu Njem* 89)

¹²³ Si tratta di una *defixio* latino-greca molto interessante, che presenta quasi sistematicamente l'uso di <ti>/<ti>/<ti> per gli indicare gli sviluppi fonetici di [tj] e [dj], cf. <Vincentius> (= *Vincentius*), <die> (= *die*), <Zodorus> (= *Diodorus*).

¹²⁴ Il nome Habetdeus, di cui è attestata anche la forma Abeddeu (*CIL* VIII 23565) è molto diffuso nell'Africa cristiana.

Indeed, one should note that it is likely that in (12c), the final *-/m/* was not pronounced (actually, final *-<m>* omission is overall generalized in the Bu Njem Ostraca; see Adams 1994), and that in (9d) the contiguity of two identical */s/* segments with the formation of a *[is'kias]* sequence might have prevented the realization of vowel prothesis (note that the text is written in inked *scriptio continua*, cf. FIGURE 2.5).



FIGURE 2.5 Detail of O. Bu Njem 101

On the other hand, some later texts show that vowel prothesis extends to all words beginning with *sC*. A clear example is provided by a long text from Ain Fournà, dated between the 5th and 8th centuries AD (cf. Audollent 1951). It is a magical formula inscribed on a lead cross, and is characterized by the presence of many pentalphas. In this text the presence of vowel prostheses is systematic in all word-initial *sC*, regardless of the post-consonantal environment (see for example *ibi ista, ubi istabat, filio ispirito, mici ispromisera*):

- (13) In n(omine) D(omi)ni incipit **iscribtura** [a]d grandine Domne nobis obt[i]me cabtuline ma[xime? ---]RVS / [---]S[---]APIEM faciem Dei ibi **ista istabat** Dei [-]RENV[---] grmnus ibi nata est bitis cum senquine Cristi ibi **ista** et ingira modo ter memora dum quendum fuit granda siccitas et nulla fontis aquem non abebat quid fuisti ad fontem bibam ut bibers aquem linpidam eixit bipera serpis ut solberet te et dixit illi omuncio libera me de aquas malas | de grandine mala ego te libero de aquas malas et de grandine mal ibi **ista** et ingira modo ter memora dum quentu tenet terminus iste defisonis INCAD / BIRACTIMATIS INCAD TAIDA INCAD BALORENV INCAD SENTV MAXIMV INC/AD CAPRARA INCAD PASSA |(de) SECOR INCAD CASTRVM |(de) MAMVNASSEN INCAD BILLA / DE ABDELLA ET DIFATAN [[tum]] ingiret grando ista de nube mala et de messes | de bineas et de orta et poma et de iliceta **ista** et de oliba in n Dni patr | filio | **ispirit** Di sento PX tuo nomen sentu quia baleat quod ego in cento agios agios agios eme eme alleluia allelui[a] In n Dni incipit **iscribtura** a grandine domne lobis obtime cabtuline maxim tu mici **ispromisera** [a]nte faciem Dei ibi **ista** ubi **is[t]abat** dela is et gran[d---] ibi na[ta? est? ---]tus CV/NV[---] **ista** / [e]t ingira(!) [---] / [---]DVN qundu fuit granda siccitas et nulla fontis aquem non abebat quid fuisti ad fontem bibum uti biberes aquam linpidem exit biqera serpis ut solberet te et dixit illi omuncio libera me de aquas malas et de grandine mala ego te libero de aquas malas et de grandine mala ibi **ista** et ingira modo ter memora

dum quantum tenet terminus iste defusionis DE INCAD BIRACTIMATIS ET INDEV DE INCAD TA
IDA DE IN[CAD] BALORENV DE INCAD SENTV MAXIMV DE INCAD B CAPRARA / DE INCAD
POSSA DESECOR INCAD BILLA PISI[--- DE] INCAD CASTRV |(de) MAMVNASSEN DE INCAD
POSSA(?) |(de) ABDE/LLA EB INC[A]D [---]T[-] / cum ingiret grando ista de nube mala | de messes |
de bineas |(et) | ertea / et de poma | de oliba | de iliceta ista in n Dni patr et filio |**ispirito** Dei sento
PX tuo nomen sentu quia baleat quod ego intento agios agios agios emen emen emen alelui[a]

The famous Albertini Tablets, discovered in 1928 on the border between Algeria and Tunisia, 100 km from the Numidian city of Tebessa, date back to the Vandal Era.¹²⁵ In these acts we can note the insertion of the prosthetic vowel in parallel with phenomena of reanalysis affecting words beginning etymologically with *i(n)sC* and *ex(s)C*: see in particular the alternations between STRVMENTVM and ISTRVMENTVM, SCRIBSI and ISCRIBSI. The verb *spondeo* presents various graphic renderings of the prosthesis: in addition to ISPOPONDIT, we also find ESPOPONDIT and EXPOPONDIDERVNT. In ESPOPONDIT the spelling <e> is probably due to a lower realization of the prosthetic vowel due to the presence of [o]. Also dating to the Vandal age is a group of ostraca (*O.Vandal.*) in which we may observe similar processes of reanalysis with hypercorrected spellings of the prosthesis, cf. for example the form EXTIMATVS (*Vandal 2*).

In this regard, a very interesting parallel is provided by the Ravenna Papyri. In *P. Ital.* 2.35 (539 AD) and *P. Ital.* 2.35 (572 AD), vowel prosthesis is attested before the reanalyzed form *strumentum*, and is represented in several ways: HINSTROMENTIS, HISSITRUMENTIS, HISTROMENTIS, ειστρωμεντις, HISTROMENTIS, ESTROMENTIS (cf. Cuzzolin and Sornicola 2018, p. 308).

2.5.2.3 Sardinia

There are only 4 attestations of the prosthetic vowel from Sardinia, of a rather later date (5th-6th century AD). This fact is undoubtedly curious, given that Logudorese Sardinian is one of the varieties in which the prosthetic vowel is productive. In this regard, however, it should be noted, as already pointed out by Lupinu (2000, 2003), that inscriptional data from Sardinia is not representative. By

¹²⁵ There are 45 documents, mainly sales deeds, published in Courtois et Al. (1952) and in Väänänen (1965). These texts offer «a glimpse of the terminology of land division and irrigation current in a remote part of the African desert» (Adams 2007, p. 549), and present many orthographic and morphosyntactic deviations.

calculating the number of words which, for the period 1st-8th AD, begin with sC, we obtain the following data:

- #<sc> (x18)
- #<st> (x 50)
- #<sp> (x 27)

Furthermore, both the word *spiritus* and anthroponyms formed from *spes* are attested only 5 times. There is no concrete basis for collecting a relevant number of forms with prosthetic vowels, and any hypothesis is likely to be without any assertiveness.

In (14) it is possible to see the forms presenting the prosthetic vowel:

(14)	ISPIRITO	CIL 10, 7551	5th c. AD	Pula
	ISPORTE[L]A	ILSard-01, 368	6th c. AD	unknown
	ISTEFANVS	AE 1971, 135	6th c. AD	Cagliari
	ISCRIBONISSA	Cornus 72	6th c. AD	Cornus

Lupinu (2000, 2003) has dwelt extensively and comprehensively on analyzing these forms. By operating on an onomastic, prosopographic, and archeological basis, the scholar connects the epigraphic evidence from Sardinia to the African environment, more precisely to the Christians' communities exiled to Sardinia in the Vandalic Age (456-534 AD). This analysis is undoubtedly impeccable. However, in our opinion, the scarcity of documentation does not allow us to immediately conclude that the phenomenon penetrated Sardinia from Africa only at the time of the arrival of the community of exiled bishops.

2.5.2.4 Iberian Peninsula

The new data allow a different evaluation of the spread of the phenomenon in the Iberian Peninsula. In relative terms, vowel prosthesis is quite attested, since the Early Imperial period, as in most of the Roman Empire.

A preliminary analysis seems to show that vowel prosthesis is attested in both post-consonantal and post-vocalic environments. The earliest attestations are provided by a metrical epitaph from Valencia De Don Juan (*IRP Leon* 243, 1st-3rd century AD). This text is not well-finished and is characterized by many substandard formulas (see, e.g., MISERISSIMI and AVEVAMVS), as well as

misspellings. The insertion appears in the noun *spes* (IN TE ISPE) and the verb ABISTVLERVNT). Other forms - mainly personal names - are attested in later or hardly datable inscriptions.

Another interesting inscription, datable between the 5th and 8th centuries, comes from Armenteros. It is a prayer containing a part of *Psalm* 15, in Visigothic cursive (cf. Velásquez Sorano 1986, 1989, 2001). The prosthesis in IN TE ISPERABI and IN ISPE does not seem to depend on the post-consonantal context. Note also the anaptyxis in DESTIRIS (= *destris*).

Another inscription from Diego Alvaro (*Piz* V 29) belongs to the Visigoth period, in which the prosthesis in the verb *spendo* is systematic (15):

(15) *Piz*V 29

NOTITIA DE VER[VELLAS] COT ISPENSAS SVNT ERA{RA}RIO DEDI VNA PRO PEDVLO CO STATOR ISPENDIT
 VERVICES II PRO LAVRO DEDI UNA TRASEM[UNDU]S DVOS OVES DVA[S ...]ES [NOTITIA ...]ARIO COT
 ISPENSUM EST DE SEVERIAN[[E]]O LEVAVERVNT XIII ISPENDIMVS II DEM[V]M COT IIII /

A Greek inscription from Myrtilis, dating back to the 6th century AD, contains the form ἐσταμινιάς. As Consani (1999, p. 84) highlights, this develops from a Latin basis (*i*)*staminia* which has been integrated into Greek morphology (for a parallel example, see εἰσταβλᾶρις < σταβλᾶρι(ο)ς < *stab(u)larius* from Pisaurum, *SEG* XL 849, 7th c. AD).

2.6 Synopsis

Textual evidence suggests that the phenomenon was spread like wildfire throughout the Roman Empire from its earliest attestations, both in Substandard Latin and Koine Greek. Therefore, the main questions to consider are: i. whether such a phenomenon has a polygenetic or monogenetic origin; ii. which language - Latin or Greek - is responsible for its appearance.

The realization of the prosthetic vowel concerns three main factors: i. the syllable structure; b. phonosyntax; c. the segmental nature of /s/. Essentially, vowel insertion is an euphonic strategy to convert a C₁C₂(C₃) onset cluster with C₁ = /s/ into a more optimal one. It can be assumed that initially, the actuation of vowel prosthesis was a transitional phonetic process related to the speech chain and the speaker's speed and morpho-lexical awareness of the phonological form of the word.

For such a phenomenon to be co-opted into the grapho-phonological levels, certain conditions are required that also involve sociolinguistic aspects. Looking at the data from a diachronic point of view, it is quite evident that at first, the insertion is sporadic and emerges in polygenetic points of interference where the graphemic and phonological levels are weaker, i.e., in borrowings (especially with heterography) and in words whose phonological structure is particularly permeable to the development of the epenthesis.

The initial episodic and sporadic nature of this process is evident if we examine the very first attestation of this phenomenon, which has not been considered here because it is extraneous to the diasystem of the Greco-Roman Koine of the Imperial Age, namely <TOEΙΣTH/ΦANON> (= τὸν εἰστέφανον IG XIV 654), inscribed on a gold crown dated around 300 BC. This delicate artifact was discovered within a tomb at the Serra Lustrante site, into which the Magno-Greek culture was penetrating. This text has been carefully studied by Consani (1995, 1996, 1999, 2006), who has pointed out that it was written by an Oscan L1 speaker with Greek L2. Therefore, linguistic interference sheds light on an episodic fact that will further surface during the imperial period in the Latin-Greek diasystem.

Approaching the examined documentary framework, we can see that the first attestations concern non-native elements: the vowel prosthesis initially appears in the personal name *Smyrna* (1st century BC). In this case, the coincidence of two conditions, namely a foreign name that does not fit into the Latin phonological system because of the group /sm/ and the spread of this name due to social factors, favored the appearance of the vowel prosthesis. Slightly later (1st-2nd century AD), in Greek-speaking areas, phonetic spellings surface in words referring to military life, trades, and everyday vocabulary (ἰστρατιώτης, ἰσ[το]πενδίων, ἰστατήρα, εἰσκότλα, εἰσπύλλα). On the other hand, the Latin words that seem to be permeable by the first century AD to the development of vowel prosthesis are *spes* and *scis* (if the reading of CEL 79 is correct). The monosyllabic structure may have favored the syllabicity of /s/, with the word's subsequent metrical restructuring. In the case of *spes*, the insertion is often simultaneous with a metaplasm of inflection (*Ispes*, *-tis*; *Ispes*, *-nis*). In this first phase of surfacing in linguistic inference contexts, the phenomenon is not entirely systemic but confined to social niches. Low orthographic competence allows phonetic phenomena of speech to surface.

Starting from the 3rd century AD, from some of these polygenetic sources, there is a progressive penetration from below, even at a systemic level. The data clearly shows the diffusion of the process in Rome, Asia Minor, and Northwest Africa, i.e., the areas with the most remarkable demographic consistency and cultural vivacity: contact between these areas determined the circulation of people (and anthroponyms) and religious doctrines (the major episcopates were located there), leading to the definition of a Koine feature, further favored, for reasons of lexical frequency, by Christianity and, for structural reasons, by the previously seen phenomena of aphaeresis and reanalysis.¹²⁶ Several shreds of evidence from Rome and Asia Minor suggest that the process was regulated according to prosodic and phonotactic constraints; on the other hand, Northwest Africa and the Iberian Peninsula tend to extend the vowel prosthesis in all the environments.

From the 5th-6th century AD, an isogloss linking northwestern Africa, Sardinia, and the Iberian Peninsula is evident, foreshadowing the Romance developments, as can be seen in MAP 2.4. It is likely that the African area was one of the points of most significant innovation and diffusion of the process, especially in Sardinia and the Iberian Peninsula (see Pellegrini 1978; Fanciullo 1992; Lorenzetti and Schirru 2010). The particular productivity of this process in Late Western Latin is further corroborated by the *Folium Parisinum*, in which the application of the phonological process by a Latin speaker learning Greek is systematic.

¹²⁶ Nevertheless, a direct connection between vowel prosthesis and Christianity, highlighted by Schuchardt and Prinz, might have been overestimated for two main reasons. As a matter of fact, Christian Rome inscriptions are particularly abundant around the 3rd – 5th centuries AD and it is just in this period that vowel prosthesis appears to be more documented and phonologically productive, being nevertheless attested in non-Christian documents as well. Secondly, many lexemes involved in the definition of Christian lexicon and onomastics begin in fact with sC, such as *spes* (and the personal names *Spesindeus*, *Spesina* etc.), *spiritus*, *Sterculus*, *Stratonice*, *Stephanus* etc. However, these lexemes relate to Christianity only from the 3rd century AD, when theology refunctionalized their meanings: personal names such as *Spes* and *Stephanus* and nouns such as *spiritus*, for instance, are attested at the beginning in non-Christian documents. *Spes* is documented with vowel prosthesis since the 1st-2nd century AD (*CIL* X 754) whereas the first attestation in Christian inscriptions dates back the second half of the 3rd century AD (*ICUR* VIII 22391). Similarly, the name *Stephanus* became a Christian one around the 3rd century AD, due to both the cult of the protomartyr (KAJANTO, 1963: 97) and the assumption of this name by an influent Bishop of Rome (Pope Stephanus I, 254-257). On the other hand, the fact that Christian lexicon begun by chance with sC and that Christianity became from the 4th century the official religion could have feed the process in terms of lexical frequency.



MAP 2.4 Distribution of the forms with vowel prosthesis (5th-7th century AD)

It is probable that in the Iberian Peninsula, the process was so generalized to all word-initial sC that the underlying representation of the word had changed, as might be inferred from the two paraetymologies provided by Isidore, in which the words *scurra* and *scarus* are paired with *esca*.

- (11) a. *iscurra* vocatur, quia causa *escae* quempiam cosectetur (10, 152)
- b. *escarus* dicuts eo, quod *escam* solus ruminare perhibetur (12, 6, 30)

An important final question to dwell on is which language, Latin or Greek, was responsible for triggering this process. On the one hand, the very first attestation appears in Greek; on the other hand, Latin examples are extensive and continuous. It can be assumed that Latin and Greek, which have always been in close contact, had the same predisposing factors in developing the vocalic prosthesis, both for structural affinity and for the crosslinguistic nature of the process itself. On the other hand, an examination of the quantitative data, chronology, and analysis of the linguistic material suggest that in numerous cases, the prosthesis attested in the Greek documentation is attributable to Latin phonetic spellings, thus offering one of the few pieces of evidence of the circulation of Latin in the eastern provinces.

Chapter 3

Phonological and philological issues in consonant gemination and *geminatio litterarum*

The present chapter aims to focus on some issues concerning consonant gemination in Latin. This subject, as is known, has garnered much attention, notably because of the expressive, socio-stylistic and sociolinguistic value ascribed to the so-called “spontaneous” gemination (see Graur, 1929; Giannini & Marotta 1989; Benedetti 1996; Benedetti & Marotta 2014;). Latin primary sources, however, programmatically ruled out by Graur (1929) and Giannini and Marotta (1989)’s analyses, have not been deeply scrutinized so far, with the exception of widely known phenomena recorded in the traditional handbooks of Latin phonology, some of which presenting detailed sections, (e.g., Lindsay 1894, pp. 108-119; Seelmann 1885, pp. 109-151; Leumann 1977, pp. 181ff) and recent studies devoted to specific corpora (see Cotugno & Marotta 2017, on the gemination of /s/ within the corpus Vindolandense).

Dealing with consonant gemination, as evidenced by Latin primary sources, raises several issues in many respects. This was already anticipated in CHAPTER 1, and the following introductory remarks will stress the criteria adopted for the planning of the present study, i.e., which phenomena have been considered worthy of further investigation and which methodologies have been adopted for their analysis.

It is worth touching upon the levels of complexity involving geminated consonants. The issues, briefly listed below, concern different aspects: (1) general problems of phonetics and theoretical phonology; (2) language-specific issues, at both the philological and phonological levels, concerning: a. consonantal quantity in Latin and its relation with vocalic quantity, as well as the heterogeneity of the evolutionary processes that have operate since the reconstructed phase till later and documented developments, leading to the formation of geminates in Latin phonological inventory; b. with specific reference to Latin primary sources, the inconsistency in the notation of geminated consonants; c. as for the Latin/Romance phylogenetic continuity, the issue concerning the evolutionary processes Latin geminates underwent and the relation with lenition in the Western domain.

We shall briefly present the aforementioned issues. A more detailed account on consonant gemination in Latin will be presented in § 3.1.

(1) **General aspects.** The phonological feature distinguishing segments in relation to their length is phonological quantity, belonging to the suprasegmental prosodic features.¹²⁷ Typological evidence shows that consonant quantity is uncommon among the world's languages as compared to vowel quantity (Laver 1994 p. 436) and that the phonetic realization¹²⁸ as well as the phonological patterning¹²⁹ of long consonants vary greatly in the languages showing this feature (cf. Blevins 2004; Kubozono 2017).

The nature of geminated consonants was not fully investigated in pre-autosegmental studies. In fact, in the first generative theory (Chomsky & Halle 1968) the distinction between long and short segments was represented, as is known, by means of the feature [$\pm$ long]. Nonetheless, this representation did not account for some phenomena involving geminates, which, in some cases, notably as for syllable weight, can behave as a sequence of two different consonants (cf. Leben 1980). Non-linear phonology, with the introduction of multilinear models (cf., among others, Kaye 1989 p. 125ff.), allowed the representation of segmental length independently from the articulatory gestures: geminated consonants, though realized by means of a single gestural component, are linked to two slots of the skeletal tier; whereas complex segments produced via different articulatory gestures, such

¹²⁷ According to the definition by Jakobson & Halle (1956, p. 22) «quantity feature contrasts a short phoneme with the long phonemes of other syllables in the same sequence» (cf. also Jakobson 1966, pp. 480ff).

¹²⁸ The main physical correlate of duration is time (Jakobson & Halle 1956, p. 19; Lehiste 1970; Lahiri & Hankamer 1988), with different segmental duration from one language to another (for instance, the ratio between geminates and singletons is 3:1 in Japanese, and 1.8:1 in Italian (Idemaru & Guion 2008)) and different articulatory gesture depending on the segment involved (the gemination of fricatives, approximants, nasals, laterals and vibrants is produced by means of a temporary lengthening; conversely, the gemination of stops and affricates implies a delay of the explosion; nonetheless, the question whether geminated plosives are produced via a unique articulatory gesture or two different gestures has raised some problems (cf. Ladefoged & Maddieson 1996, pp. 91-95 with references): however, some researches carried out by means of x-ray microbeam (Smith 1992, 1995) demonstrated that word-medial position geminates in Japanese and Italian do not show neither double peaks in the articulatory movement of the lips as for bilabial geminated stops nor double peaks in the tongue blade movements for alveolar geminated stops). Additionally, consonant length may involve in some languages also other acoustic cues, such as pitch and intensity (Ridouane 2010; Kawahara, 2015).

¹²⁹ Some languages, such as Italian, oppose consonantal but not vocalic segments in relation to their duration, whereas other languages, such as Hungarian, Finnish and Japanese, oppose both consonantal and vocalic segments. More rarely, there are more than two different degrees of phonological consonantal length, such as in Estonian and Sami (Engstrand, 1987; Lehiste, 1966), showing the opposition between short, long and hyperlong ("Grade III") consonants. Languages also differ as for the distributional patterning of contrastive consonant length: some languages shorten pregerminated vowels (Hindi, Bengali), others admit a geminated consonant after a long vowel (Japanese) or a diphthong (Finnish); moreover, while most of languages contrast long consonants in word-medial position (Japanese, Italian), a small group (Bengali, Berber) contrast long consonant in word-initial as well as in word-final position (Kubozono 2017, with references). However, in some Italo-Romance varieties there is contrastive consonantal length in word-initial position as well, such as in the dialect of Altamura (Loporcaro 1988; Loporcaro & Bertinetto 1999).

as affricates, but behaving like single segments from a distributional point of view, are linked only to a skeleton slot (cf. Broselow 1996, with references). The skeletal tier is referred to as “x-tier” or “length tier” or “CV-tier” and is the commonest representation of consonantal length since the 1980s (cf. McCarthy 1979, 1981; Clements & Kayser 1983; Hayes 1986). Such a representation accounts for some phenomena involving geminates, since in some phonological processes they behave like separate segments, whereas in others like a single unit. In fact, geminated consonants are generally ambisyllabic, and the first slot is the coda of the preceding syllable. Conversely, geminated consonants are reluctant to insertion and phonological processes involving only one element of the sequence (integrity and inalterability principles, see Kenstowicz & Pyle, 1973; although the inalterability principle is sometimes not complied with, see Schirru 2008). Yet, this model was criticized by other scholars, who provided different representations (see Davis 2011a, 2011b with references). Hayes (1989) points out that the prosodic tier is not directly linked to the segmental tier, but to the moraic one. In fact, the x tier would not be sufficient to represent phenomena such as compensatory lengthening, because it does not identify which segment would be responsible for it.

(2) Language-specific issues

- a. Latin had both consonantal and vocalic contrastive length, similar to other modern languages such as Finnish or Hungarian. Contrastive consonantal length in Latin operates word-internally. Some minimal pairs are shown below (cf. Weiss 2009, p. 60; Sen 2015, p. 52):

valēs ‘you are well’ ~ *vallēs* ‘valley’

erat ‘was’ ~ *errat* ‘wanders’

canam ‘I will sing’ ~ *cannam* ‘reed’ ACC. SG.

operīrī ‘to be covered’ ~ *opperīrī* ‘to wait’

ager ‘field’ ~ *agger* ‘earthwork’

catus ‘clever’ ~ *cattus* ‘cat’

anus ‘old woman’ ~ *annus* ‘year’

gero ‘I carry’ ~ *gerro* ‘idler’

Contrastive consonant length is further evidenced by the fact that in Classical Latin long vowels could be followed by long consonants, e.g. *mille*, *corōlla*, *stēlla*. This is different from Standard Italian, in which a vowel followed by a geminated consonant is shortened (cf. Marotta 2016).

Latin long consonants result from several processes, such as assimilation (mainly at morphemic boundary), characterizing Latin phonology throughout its history, productive morphological

processes involving affixes with geminates (such as diminutive and the superlative suffixes), gemination of consonant and glide clusters, intramorphemic “spontaneous” gemination, related to different processes (e.g., expressive lengthening and lengthening under stress). All these processes will be detailed in § 3.1.

The variety of phonological processes leading to geminated consonants in the Latin phonological inventory parallels the evolutionary path of most of the IE languages,¹³⁰ in which gemination across morphemic boundary emerges as a consequence of processes such as the reanalysis of two identical consonants adjoining one another, assimilation (since Old Hittite),¹³¹ gemination of consonant and glide sequences (Ancient Greek, Sabellian languages, West-Germanic)¹³² and prosodic processes (Vedic, Tocharian).¹³³ This represents a general drift towards the opacification of morphemic

¹³⁰ A series of phonological processes reconstructed for PIE suggests that consonant gemination was avoided when two identical consonants adjoined one another in the combination of morphemes (Avoidance of Geminated Consonants, cf. Kobayashi 2004 and Byrd 2010, 2015):

- double dental rule (Mayrhofer 1986, pp. 110-111) Ø → [s] / T_TV. When two dental stops adjoin one another in morphemic boundary and precede a vowel, a sibilant (their continuant counterpart) was inserted. See e.g. **uid-tó-* ‘seen, known’ > **uitstó-* > Germ. *ge-wiss*, Gk. ᾔστος;
- *métron* rule (Saussure 1885, pp. 246ff) (Saussure, 1885) T → Ø / VT_RV or V_TRV. When two identical consonants adjoin one another in morphemic boundaries before a sonorant and a vowel, one of the two consonants is deleted. See e.g. PIE **sed-tlo-* ‘instrument of sitting’ > **sedlo-* > PGm. **setlo-* (Goth. *sitls*, OE *setl*, OHG *sezal*), Lat. *sella* (< **sed-la-*), Gaul. *sedlom*.
- VR₁ → [V] / _R₁# When a short vowel is followed by a sonorant and another identical sonorant is adjoined in morphemic boundary in word-final position, one sonorant is dropped, with the following compensatory lengthening of the short vowel. See e.g. PIE **dom-m* > **dōm* ‘house’ (ACC. SG.) (cf. Arm. *tum* < **dōm*).
- R₁ → Ø / V_R₁V. When a sonorant is followed by another sonorant and a vowel in morphemic boundary, the first sonorant is dropped. See e.g. PIE **stomh₁-m_h* > **stomm_h* > **stom_h* > Gk. στόμα
- s → Ø / V_SV. When a sibilant is followed in morphemic boundary by another sibilant and a vowel, the first sibilant is dropped. Cf. PIE **h₂és-si* ‘you are’ > **h₂ési* (Sk. *ási*, Gk. εἶ, but HomGk. and Aeol. ἐσσι).
- Skt. /s/ → [t] / _[-s-] In Sanskrit, when a root-final /s/ preceded the /s/ suffix of the future and aorist, the /s/ of the root became a [t] (via the dissociation from the feature [+cont]). See e.g. *vas-* ‘dress oneself’ + *-sya-* (future) → *vat-sya*; *vas-* ‘id’ + *-s-* (aorist) → *a-vát-s*
- Skt /b/ → [d] / _ [b^h]. In Sanskrit, when a root-final labial stop preceded the instrumental plural case ending *-bhis*, that stop is realized as a dental. For instance *ap-* ‘water’ + *-bhis* (INSTR.PL.) → *abbhis* → *adbhis*.

¹³¹ The issue of consonant gemination among the Anatolian languages is controversial because of the use of cuneiform script. However, in OHitt. true geminates are attested as a result of assimilatory processes in clitic boundaries (*nm* > *mm*, *nš* > *šš*), cf. Hoffner, Melchert (2008, pp. 43-44).

¹³² Cf. Sihler (1995, pp. 223-224) for Ancient Greek; Zair (2016, pp. 112 ff.) for Oscan; Fulk (2018, pp. 126-129) for West-Germanic.

¹³³ Cf. Kobayashi (2004) for Late Vedic and Malzahn (2010, pp. 20-21) for Tocharian.

boundaries.¹³⁴ These processes are crosslinguistic, as is evidenced by the typological survey carried out by Blevins (2004, 2005) on a corpus of 73 languages belonging to 22 different linguistic families.¹³⁵

- b. The notation of consonant quantity by means of the doubling¹³⁶ of the grapheme arises in the Latin orthographic system around the 2nd – 1st century BC. The introduction of this orthographic innovation is attributed by the tradition to the poet Ennius (239-169 BC), cf. Leumann (1977, pp. 14-15), Niedermann (1953[1931], pp. 112-113). The first instance of *geminatio consonantium* is commonly dated back to 189 BC in Aemilius Paulus' decree (*CIL* I² 614), though in this text geminated consonants are not written systematically and until the end of the 2nd century BC the *geminatio consonantium* is not applied with consistency (cf. e.g., *CIL* I², 584, i.e. the *lex Minucia*, dated to 17 BC, in which geminated consonants are not written). Nevertheless, some sporadic instances of *geminatae* do occur in early inscriptions, around the 3rd century BC, as well (cf. Wallace 2011, p. 18; Mancini 2019a, p. 44). Therefore, the presence vs. absence of double letters as evidenced by inscriptions must be evaluated carefully, notably as for inscriptions dated earlier than the 1st century BC.
 - c. Among the Romance languages, consonant length is maintained only among the Italian dialects under the La Spezia-Rimini line¹³⁷ – with transitional characteristics in the Tuscan-Emilian Apennines areas¹³⁸ – and in Sardinian dialects as well.
- Leaving aside the issue of syntactic doubling (cf. Loporcaro 1997), these varieties show a patterning of word-internal geminated consonants resulting from heterogeneous processes, some of which

¹³⁴ Roots with tautomorphemic geminated consonants are not reconstructed for PIE. The only exception is represented by some *Lallwörter* and hypocoristics, such as Gk. ἄττα, Lt. *atta*, Goth. *atta*, Hitt. *attas* 'daddy', Sk. *akkā* 'mommy' (with maybe parallels in the hypocoristics Gk. Ἀκκώ and Lt. *Acca* (*Larentia*)); Gk. ἄππα 'daddy'; Gk. Βίστρος < Βίο-τέλης, Κλέομμυς < Κλεο-μένης; OHG. *Sicco* < *Sigbert*), cf. Meillet (1934, p. 131), Kent (1953, p. 25), Mayrhofer (1986, pp. 110-112; 120), Szemerényi (1996, pp. 109-110), Byrd (2010). These formations belong to the *langue expressif* and are to be put in relation with a conventional structure involving morphological redoublement, gemination, simplified syllabic structure.

¹³⁵ Blevins classifies the following evolutionary processes leading to geminated consonants: 1. Assimilation in consonant clusters; 2. Assimilation in consonant + vowel/glide clusters; 3. Vowel syncope between identical consonants; 4. Lengthening under stress; 5. Expressive lengthening; 6. Boundary lengthening; 7. Reinterpretation of an obstruent voicing contrast; 8. Reanalysis of identical C-C sequences.

¹³⁶ The Latin verb *geminare*, as well as the noun *geminatio*, is adopted iconically to indicate the use of doubling letters to represent long segments, phonologically distinctive (cf. TLL, vol. VI 2, p. 1736, lin. 78 - p. 1740, lin. 24 and TLL, vol. VI 2, p. 1736, lin. 22 - p. 1736, lin. 66).

¹³⁷ With some exceptions represented by some conservative niches in the Grisons, especially in the town of Soglio, where consonant gemination is still preserved (cf. Loporcaro, Paciaroni, & Schmid 2005).

¹³⁸ For instance, the dialect of Lizzano in Belvedere (BO) still preserves geminated consonants (cf. Loporcaro *et alii* 2006), whereas the dialect of Lagacci (PT) shows a process of degemination affecting only protonic geminated consonants (e.g. *capèllo* (It. *cappello*) 'hat' and *galina* (It. *gallina*) 'chicken'), whereas post-tonic geminated consonants are still preserved (Filipponio, Pisano 2014).

directly continue phenomena already documented in Latin. The sources of geminated consonants in these areas can be summarized as follows:

- i. Continuation of Latin inherited geminated consonants
- ii. Contact assimilation
- iii. Gemination in proparoxytones after primary accent
- iv. Gemination after secondary accent
- v. Geminations before sonorants /r/, /j/ (< /l/, /ě/, /ĩ/) and /w/
- vi. Gemination of intervocalic /b/, /d̃/ and /m/ (Central and Southern Italian dialects)
- vii. Secondary juxtapositions of different words

Latin inherited geminated consonants (i) may have undergone some shifts in place or manner of articulation in some varieties but preserve length.¹³⁹

Assimilation (mainly regressive) (ii) forms new geminated consonants, e.g., /pt/ > /tt/ and /kt/ > /tt/ (It. *sette* < Lt. *septem*, It. *otto* < Lat. *otto*, already attested in Latin, see CHAPTER 4), /mn/ > /nn/ (It. *donna* < Lt. *dom(ĭ)na*), /gd/ > /dd/ (It. *frédde* < Lt. *frig(ĭ)dum*), /nd/ > /nn/ and /mb/ > /mm/ (in Central and Southern dialects, Rom. *monno*, It. *mondo*; Rom. *piommo*, It. *piombo*) (cf. Rohlfs 1966, §§ 240-241 for a more detailed list).

Gemination in proparoxytones after primary accent (e.g. It. *femmina* < Lat. *femina*, It. *macchina* < Lat. *machina*) (iii) is quite widespread in Standard Italian lexicon (cf. the scrutiny by De Lollis 1884) and in Central and Southern areas.¹⁴⁰ Such a tendency is already documented in Latin (e.g. ‘*camara non cammara*’ in the *Appendix Probi*), and the lexicon of Latin geminates by Giannini & Marotta (1989) as well as the data, which will be discussed later, show further examples.

Quadrissylic words may show a tendency towards the gemination of the consonant after secondary accent (iv), e.g. *seppellire*, *accademia*, *ubbidire*, *Catterina* (cf. D'Ovidio 1997; Rohlfs 1966 §§ 228-232).

The gemination before /r/, /j/ (< /l/, /ě/, /ĩ/) and /w/ (v), which is attested in Latin as well, is due to processes of syllabic reorganization (cf. Vennemann 1988, Loporcaro 201b). The outcomes vary according to the segments involved and the internal developments of each dialect. The result is

¹³⁹ The only exception is represented by the degemination of intervocalic /rr/ (e.g. /'tera/ < /'terra/), which is characteristic of Romanesco and Southern Latium dialects, but is widespread in some Tuscan varieties (including Corsican), in the Marches and in Umbria as well (cf. Rohlfs 1966, § 238).

¹⁴⁰ Cf. for instance the forms *gennero*, *cennere*, *meddico*, *semmola*, *stommaco*, *cammera*, *commodo* (Rohlfs 1966 § 228).

generally gemination at a first stage (e.g. It. *rabbia* < Lt. *rabia*; It. *fabbro* < Lt. *fabrum*; It. *acqua* < Lt. *aqua* (cf. 'aqua non acqua' in the *Appendix Probi*), It. *doppio* < Lt. *duplum*), with following processes of palatalization and/or affrication, with the formation of some inherently long segments in pre-vocalic position such as /ʎ:/ (It. *figlio* < Lt. *filium*), /jɲ:/ (It. *bagno* < Lt. *ba(l)neum* (cf. βανιατορ in Pap. Meinersmann 9)), /tʃs/ (It. *vézzo* < Lat. *vitium*), /ddz/ (It. *razzo* < Lt. *radium*), /ddʒ/ (It. *raggio* < Lat. *radium*), /tʃf/ (It. *faccio* < Lat. *facio*).¹⁴¹

Regional pronunciation of Central and Southern dialects speakers show a systematic gemination of /b/ and /dʒ/ in intervocalic position, e.g. /rob'berta/, /a'daddʒo/ (**vi**). Gemination of intervocalic /m/ is very common among the Southern dialects, especially in Neapolitan, e.g., *limma*, *fummo*, *famme*, *semmenta* (cf. Ledgeway 2009, pp. 88-89), but is documented in Tuscan as well (cf. Rohlfs 1966, § 222).

Finally (**vii**), geminated consonants may have been triggered by overlapping and analogy, e.g., *bottega* (cf. *botte*), *pannocchia* (cf. *panno*), *colluttorio* (cf. *colluttazione*), *cannottiera* (cf. *canna*). Similar phenomena characterize the lexicon of Latin geminates as well, and this is one of the main arguments against the elaboration of general rules (see below § 3.1).

Conversely, among the other Romance varieties, Latin geminates underwent degemination, in a chain shift involving lenition (i.e., voicing and/or frication) in the Western Romance domain, whereas Daco-Romance displays only degemination and not lenition. The structural relationship and the relative chronology of lenition and degemination is highly debated. According to the traditional model by Martinet (1955), degemination would have caused lenition in the Western Romance varieties. Latin geminated voiceless consonants would have undergone degemination (/CC/ > /C/). The resulting degeminated consonants would have thus clashed with the original short consonants, which would have undergone voicing. The resulting voiced consonants, clashing with the original voiced ones, would have caused a further lenition of the original voiced consonants, which would have undergone frication (vanishing at a further stage in some varieties). This process would have been triggered in the Western Romance languages by the Celtic lenition (Martinet 1952). The push chain is shown below:

¹⁴¹ However, the geminates /ddʒ/ and /tʃf/ are not inherently long in Standard Italian, since show contrastive opposition with the singleton counterpart, e.g. /'mɔdʒo/ ~ /'mɔddʒo/ and /'kafʃo/ ~ /'kaffʃo/.

- i. $/tt/ > /t/_2$
 $/t/_1 > /d/_2$
 $/d/_1 > /ð/ (> \emptyset)$
- ii. $/pp/ > /p/_2$
 $/p/_1 >$
 $/b/_2$
 $/b/_1 > /β/ (> \emptyset)$
- iii. $/kk/ > /k/_2$
 $/k/_1 >$
 $/g/_2$
 $/g/_1 > /ɣ/ (> \emptyset)$

Nonetheless, this reconstruction is not widely agreed upon. Some scholars maintain it is more conceivable that lenition pulled degemination, since lenition seems to operate much earlier than degemination. As Loporcaro (2011b, pp. 151-153) points out, epigraphic documents would attest lenition as early as the 1st century AD, whereas degemination in the Western Romance domain would be attested considerably later, around the 8th century AD in Gaul and not before the 11th century AD in Spain. Additionally, no evidence is found in Late Latin inscriptions from Spain of degemination (cf. Tantimonaco 2020). From a structural perspective, degeminated consonants would have thus occupied the distributional patterning of original short consonants which had undergone lenition, with the shift from a quantitative opposition to a qualitative one, thus paralleling the restructuring of vowel system (Weinrich 1958, pp. 145-146; Lausberg 1971, p. 341). Such arguments are however controversial, since lenition as documented by inscriptions is sporadic, and the evidence of written texts for degemination is not always reliable.

In the following sections, we shall present some relevant phenomena emerging from data collection. The analysis has been carried out with different methodologies, depending on the nature of the examined phenomenon. In general, a qualitative rather than quantitative criterion will be followed. After having presented the traditional issues concerning consonant gemination in Latin (§ 3.1), we shall focus on the following aspects:

- Section § 3.2 will dwell on the emerging of the double spelling in Latin orthography by presenting quantitative data of a synchronic cut of inscriptions dated between the 3rd and 2nd century BC. Then, the first instances of *geminatae* in Latin inscriptions will be examined in detail: notably, it will be

stressed the polygenetic nature of the first attestations of double consonants, emerging in social *milieux* of interference with Greek and Oscan. The emergence of other iconic devices for signaling syllable weight will be discussed as well.

- Section § 3.3 is focused on the gemination of preconsonantal <s>, an orthographic habit which, though recorded in traditional grammars (e.g., Leumann, 1977 § 223) and included in the analysis by Cotugno & Marotta (2017), requires a further investigation of its grapho-phonological and socio-graphic values. The analysis of this phenomenon is relevant to the previously discussed phenomenon of vowel prosthesis (cf. CHAPTER 2). Indeed, the gemination of preconsonantal <s> would hint at the ambisyllabic nature of /s/ in this context. In particular, it will be stressed the importance of the influence of the Greek model in this orthographic habit – which can be noticed also in some Oscan inscriptions – with an interesting discontinuity between the earliest attestations, in which gemination is generally related to official texts, and later texts, in which this phenomenon turns out to be much more attested and widespread in different text types because of the massive introduction of Greek personal names.
- Section § 3.4 is concerned with the issue of the *littera* rule. Some traditional, though controversial, lemmata will be re-examined: a series of clues may allow to ascertain some issues related to the pairs *littera* ~ *littera*, **cipus* ~ *cippus*, *Iupiter* ~ *Iuppiter* (mainly concerning the lack of evidence of vowel quantity). Eventually, a tentative analysis of a new lemma, i.e. the *gentilium* *Lucius* / *Lucceius*, will be carried out: despite concerning onomastic material – always requiring a careful evaluation – this onomastic type would seem to match the framework proposed by Benedetti (1996) and Benedetti & Marotta (2014) on the relation between monophthongization and gemination. The scrutiny of epigraphic sources, which would document the stages of these processes, will permit a detailed and sociolinguistic analysis.
- Section § 3.5 deals with some phonological processes arising from the examined material, i.e. “spontaneous” intervocalic gemination and gemination before /r/ and /j/. Data allow to provide detailed documentary evidence of some phenomena continued among the Romance languages, but also to trace other phenomena without Romance continuity. The exposition is arranged according to the segment involved and to the phonotactic context in which a process of gemination is documented.

3.1 Consonant gemination in Latin: studies and problems

As outlined before, Latin phonological system distinguished between short and long consonants, as well as between short and long vowels. Latin geminated consonants are generally classified into two categories, i.e., etymological geminates (resulting from (morpho)phonological processes characterizing Latin throughout its history) and “spontaneous” geminates, commonly divided into expressive geminates and geminates resulting from the *littera*-rule.

A brief outline of the processes involved in consonant gemination will be introduced. After having presented a general apodictic account on etymological gemination (§ 3.1.1), expressive gemination and the *littera*-rule will be problematized according to the history of the studies (§§ 3.1.2 and 3.1.3). Some open questions – especially as far as the *littera*-rule is concerned – will be further examined in § 3.3.

3.1.1 Etymological gemination

In Latin there are several examples of geminated consonants deriving from total assimilation, which could be represented through the following basic segmental rules:

$$A \rightarrow B/_B$$
$$A \rightarrow B/ B_$$

The first one refers to regressive assimilation, which is more frequent in Latin. The second is progressive assimilation, which is rarer and generally supposed via reconstruction. From a morphological point of view, total assimilatory processes occur at morphemic boundaries, in both derivational (i.e., *sella* < **sed-la*), inflectional morphology (i.e. *ferre* < **fer-se*) and composition as well (i.e. *officina* < **op(i)-făcina*). Assimilation parallels the opacification of morphological boundaries (with sometimes the reanalysis of the word, as in the case of the diminutive suffix *-ellus*, which assumed an autonomous productivity, cf. below). This type of total assimilation occurred at an early stage in Latin, and the segmentation of the word is supposed by means of internal or external comparison. Such outcomes were no more transparent for Latin speakers in the historical period, and for such a reason words like *stella* (< **ster-la*?), *annus* (< **at-nos*), *terra* (< **ter-sa*) are recorded in the lexicon of “spontaneous” geminates by Giannini & Marotta (1989, pp. 44-45, 50).

Other assimilatory processes – especially those ones involving prefixation – are synchronically fluctuating (at least from an orthographic point of view).

I. Assimilation in prefixation

The consonant-ending prefixes with monosyllabic structure,¹⁴² except for one compound of *inter* (*intellego* < *inter-lego*), undergo regressive assimilation in composition with the outcomes shown in TABLE 3.1 (based on Giannini and Marotta (1989, pp. 37-38)). However, examples of assimilation of *ab*, which has many allotropes, are quite rare.¹⁴³ *Ex* is assimilated only before /f/-initial lexemes.¹⁴⁴ Assimilation in prefixation is rather ancient and is attested since Republican inscriptions; moreover, a play-word in Plautus (*Poen.* 279) between *adsum* and *assum* points to the diffusion of the assimilation in everyday speech (which is paralleled by sandhi assimilation of the respective prepositions). The opacification of morphological boundary in prefixed forms parallels a process of grammaticalization of ancient adverbial particles.¹⁴⁵

PREFIX	ASSIMILATION IN PREFIXATION
-b (ob, sub)	[b] → [p]/ V ₋ , [p] (e.g. <i>oppono</i> , <i>oprrimo</i> ; <i>suppeto</i> , <i>suppono</i>)
	[b] → [k]/ V ₋ , [k] (e.g. <i>occido</i> , <i>occubo</i> ; <i>succingo</i> , <i>succumbo</i>)
	[b] → [g]/ V ₋ , [g] (e.g. <i>suggero</i> , <i>suggravo</i>)
	[b] → [f]/ V ₋ , [f] (e.g. <i>offero</i> , <i>officio</i> ; <i>suffero</i> , <i>sufficio</i>)
-d (ad)	[d] → [p]/ V ₋ , [p] (e.g. <i>appareo</i> , <i>appeto</i>)
	[d] → [t]/ V ₋ , [t] (e.g. <i>atterro</i> , <i>attingo</i>)
	[d] → [k]/ V ₋ , [k] (e.g. <i>accedo</i> , <i>accido</i>)
	[d] → [g]/ V ₋ , [g] (e.g. <i>aggravo</i> , <i>aggredior</i>)
	[d] →]/ V ₋ , [l] (e.g. <i>allicio</i> , <i>alloquor</i>)
	[d] → [r]/ V ₋ , [r] (e.g. <i>arrideo</i> , <i>arrogō</i>)
	[d] → [n]/ V ₋ , [n] (e.g. <i>annecto</i> , <i>annuo</i>)

¹⁴² i.e. *ad*, *ab*, *in*, *ob*, *cum*, *sub*, *per*, *dis*, *por*, *ē*, *ex*.

¹⁴³ The distribution of the allotropes of the preposition / preverb *ab* is basically the following (cf. *DELL* s.v. and *EDLIL* s.v.): *ab* + V, <h>, /d/, /l/, /n/, /r/, /s/ (in front of /s/ it is sometimes written <ap>); *ā* + /m/, /f/, /w/, /b/; *abs* + /p/, /t/; *au* + /f/. In Latin inscriptions there are few examples in which the prefix *ab* undergoes assimilation before /m/ and /n/, see e.g. <AMMVERIT> (*CIL* 6 7308) for *amouerit* and <AMNEGAVERIT> for *abnegauerit* (*CIL* 6 14672). Such assimilations are homophonic to the outcomes of the compounds with the prefix *ad*.

¹⁴⁴ Similarly to *ab*, *ex* has different allotropes, whose distribution is basically the following (see *DELL* s.v. and *EDLIL* s.v.): *ex* + V, [k], [t], [s], [p]; *e* + [b], [d], [g], [l], [m], [n], [r], [w]; *ec* + [f], with total assimilation (see e.g. *efficio*, *effluo* etc.).

¹⁴⁵ It is widely agreed that Latin prefixes and prepositions derive from PIE particles which were supposed to have at an early stage a free movement within the sentence (Meillet and Vendryes 1963, pp. 199-200, 573-578; Cuzzolin 1995; Hewson and Bubenik 2006, pp. 57-59; 345). The linguistic process related to the change of such free particles towards grammatical elements is a deeply studied issue, and an accurate *status quaestionis* is presented by McGillivray (2014, pp. 127ff, with references).

	[d] → [f]/V ₋ [f] (e.g. <i>affero, affirno</i>)
	[d] → [s]/V ₋ [s] (e.g. <i>assequor, assisto</i>)
	[d] → [m]/V ₋ [m] (e.g. <i>ammoneo, ammoueo</i>)
-c (ec)	[c] → [f]/V ₋ [f] (e.g. <i>efficio, effluo</i>)
-N (in, cum)	[n] → [m]/V ₋ [m] (e.g. <i>commoror, commoueo</i>)
	N → [l]/V ₋ [l] (e.g. <i>collabor, colloquor, illabor, illigo</i>)
	N → [r]/V ₋ [r] (e.g. <i>corrigo, corrogo; irrideo, irrogo</i>)
-s (dis-)	[s] → [f]/V ₋ [f] (e.g. <i>differo, difficilis</i>)
-r (per, por-, inter)	[r] → [l]/V ₋ [l] (e.g. <i>pellicio, pelluo; polliceor, polluo; intellego</i>)

TABLE 3.8 Segmental rules of assimilation in prefixation (based on Gianni & Marotta 1989, pp. 37-38)

It is worth noting that manuscripts as well as direct documents show fluctuating spellings of such prefixed forms. There are many examples, notably in official and old-fashioned texts, of etymological/etymologizing spellings, such as <INLVSTRIS> (e.g., *CIL* 8, 24044), <CONLEGIVM> (e.g., *CIL* 2, 5439a), <CONLOCAVIT> (e.g., *CIL* 11, 257) (cf. Prinz 1940-1950, 1953; Löfstedt 1959, pp. 196-206; Zamboni 2000, pp. 146-147). Many inscriptions show both spellings, such as <INMOLITVM> ~ <COMMVTARE> in the *lex Iulia municipalis* (*CIL* 1 206, dated to 45 BC); <ADTRIBVATVR> ~ <ATTRIBVANTVR> in the *lex Ursonensis* (*CIL* 2 5439, dated to 44 BC) (cf. García González 2015, pp. 181ff). Similar spellings are also attested in private texts, as a consequence of hypercorrection, as in the case of <ADTAMEN> for *attamen* (e.g., *CIL* 12, 944). Ancient grammarians' prescriptions show a quite clear picture: assimilated spellings are generally accepted during the Imperial period, whereas non-assimilated spellings are ascribed to an *imperitia* (see SCAUR. *gramm.* VII 25, 15: *quidam imperite semper custodiunt*).¹⁴⁶ If we examine, for instance, the sample of letters on papyri and ostraca available on CLaSSES, we may notice that non-assimilated spellings are quite rare, and that the main examples are represented by <AD FERRE> for *adferre*, with an erroneous word-cut hinting at the *imperitia* of the scribe, and <CONLIBERTÓ> (*CEL* I 8), with the *apex* hinting at an old-fashioned style.

II. "Vulgar" Latin geminations

Other types of total assimilations, characteristic of non-literary Latin, concern the treatment of the consonant clusters /kt/, /pt/, /ks/ and /ps/.

- The treatment of the consonant cluster /kt/ in Latin is a highly debated issue, as we shall see in CHAPTER 4. This cluster may occur at morphemic boundary (e.g., *rectus*) as well as in

¹⁴⁶ See also Quint. *inst.* I, 7, 7: *Quaeri solet in scribendo praepositiones sonum quem iunctae efficiunt, an quem separatae observare conveniat, ut cum dico optinuit (secundum enim b litteram ratio poscit, aures magis audiunt p) et immunis: illud enim, quod veritas exigit, sequentis syllabae sono victum in gemina commutatur*. For grammarians testimonies, see the passages collected by García González (2015, pp. 181ff).

tautomorphemic contexts (e.g., *octo*). The total assimilation continued in Italo-Romance and Sardinian (e.g., It. *otto*) can be surely dated at the beginning of the 4th century AD, in Diocletian's *Edictum De Pretiis Rerum Venalium* (301 AD), where the form <LATTVCAE> for *lattucae* is attested.

- The consonant cluster /pt/, occurring at morphemic boundary (e.g., *scriptus*) as well as in tautomorphemic contexts (e.g., *septem*) is continued via total regressive assimilation in Italo-Romance and Sardinian (e.g., It. *sette*). The geminated outcome is attested since the 3rd century AD, e.g. <SETTEMBRIS> in *CIL* 6 10246, <SVTTER> in *Tabl. Alb.* 16, 5-6 (cf. Adams 2013, p. 175).
- The consonant cluster /ks/ (spelled <x>, <xs> and <cs>) undergoes total assimilation (i.e., /ss/) in Sardinian and Italo-Romance (cf. Baglioni 2001). Spellings hinting at total assimilation are quite widespread in Latin primary sources, see <VISSIT> for *vixit* (*CIL* 8 109780) and inverse spellings of /s(s)/ via <x> such as <OXA> for *ossa* (*CIL* 6 3446) and <REX TVAS> for *res tuas* (Velázquez Soriano 2004, p. 303).
- The Latin consonant cluster /ps/ (e.g. *scripsi*, *ipse*) undergoes total assimilation (i.e. /ss/) in Italo-Romance and Sardinian. Spellings hinting at total assimilation are attested since Pompeian inscriptions in the pronoun *ipse*, whose assimilated form gained lexical autonomy (e.g. *issa*, *issula* 'domina', *issus* 'dominus'; cf. Adams 2013, p. 172).
- Other types of geminations, typical of Vulgar and Late Latin, concern the gemination before /j/, /w/, /l/, /r/, all ascribable to processes of syllabic restructuring of heterosyllabic sequences (i.e. C^sj > C^sCj, cf. Loporcaro 2011b and § 3.3).

III. Gemination due to other morpho-phonological processes

Latin geminates result also from the following morphophonological processes, which occurred at an early stage. Notably, the diminutive suffix represents a link between etymological and expressive gemination.

▪ Reduplication

Consonant gemination characterizes some Latin reduplicating perfects. Latin shows few instances of this type of perfect, such as *ce-cini* (from *cano*), *cu-curri* (from *curro*).¹⁴⁷ In some cases, notably in prefixed verbs, the *e of the reduplicated syllable undergoes syncope, so that the consonant of the reduplicated syllable and the initial consonant of the stem adjoin one another, thus forming a geminate consonant: see e.g. *reppëri* (< *re-pë-përi), *reppuli* (< *re-pë-puli), *rettüli* (< *re-të-tuli), *occīdi* (< *ob-cë-cīdi). A similar process is likely to have

¹⁴⁷ This perfect shows a harmonization of *e to the vowel stem (see e.g. also *spo-pondi* from *spondeo*).

happened to the verb *reddo*, showing a reduplicating formation in the *infectum* (perhaps **re-dī-do*, cf. Gk. *δί-δω-μι*, Ved. *dādāti*).

▪ Inflectional morphology

Consonant gemination characterizes some suffixes involved in inflectional morphology. These suffixes account for the high frequency of the /ss/ pattern among Latin geminates.¹⁴⁸ The inflectional suffixes determining the high frequency of /ss/ are: *-issimus*, *-a*, *-um* in superlative adjectives;¹⁴⁹ *-iseem*, *isses* etc. in the ppf. subjunctive, *-isse* in the pf. infinitive, *-sse* in the present infinitive of *esse* and its compounds (cf. e.g. *posse*), *-ssus* in the ppp. of some 2nd-conjugation verbs deriving from the suffix *-tus* joined directly to the stem (i.e. *iussus* < **iud^h-tos*, *sessus* < **sed-tos*). Moreover, the future *-s-* suffix which is used in Archaic Latin to form desideratives (see e.g. *faxo*, *dixo*; cf. Osc. *fust* ‘will be’ 3rd SG. FUT.) is productive in the formation of verbs such as *amāssō*, *indicāssō* and their infinitives in *-ssere* (see e.g. *facessere*).

▪ Derivative morphology: the diminutive suffix

The inherited PIE suffix **-lo-* had two functions, both attested in Latin (cf. Leumann 1977: 305-312; Weiss 2009, pp. 279-281): on the one hand, the creation of deverbal adjectives with agentive force (see e.g. *speculum* ‘looking glass’, from *speciō* ‘I look’; *bibulus* ‘absorbent’, from *bibō* ‘to drink’),¹⁵⁰ on the other hand denominal and deadjectival derivatives with a diminutive force (see e.g., *arcula* ‘small chest’, from *arca* ‘chest’).¹⁵¹ This suffix had at the beginning three main allomorphs: **-lo-* (e.g. *lapillus* ‘pebble’ < **lapid-lo*, cf. *lapis*, *-idis* ‘stone’), **-elos* > *-olos* > *-ulus* (e.g. *rēgulus* ‘chieftain’, cf. *rex*, *regis* ‘king’, *longulus* ‘somewhat long’, cf. *longus* ‘long’), *-culus*¹⁵² (e.g. *aedicula* ‘small room, chapel’, cf. *aedēs* ‘temple’; *articulus* ‘joint, juncture’, cf. *artus* ‘limb’). The reconstruction is much more problematic for the outcomes of **(e)lo-* after a stem ending in liquid or nasal, which gave birth to diminutives in *-ellus* and *-illus* (and more rarely *-ullus*).

¹⁴⁸ As Giannini & Marotta (1989, p. 43) point out: «i sistemi flessivi godono di un maggior potere paradigmatico rispetto a quelli derivativi; il loro stesso organizzarsi in classi ne garantisce una forza di coesione interna non parimenti attribuibile ai singoli fenomeni di derivazione. La produttività inoltre [...] è quantitativamente più caratteristica della flessione; e proprio ad essa si correla la possibilità di identificare il singolo morfema (e le regole che ne accompagnano la ricorrenza) in ragione di un rapporto di proporzionalità diretta».

¹⁴⁹ The original suffix was **-isṃmo-* > *-issumo-* > *-issimo-*. The reduplication of /s/ is possibly due to «affective gemination» (see Weiss 2009, p. 358).

¹⁵⁰ For IE parallels of the suffix **-lo-* in deverbal adjectives, see e.g. *τυφλός* ‘blind’, from *τύφειν* ‘smoke’.

¹⁵¹ For IE parallels of the suffix **-lo-* in the formation of diminutives, see e.g. Lith. *ratėlis* ‘little wheel’ from *rātas* ‘wheel’ and Ved. *vṛ̥ṣalā-* ‘poor fellow’, from *vṛ̥ṣā* ‘male’.

¹⁵² This suffix probably derives from a *Suffixhäufung* of the suffixes **-k(o)-* (also employed with diminutive function, see e.g. Latin *homuncio* ‘little man’ and OCS *synŭkŭ* ‘little son’) and **-lo-* (cf. Weiss 2009, p. 279).

A distinction between phonetic and morphological processes is in this case necessary: in some cases, such endings with gemination are phonetic, and result from processes occurred at an early stage, as is shown below. In other cases, such endings are extended analogically to other stems, and have their own productivity.

- (1) ĖLLUS, -A, -UM
 a. -rō/ā- + -lō-/ā- *agellus* (**agrō-los* > **agrlos* > **agerlos* > *agellus*)
 b. -nō/ā- + -lō-/ā- *asellus* (**asēnō-los* > **asenlos* > *asellus*)
 c. -lō/ā- + -lō-/ā- *fābella* (**fāblā-lā* ?)
- (2) ĬLLUS, -A, -UM
 a. -nō/nī- + -lō-/ā- *sigillum* (**signō-lom* > **signlom* > **sigenlom* > *sigillum*)
 b. -lō/ā- + -lō-/ā- *axilla* (**agslā-la*), *bacillum* (**baclo-lom*), *mamilla* (**mammēlā-la*)
- (3) ĪLLUS, -A, -UM
 a. -īnō/ā- + -lō-/ā- *uillum* (**uīnō-lo* > *uīnlom* > *uillum*)

The above listed diminutives have a phonetic origin. It is worth noticing that in some cases the suffix *-lo- joins a *-lo- ending base, which may have different origins: or from an identical *-lo- suffix (and in this case they are called “double diminutives”, e.g. *agnellus*), or from *-tlom > *clom > c(ŭ)lum (e.g. *baculum*, cf. 2b), or from *dʰlom > bulum (e.g. *fabula* cf. 1c).

However, during the Republican age the suffixes -ĕllus and -illius / -īllus were reanalyzed as independent suffixes to form new diminutives. They were attached also to verbal stems (e.g. *conspicillum* and *specillum*) and were employed in the formation of verbs ending in -illō and -ellō (e.g., *attillō* ‘tickle, titillate’; *colabellō* ‘smack lips, kiss’, see Strodach 1933, pp. 87-89 for further examples). The emotional nuance conveyed by these suffixes, further reinforced by the presence of geminated consonants, accounts for their productivity.¹⁵³ Moreover, the high frequency of these suffixes is further suggested by the fact that, at a certain point, Latin speakers felt a paradigmatic relation between diminutives in -ĕlla and the abstract feminine nouns in -ēla, as is suggested by grammarians;¹⁵⁴ this would be a further piece of evidence of the tendency to favor consonant length rather than vowel length, consistently with the gemination of the *littera*-type.

¹⁵³ A direct link between morphology and pragmatics is theorized, as far as evaluatives are concerned, by Dressler & Merlini Barbaresi (1994). Cf. Dressler & Merlini Barbaresi (2017) for further bibliography.

¹⁵⁴ Cf. Mar. Vict. (Ars, p. 80, l. 13), 3rd-4th century AD: *l et r geminari solent quotiens ratio non repugnat aurium sono, ut in nullo, in uerre; camelus uero et loquela et querela et suadela et tutela uno l scribenda sunt, ut uno r narat, narus.*

3.1.2 Expressive gemination

We shall now examine the phenomena related to the so-called “spontaneous” gemination, which is traditionally meant as gemination which is not related to phenomena of assimilation. The major treatise on spontaneous consonant gemination in Latin is Giannini & Marotta (1989), which has represented the main guide for the planning as well as the theoretical foundations of our analyses. Giannini & Marotta (1989) analyze, after an accurate scrutiny, all the lexemes with spontaneous gemination attested in the *Thesaurus Linguae Latinae* and in Forcellini’s *Totius Latinitatis lexicon*: each Latin word showing geminates – with the exception of those words in which geminated consonants result from transparent morphological assimilation – is classified with tags concerning syllabic and accentual structure as well as register, with further information, whenever available, on the etymology and the possible presence of non-geminated allotropes (for the methodological and empirical foundations, see Giannini & Marotta 1989, pp. 16-33).

The historical grammars usually distinguish between expressive gemination and gemination of the *littera*-type. (cf. e.g., Niedermann 1953[1931] § 63, pp. 114-115; Leumann 1977 § 183). The notion of expressive language – involving child language, hypocoristics, onomatopoeia, words pertaining to physical flaws – was pursued mainly by French scholars, focusing on the *langue expressif* in Latin (e.g., André, 1978; Marouzeau 1946; throughout *DELL*), Greek (e.g., Masson, 1986) and the Germanic languages (e.g., Martinet 1937).¹⁵⁵ Both the lexicon by Graur (1929) and Giannini & Marotta (1989) include several words belonging to this kind of lexicon. Words tagged with ‘lingua familiare’, ‘linguaggio infantile’, ‘onomatopea’ represent respectively the 15,8% (Corpus I) / 18,4% (Corpus II), 0,8% (Corpus I) / 4,8% (Corpus II), 5,8% (Corpus I) / 10,6% (Corpus II) of Giannini & Marotta’s lexicon.

Expressive gemination emerges also in languages in which geminated consonants do not belong to the phonological system, as in the case of French, in which occasionally a consonant is lengthened with emphatic purposes, e.g., *c’est merveilleux* [s ε mmeʁvɛ’jø] (Maturi 2009, p. 134); in Marathi and Bengali gemination in word-medial position can sometimes occur for pragmatic intensification, e.g., Marathi [ɑtɑ] ‘now’ vs. [ɑt:ɑ] ‘now!’ (Laver 1994, p. 438).

Scholars have generally considered expressive gemination in Latin as a special case, not to be put in relation to the phonological system. In particular, French scholars considered the *expressif* component as pertaining to the level of *parole*, i.e., limited to the phonetic realization. Otherwise,

¹⁵⁵ On expressive gemination see Kuryłowicz (1967). On baby-talk and the gemination as a *universale*, see Savoia (1984), Skoda (1982),

Giannini and Marotta's (1989) analysis highlighted the relation between phonology and pragmatics: consonant gemination is to be considered as a device, operating at the phonostylistic level, which uses the feature of consonantal length, belonging to Latin phonology.¹⁵⁶

Indeed, the relationship between this phonostylistic tendency and Latin morphophonology is responsible, as previously seen, for the high productivity of suffixes vehiculating evaluative aspects, i.e., the diminutive as well as the superlative suffixes. Moreover, it is certainly not the case that many words, in which consonant gemination can be related to this phonostylistic strategy are formed via the *-ō, -ōnis* suffix (cf. Leumann 1977, pp. 360-362), which is employed in the formation of *cognomina* usually referring to physical flaws (*Buccō, -ōnis; Varrō, -ōnis*) and which will be employed for the formation of augmentatives in the Romance languages.

3.1.3 The *littera*-rule

The *littera*-rule represents a highly controversial issue, starting from the word which has been taken into account as best representative of it. In the history of the studies two main approaches emerge. On the one hand the presentation of this a rule in an apodictic way. On the other the skepticism due to the documentary and etymological uncertainty of the words which are supposed to comply with this rule. More recently, this rule has been interpreted as a tendency, albeit not systematic, related to sociolinguistic variation and the evolution of Latin syllabic structure and vocalic system. We shall briefly outline the *status quaestionis*.

Since XIX century treatises, scholars have collected a lexical class containing two allotropes with a structure respectively /V:C/ and /VC:/ (such as, presumably, *lītera ~ littera* and *bāca ~ bācca*) in which vowel length would be in complementary distribution with consonant length. The first mention is found in a paper by the etruscologist Carl Pauli (Pauli 1868), providing a lexicon of 72 Latin words with spontaneous consonant gemination, some of which presenting such alternations. Later on, Brugmann (1886, p. 801) introduces this issue in the following words:

¹⁵⁶ «Un fatto è emerso, a nostro avviso, con chiarezza dall'esame dei dati: il sistema fonologico del latino possedeva la quantità consonantica come meccanismo operante a livello fonostilistico, per caricare le parole a cui il procedimento si applicava di connotazioni aggiuntive rispetto alla loro funzione neutra, referenziale. L'elemento nuovo di fronte a cui il lessico della geminazione ci ha posto ridimensiona quindi, in maniera non trascurabile, le precedenti interpretazioni in chiave 'espressiva'. L'allungamento consonantico non funzionava, infatti, come tratto *impressivo*, attivato unicamente nell'ambito di scelte stilistiche individuali, ma doveva piuttosto detenere la ben più solida posizione di tratto sociolinguistico stabilmente inserito nella *langue*».

In derselben Sprache erscheint öfters, wahrscheinlich unter dem Einfluss stark geschnittenen Silbenaccents, langer Vocal verkürzt und folgender Consonant gedehnt. cūpa cuppa : ai. kūpa-s 'Grube, Höhle'. Jūpiter Juppiter, urspr. nur Voc. Sg. = gr. Ζεὺ πάτερ. cippu-s: ai. śēpa- 'Schwanz, penis', gr. σκοῖπος (§ 818, 2 S. 726). Āpennīnus Appennīnus. mūtīre muttīre. lītera (inschr. leitera) littera. mittō vgl. mīsī, wahrscheinlich zu ahd. mīdan 'verlassen, vermeiden' (vgl. ā-mittēre); die Stufe *mītō ist vielleicht durch das mitat der Dvenosinschr. repräsentiert; cosmittere (Paul. Fest.) weist auf smit- : mit- (§ 828, 2). mūcu-s muccus. būca bucca. nārāre (narare schrieb Varro vor) narrāre aus *gnārāre, zu gnāru-s : umbr. naratu naratu 'narrato, declarato'. pāricīda parricida : gr. παῖς dor. παός 'Verwandter' aus *πασο-ς. ālūcināre allūcināre : gr. ὀλέος 'verwirrt, bethört'. āliu-m alliu-m, zu hālāre, īlicō illicō s. § 414, 1, b. īlex *illex (italien. elce 'Steineiche'). cucūlu-s cucullu-s. angūla anguilla. Für mm, nn, gibt es nur undichre Belege, wie dāma damma, pannu-s (: gr. πῆνο-ς 'Gewebe') [...]

Stolz (1894 § 217, p. 225) collects Brugmann's examples, and includes in this pattern also the alternation of the suffixes *-ēla ~ -ēlla* (e.g., *loquēla ~ loquēlla*, cf. § 3.1.1), already noticed by Seelmann (1885). Lindsay (1894, § 130, p. 116) points out that the forms with consonant gemination are generally later and have Romance continuity. All these authors claim that consonant gemination is to be attributed to the accent. This aspect is further developed by Vendryes (1902, §§ 126-145, pp. 110ff.),¹⁵⁷ attributing this tendency to a *pononciation en staccato*. Grandgent (1907, § 163, 69-70) introduces a diasystematic interpretation of these alternations and argues that they might reflect diatopic variation. A further lexicon of Latin words with consonant gemination is compiled by Carnoy (1917), accepting the hypothesis of the alternation /V:C/ and /VC:/. The canonical version of the *lex littera* is presented by Sommer (1914, § 160, pp. 290ff), and the following most influential historical grammars of Latin, e.g., Niedermann (1953[1931], § 62), Safarewicz (1969, § 90), Leumann (1977, §§ 183, 184), Janssen (1952, p. 24), Sommer & Pfister (1977, pp. 106ff), and, more recently, Sihler (1995, p. 224), Meiser (2006[1998], p. 77, embracing a sociolinguistic account), Rix (1998, p. 625), Weiss (2009, p. 144). Likewise, some of these pairs are presented also in the traditional handbooks of Romance linguistics, i.e., Weinrich (1958, pp. 17-18), Rohlf's (1966, §230), Lausberg (1971, §491). These scholars highlight the difficulty in tracing the causes and the conditions determining this tendency, as well as the sporadic nature of this process (cf. Mignot 1969, p. 19; Leumann 1977, p. 183-184). Indeed, the Latin lexicon shows several counterexamples in which a /V:C/ structure does not display a /VCC/ variant (e.g. *litem, pūpilla, lūcus, dīto, rāro, cāra*; cf. Sen 2015, p. 43).

¹⁵⁷ «Un des effets les plus clairs de l'intensité initiale semble être le redoublement consonantique qui s'observe entre la première et la seconde syllabe d'un grand nombre de mots. Ce cas, qu'on appellera *cas de Iuppiter* du nom de son principal exemple, a été examiné déjà par bien des linguistes depuis que M. Pauli s'en est occupé pour la première fois (*K. Z.*, XVIII, 1)».

For this reason, some scholars brought into question the existence of this law. Indeed, many of the forms which have been taken into account as representative of the *lex littera* are not fully examined from an etymological and philological point of view, and the vowel quantity of some forms is not always certain. One of the first paper to question the *lex littera* is Pellegrini (1909), stressing that the issue of *Spontane Konsonantgemination* has been analyzed with a «preconcetto teorico, sforzandosi di spiegare i casi loro noti con una legge che tutti li governi [...]». È indubitato che nella maggior parte dei casi si tratta di assimilazione, in altri l'incertezza dell'etimologia ci lascia titubanti se il raddoppiamento sia dovuto ad assimilazione oppure alla cosiddetta 'gescharfte Aussprache', che io credo spiegazione poco scientifica» (p. 23). Yet Pellegrini's analysis attributes many geminated forms to the *lex Lindsay*, which is even more controversial than the *lex littera*.¹⁵⁸

The *destruens* approach was developed mainly by Abel Juret, Massimo Lenchantin de Gubernatis and especially Carlo Battisti. In the *Manuel de phonétique latine* (Juret 1921, pp. 152-154), Juret points out the documentary and etymological issues raised by most of the words included in the *littera*-rule; in many cases, moreover, it is not possible ascertaining vowel quantity, i.e. whether the singleton allotrope has a long vowel (V:C) or the geminated one has a short vowel (VC:). Independently from Juret, Lenchantin de Gubernatis (1919) and Battisti (1923) present similar arguments against the *littera*-rule. Each item would seem to show a particular story and it would not be possible to find a unitarian explanation to account for such alleged pairs. Even Graur (1929) shows a skepticism about this rule, notably as for the abbreviation of vowel quantity in the geminated allotrope.

The studies on the *lex littera* were subsequently improved by Weinrich (1958, pp. 17-18), Giannini & Marotta (1989), Benedetti (1996) and Benedetti & Marotta (2014). These analyses point out that the phenomenon should be put in relation with the evolution of the Latin vocalic and syllabic systems. Conversely, the analysis by Sen (2015) tends to explain this process with a reductionist account.

Giannini & Marotta (1989)¹⁵⁹ elaborate a very suggestive model relating the gemination and the abbreviation of vowel quantity in the geminated allotrope to a drift towards syllabic isochronism,

¹⁵⁸ Lindsay's nom, firstly proposed in Lindsay (1898), is based on the evidence that some Greek loanwords in Latin show an alleged adaptation of Greek aspirate stops into Latin geminate, e.g. *bracchium*, *Accheruns*, *Acchilles*. This idea was then accepted Vendryes (1902) and Pellegrini (1909), attributing to Lindsay's norm Latin geminated forms such as *bracchium*, *macchaera*, *Accheruns*, *macchina*, *brocchus*, It. *treccia* (< **tricchea*), *tippula*, *supparum*, *stroppus*, It. *bottega* (< **apottheke*), It. *cattedra* (< **katthedra*), It. *cattolico* (< **kattholikos*). However, as Mancini (1990) demonstrated, most of these geminates may find different explanations.

¹⁵⁹ Giannini and Marotta (1989)'s lexicon contains about 147 words which would show an alternation between geminated and non-geminated allotropes (52 in Corpus I and 95 in Corpus II, respectively 20,2% and 32,5% of the entire lexicon),

characterizing nowadays some Romance varieties (i.e., Italo-Romance and Sardinian), but supposed for Proto-Romance as well (cf. Loporcaro 2011a, p. 52). Indeed, the allotropes *bāca* ~ *bācca* would show that vowel and consonant length were complementary processes reaching the same prosodic pattern. They would account for a prosodic constraint on vowel quantity, depending on syllable structure, thus complying with the tendency as evidenced by the statistical correlation between long vowels in open heavy syllable and short vowels in closed heavy ones (cf. De Felice 2018, Marotta 2018, Marotta & De Felice 2019). This perspective is further developed with a sociolinguistic perspective. Since the tendency towards syllabic isochrony would be proper of low, or at least informal varieties (Vineis 1984, 1993), the allotropes with geminated consonants are supposed to be firstly widespread among uneducated peoples, or in informal speech. A confirmation of this hypothesis would be represented by the fact that such forms belong to familiar and informal registers or are attested in a later period.

Such an interpretation has the merit of also including the cases of expressive gemination and gemination due to assimilation: in the first case, consonant gemination of the *littera*-type spread in those varieties and in those portions of lexicon in which consonant gemination is also a phonostylistic strategy; on the other hand, gemination due to assimilation reinforces, and is reinforced by, such geminates of morphoprosodic and pragmatic origin.

It is worth quoting entirely the conclusions by Giannini & Marotta (1989, pp. 274-275):

[Le alternanze allotropiche] attestano la disponibilità complementare della lunghezza ora vocalica ora consonantica a rendere pesante la sillaba tonica. Data una forma con vocale originariamente breve in sillaba aperta tonica, il parlante incolto, o comunque in situazione diafasicamente marcata come informale, poteva allungare o la vocale o la consonante seguente, in ragione della loro sostanziale equivalenza prosodica e nella misura in cui ciò non creava eccessiva coalescenza semantica. D'altra parte, il condizionamento prosodico indotto dall'accento, che conduce all'isocronismo sillabico, si esercitava in primis nelle varietà substandard del latino e in contesto diafasico informale, vale a dire esattamente nelle stesse condizioni diastratiche e pragmatiche in cui tendeva a verificarsi la geminazione consonantica d'impronta fonostilistica. Quasi superfluo diventa allora presumere che in questo stesso livello sociolinguistico, allo scopo di rendere pesante la sillaba tonica, venisse preferito l'allungamento consonantico a quello vocalico. Conferma, sia pure indiretta, in tal senso proviene dalle testimonianze dell'*Appendix Probi* in cui vengono stigmatizzate, in quanto appartenenti al registro volgare o comunque incolto, forme quali *cammara*, *acqua*, *dracco*. [...] A rafforzare tale posizione di stabilità avrà sicuramente contribuito lo sviluppo parallelo dell'assimilazione

though in most of these couples vowel quantity is not certain. Their pattern in the *lex littera* is mostly assumed on the basis of phonological considerations.

consonantica, tipica del latino tardo, il cui esito è ancora una consonante lunga. Un'ipotesi non troppo azzardata al riguardo potrebbe del resto non solo correlare da un lato la geminazione lessicale, fonostilisticamente connotata e prosodicamente attiva, e la geminazione morfologica dall'altro, ma anche considerare quest'ultima quale processo favorito, se non addirittura provocato, proprio dall'espandersi progressivo della prima.

This perspective is further pursued by Benedetti (1996), re-examining the issue of the *lex littera* with an etymological and philological analysis of the forms which are supposed to be involved in. Benedetti notices that many of these words, albeit their documentary uncertainty, are characterized by the presence of an ancient diphthong before the consonant undergoing gemination, as is shown in TABLE 3.2:

V:C ~ VC: ALLOTROPES	RECONSTRUCTED FORM
<i>*cīpus ~ cippus</i> 'boundary stone'	<i>*keīpos</i>
<i>fūtīlis ~ futtilis</i> 'that easily pours out'	ppp. <i>*fūtus < *g^heuto-</i>
<i>gūtus ~ gūttus</i> 'jug, flask'	
<i>lūpiter ~ Iuppiter</i> 'Iupiter'	<i>*dīeupater</i>
<i>lītera ~ līttera</i> 'letter'	<i>*leītesa</i>
<i>lītus ~ littus</i> 'shore, coast'	
<i>mīto ~ mītto</i> (<i>mīsīt ~ mīssīt</i>) 'to send'	<i>*meīto</i>
<i>līppus</i> 'with bleary eyes'	<i>*leīpos</i>
<i>glītus</i> 'sticky, cohesive'	<i>*gleītos</i>
<i>mūcus ~ mucus</i> 'mucus'	<i>*(s)meūkos</i>
<i>sūcus ~ succus</i> 'juice'	<i>*soūkos</i>
<i>gūttur</i> 'throat'	<i>*goūtr</i>

TABLE 3.9 *Littera pairs showing a diphthong in the reconstructed form (Benedetti 1996)*

In the light of this common element, Benedetti (1996), and Benedetti and Marotta (2014), propose a relation between the gemination and the monophthongization of **eī* and **oū*. As is known, the monophthongs resulting from **eī* and **oū* (< PIE **oū* or **eū*) merged with original /ī/ and /ū/ around the 1st century BC. It is likely that, at an early stage, they resulted in /ē/ and /ō/ respectively, which were supposed to be closer than original /ē/ and /ō/, but opener than original /ī/ and /ū/, as is shown in FIGURE 3.1.

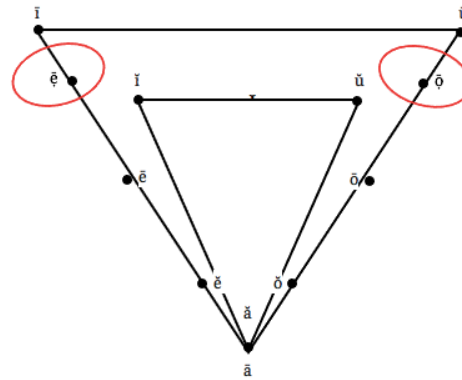


FIGURE 3.6 Archaic Latin vowel system

This stage is represented, as far as the development of **eĭ* is concerned, by spellings such as PLOIRVME (< *plourumei*, cf. CL *plurimī*), VECOS (< **weikos*, cf. CL *uīcus*), around the 3rd century BC (cf. Allen 1978 [1965], pp. 53-55). During the Late Republican period, when the monophthong merged with original /ī/, the opener pronunciation was perceived by educated people as both rustic and archaic (cf. Mancini 2006). Likewise, as far as the development of **ou* is concerned, the first stage of monophthongization can be found in Dialectal Latin between the 4th and the 2nd century BC, especially at Praeneste, see e.g. *Polōces* (< *Poloukes* < **Poludeukes*, CL *Pollūces*) and *lōsna* (< **louksna*, CL *lūna*). According to Benedetti (1996), Benedetti & Marotta (2014), and Weiss (2009, p. 144; 2010), the instability of the resulting monophthong would have triggered the gemination of the following consonant. The path towards geminated allotropes, therefore, would have not been *eĭT* / *ouT* > V:C > VC:, but *eĭT* / *ouT* > V:C ~ VC:. More precisely, the development of the geminated allotrope is not a further and later development of the form with the /V:C/ structure, in a diachronic and linear perspective, but a parallel development which is to investigate with a sociolinguistic perspective. The phonological and phonetic motivations, as well as the sociolinguistic implications, of this shift are deeply discussed by Benedetti (1996) with a further revision by Benedetti & Marotta (2014). The variation in the outcomes of the monophthongization would be a consequence of an early dephonologization of vowel quantity in substandard varieties (see Weinrich 1958; Väänänen 1963; Pulgram 1975; Vineis 1984; Marotta 2015, 2017; *contra* Loporcaro 2010, 2011a, 2011b and 2015). The feature related to vowel quantity would have characterized upper varieties, in which the feature [+long] would have shown a solidarity with the features [+tense] / [+lax], as in most of world

languages,¹⁶⁰ whereas lower varieties would have perceived as distinctive the features $[\pm\text{tense}]$ and $[\pm\text{lax}]$ and would have not been able to control the feature $[\pm\text{long}]$ as their main correlate (cf. also Marotta 2017). In such a framework, it is likely that the monophthongs resulting from $e\bar{i}$ and $o\bar{u}$ were phonologized in different ways around the 2th century BC, i.e., $[\pm\text{long}]$ and $[\pm\text{tense}]$ in upper varieties (and this would explain the shifts $/\bar{e}/ > /i/$ and $/\bar{o}/ > /u/$, with the prominence of quantity feature as compared to timbre as well as the stigmatization of an opener pronunciation of $/i/$), and $[\pm\text{tense}]$ and $[\pm\text{long}]$ in lower varieties (with the prominence of quality feature). The possible shift within the articulatory space is shown in FIGURE 3.2.

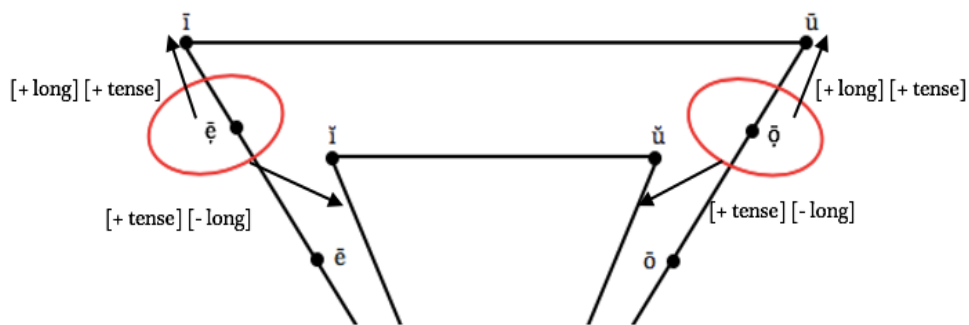


FIGURE 3.7 Possible shifts of $e\bar{i}$ / $o\bar{u}$ in Latin vowel system in different varieties of Latin

Thus, the outcomes of $e\bar{i}T$ / $o\bar{u}T$ in lower varieties would have been $V[+\text{tense}]T[-\text{tense}]$. Subsequently, the phonologization of feature $[\pm\text{tense}]$ would have triggered the gemination of the following voiceless stops, which are typologically more favored in processes of gemination (cf. Kenstowicz 1994; Blevins 2008), giving rise to the alternations $V[+\text{tense}]T[-\text{tense}] \sim V[-\text{tense}]T[+\text{tense}]$, which, in a later period, were likely to be extended to the higher variety as well, and interpreted as $/V:C/ \sim /VC:/$ with the $[\pm\text{long}]$ feature (cf. FIGURE 3.3, from Benedetti & Marotta 2014, p. 37).

¹⁶⁰ Phonological studies document a solidarity between the features long and tense and short and lax (Jakobson 1960, Maddieson 1984, 1977; Hayes 1989; Ladefoged 1997), even if some languages, such as Dutch, do not comply with this general tendency (Jakobson 1960).

Stadi Registri	I	II	III	IV
Alto		V [+ lungo, + teso]	V [+ lungo]	a. V [+ lungo] T b. V [- lungo] T [+ lungo]
Basso		V [+ teso, ± lungo]	a. V [+ teso] T [- teso] b. V [- teso] T [+ teso]	a. V [+ teso] T b. V [- teso] T [+ teso]

FIGURE 3.8 Stadi diacronici nell'evoluzione dei dittonghi VG in relazione ai due registri sociolinguistici; V = Vocale Alta; T = Occlusiva Sorda: Benedetti & Marotta (2014, p. 37).

Thus, the outcomes *dīco* < **deīko* and *dūko* < **doūko*, **cīpus* < **keīpos*, *Iūpiter* < *Dīeūspiter*, **lītera* < **leītesa* and so on would be proper of upper varieties, whereas *cīppus*, *Iūppiter* and *lītera* would be popular, and their presence in Standard Latin lexicon would be due to the diffusion of such lexemes from lower diaphasic or diastratic varieties, in which consonant gemination is also a phonostylistic strategy.

This pattern of alternations was subsequently spread also to lexemes in which V[±long] is not the result of monophthongization, in a pattern of allotropes in which /V:C/ would represent a standard variant, and /VC:/ a lower diaphasic/diastratic variant or a later development after the dephonologization of vowel quantity, as the lexical typology of words with geminated consonants as well as their dating according to the collection by Giannini & Marotta (1989) would attest. The sporadic and asystematic nature of this phenomenon should be therefore explained by a model of lexical diffusion (Wang 1969).

The recent interpretations of the *littera*-rule from Giannini-Marotta (1989) onwards are suggestive and convincing from a theoretical and phonological point of view. However, the main problem still remains the fact that many words which are supposed to belong to this pattern are not exempt from doubts: the documentary evidence for *ceipom* and *leitesa*, for example, are questionable, as was noticed by Juret (1921), Lenchantin the Gubernatis (1919) and Battisti (1923), and in most of cases it is not possible to ascertain vowel quantity, which is necessary to probe the /V:C/ ~ /VC:/ alternation. Moreover, some Romance outcomes of the geminated allotropes often show a treatment of stressed vowel which is not consistent with the evolution of Latin short vowels in Proto-Romance vowel system, e.g. It. *succo*, *putto*, *brutto* (implying respectively SŪCCUS, PŪTTUS and BRŪTTUS), whereas some geminated allotropes sometimes clearly show in the Romance

outcomes a development from a short vowel, e.g. It. *lettera*, *ceppo*, *ghiotto*, *moccio* (from *littera*, *cĭppus*, *glŭttus* and *MŪCCEUS).

From a theoretical point of view, however, if we consider the evolution of Latin syllable structure the, it is unlikely that a word with a /V:C/ structure, in the gemination of the consonant, maintains the long vowel, since a hyperheavy syllable would be realized. Similar hyperheavy syllables do exist in Latin, with geminated consonant as well. Yet, Latin shows a general drift towards the lightening of hyperheavy rhymes (cf. Loporcaro 2011a). If we consider that the forms with geminated consonants are later, such an inverse tendency is unlikely. This fact, albeit not providing a compelling clue of the brevity of the vowel followed by geminated consonants, which could be evidenced only by the Romance outcomes or by the use of allographs in inscriptions, is however a valid argument which could reasonably lead us to hypothesize that in the allotropes with geminated consonants the vowel was prone to be shortened. This tendency would be paralleled by the degemination of the *mamilla*-type (cf. below § 3.1.4) and the degemination of /ss/ and /ll/ after diphthongs or long consonants (e.g., *paullus* > *paulus*, *caussa* > *causa*, *vĭlla* > *vīlicus*, *mĭllia* > *mīlia*, *stĕlla* > *STELA*), cf. Giannini & Marotta (1989), Sihler (1995, p. 222), Loporcaro (2011a).

In § 3.4 we shall attempt to ascertain whether Latin primary sources may provide us with further evidence of the *littera*-rule. Primary data, albeit deceiving in some cases as far as this phenomenon is concerned, have the value of providing direct testimonies which might show a snapshot of the evolution of this phenomenon.

3.1.4 The *lex mamilla* and other types of degemination

The rule, which is commonly known as *lex mamilla*, regarding consonant degemination, is highly controversial, and descriptions much vary also in recent historical handbooks of Latin. The debate can be summarized in three points:

- (1) degemination occurs only in those words in which the following syllable has a geminate; thus, it would be a case of dissimilation (e.g. *mamma* → *mamilla*). (Juret 1921, p. 236; Graur 1929, p. 103).
- (2) the *lex mamilla* does not exist, because degemination does not occur. The derivative is formed from the original non-geminated stem (Schulze 1904; Weinrich 1958, p. 165).
- (3) degemination occurs whenever, in processes of derivation, the accent shifts to a long stressed syllable (Vendryes 1902, pp. 57-59; Sommer 1914, p. 206; Niedermann 1953[1931], pp. 164-165;

Väänänen 1963, pp. 125; Safarewicz 1969, p. 106; Leumann 1977, p. 184; Giannini-Marotta 1989, pp. 276-279; Weiss 2009, p. 256).

The last definition is the most unitarian and joins together cases in which the accent shifts to a closed syllable with geminated consonants and to open syllables with long vowels, as emerges in the examples shown in TABLE 3.3.

Primitive	Expected derivative	Degeminated derivate
<i>mamma</i> 'breast'	* <i>mammilla</i>	<i>mamilla</i> 'nipple'
<i>currus</i> 'chariot'	* <i>currulis</i> (<i>sella</i>)	<i>curulis</i> 'a magistrate's chair of office'
<i>offa</i> 'lump of food'	* <i>offella</i>	<i>ofella</i> 'small cutlet'
<i>saccus</i> 'sack'	* <i>sacculus</i>	<i>sacellus</i> 'purse'
<i>canna</i> 'reed'	* <i>cannalis</i>	<i>canalis</i> 'channel'
<i>farr-</i> < * <i>fars</i> 'spelt'	* <i>farrina</i>	<i>farina</i> 'meal, flour'
<i>pollen</i> 'fine flour'	* <i>pollenta</i>	<i>polenta</i> 'barley-groats'
<i>cunnus</i> 'the female pudenda'	* <i>cunniculus</i>	<i>cuniculus</i> 'canal' ¹⁶¹

TABLE 3.10 Examples of derivatives of the *mamilla*-type

The autosegmental representation of this kind of degemination (cf. FIGURE 3.4) allows to notice the similarity between the degemination of the type *offa* → *ofella* and *canna* → *canalis* (cf. Giannini & Marotta, p. 278).

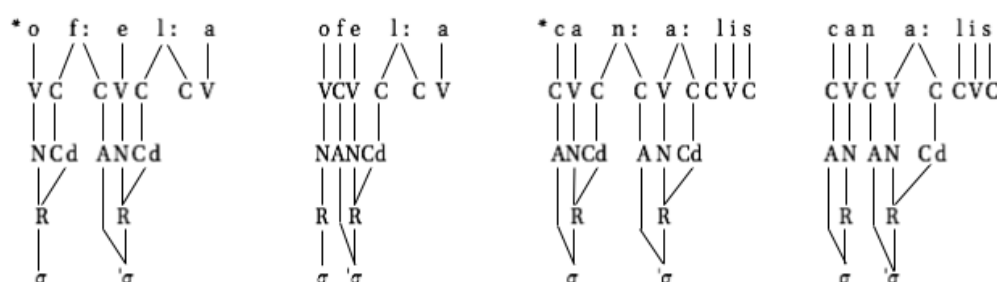


FIGURE 3.9 Autosegmental representation of the degemination of *mamilla* type (Giannini & Marotta 1989, p. 278)

This process clearly shows the tendency towards the lightening of heavy syllables in unstressed position, which would imply, conversely, a correlation between heavy syllable and stress position.

¹⁶¹ For this interpretation of the relation of *cunnus* and *cuniculus*, cf. García Hernández 2016).

This correlation, foreshadowing the inverse relationship among the Romance languages between syllable weight and stress (i.e., syllable weight does not determine the stress assignment, as in Classical Latin, but the stress would determine syllable weight), has been recently investigated, with a thorough statistical analysis, by Marotta (2018), De Felice (2018) and Marotta & De Felice (2019). Other examples of degemination which might be included within this model are the types *faccio* ~ *faciatis* (AE 1999, 894; cf. Agostiniani 1998 for a different explanation) and *annus* ~ *anorum* (quite widespread in inscriptions, cf. e.g., *CIL* 23700) - though the *lex mamilla* mainly operates in processes or derivation – as well as in some Italo-Romance dialects displaying similar cases of degemination in derivatives with stress shift, such as in the dialects of Senigallia (e.g. *riccā* → *rikezza*, cf. Vincent 1989, Marotta 1991) and Gubbio (*mulika* for It. *mollica*; *kapèllo* for It. *cappello*, cf. Mancarella 1970).¹⁶²

3.2 Orthography and syllable weight

3.2.1 Moraic orthography

As previously mentioned, Latin orthography introduces the *geminatio consonantium* around the 2nd century BC. The first instance is commonly dated back to 189 BC in Aemilius Paulus' decree (*CIL* I² 614), though in this text geminated consonants are not written systematically and till the end of the 1st century BC the *geminatio consonantium* is not applied with consistency (cf. *CIL* I², 584, *lex Minucia*, 17 BC, in which geminated consonants are not written). Nevertheless, some sporadic instances of *geminatae* do occur in early inscriptions, around the 3rd century BC, as well (cf. Wallace 2011, p. 18; Mancini 2019a, p. 44). The introduction of this orthographic innovation is attributed by the tradition to the poet Ennius (239-169 BC). According to Festus' testimony (K 374, 5), accounting for the alleged relation of *solitaurilia* and *sollus* 'whole':

¹⁶² More recently, the *lex mamilla* has been interpreted, in the framework of Optimality Theory, as a lightening of a heavy syllable due to an OCP constraint (weight polarity), aiming at maintaining the alternation between heavy and light syllables at morphemic boundaries (!Hv.Hv.Lt. (**mammilla*) ⇐ Lt.Hv.Lt. (*mamilla*)). In this respect, Topinzi (2008) provides a parallel between Hausa, Ancient Greek and Latin. In fact, in Hausa the verbalizing suffix is either [-ataa] or [-aata], depending on the weight of the preceding syllable: if heavy, is [-ataa], if light, is [-aata], with a pattern Lt.Hv.Lt / Hv.Lt.Hv. In Ancient Greek, the comparative and superlative suffixes -τερος and -τατος are joined to the primitive adjective via a thematic vowel which is either ο ([o]) or ω ([ɔ:]) depending on the weight of the preceding syllable: if heavy, -στερος and -στατος (e.g. πτωχός → πτωχότερος / πτωχότατος), if light, -ωτερος and -ωτατος (e.g. νέος → νεώτερος / νεώτατος).

Quodsi a sollo, et tauris earum hostiarum ductum est nome, antiquae consuetudinis per unum l enuntiari non est mirum, quia nulla tunc geminabatur littera in scribendo: quam consuetudinem Ennius mutavisse fertur, utpote Graecus Graeco more usus, quod illi aequae scribentes ac legentes duplicabant mutas semiuocales, et liquidas.

The *mutatio consuetudinis* would have been introduced by Ennius by following the Greek habit (*utpote Graecus Graeco more usus*). Indeed, the town of *Rudiae*, in ancient Calabria (modern Salento), was a Messapic center under the influence of the Doric colony of Taranto. In this respect, Aulus Gellius (2nd c. AD) points out that Ennius used to say to have *tria corda*, being able to speak *Osce, Latine et Graece*. In this section a detailed analysis of the spreading of this orthographic innovation is presented, with an insight on the earliest instances of *geminatio consonantium*.

TABLE 3.4 presents a tentative synchronic analysis of the inscriptions dated to the 3rd-2nd centuries BC. Data have been collected via *CLaSSES* and *EDCS*. Macroscopically, the table shows, for a given region, how many inscriptions presenting at least a case of *geminatio consonantium* are attested for expected phonological long consonants as compared to the number of inscriptions not showing double spelling for expected long consonants.¹⁶³ The inscriptions which have been taken into account are nearly 1000, distributed in 12 regions:

Region	Number of inscriptions with <i>geminatio consonantium</i>	Number of inscriptions without <i>geminatio consonantium</i>	% of inscriptions showing geminated spelling
<i>Asia</i>	4	8	33,3%
<i>Sicily</i>	2	6	25%
<i>Thracia</i>	1	4	20%
<i>Achaia</i>	4	17	19%
<i>Apulia et Calabria</i>	3	14	17%
<i>Rome</i>	9	91	9%
<i>Hispania citerior</i>	1	11	8,3%
<i>Etruria</i>	7	128	5%

¹⁶³ Data have been collected by considering the forms in which a geminated consonant is expected. As for onomastic data, notably the *gentilicia* ending with the *-ius* suffix, it is not certain whether the absence of gemination hints at a phonological singleton consonant or at a singleton spelling; therefore, we have considered only those *gentilicia* in which the spelling with geminated consonant is well-established in later inscriptions, such as *Tullius*.

<i>Latium</i>	18	534	3,2%
<i>Samnium</i>	1	30	3,2%
<i>Umbria</i>	1	60	1,6%
<i>Bruttium</i>	0	21	/

TABLE 3.11 *Inscriptions dated 3rd-2nd century BC showing geminated spellings as compared to inscriptions showing singleton spellings*

A preliminary chorographic and macroscopic analysis would suggest that the habit of the *geminatio consonantium* is much more widespread in those inscriptions found in regions of Greek influence. This first glance is thus consistent with the statements by ancient grammarians and would lead us to hypothesize that the poet Ennius was responsible for the introduction, at an institutional level, of a practice which was influenced by Greek orthography. As a matter of fact, Greek orthography shows the spread of the double spelling around 520-480 BC (cf. Thraette 1980, p. 511). The influence of the Greek model is paralleled by Oscan inscriptions written in the Greek alphabet, in which gemination is quite widespread, as compared to Oscan inscriptions adopting the epichoric script, in which gemination is instead more sporadic (with the exception of the gemination of preconsonantal <s>, cf. below § 3.3), cf. Lejeune (1970, p. 307) and Zair (2016, pp. 150-160).

TABLE 3.5 shows the earliest attestations of *geminatio consonantium* in Latin:

	FORM	INSCRIPTION	PROVENANCE	DATING
(1)	APPIVS	CIL I ² 577	unknown (Etruria)	312-296 BC
(2)	OPP[IVS	AE 1983, 171	Gabii	300-251 BC
(3)	OPPI(VS)	CILXIV, 3186	Praeneste	230-181 BC
(4)	SVESANIO(S)	CIL IX, 1636	Beneventum	268-201 BC
(5)	SVELLIOS	CIL IX, 1636	Beneventum	268-201 BC
(6)	VATERRIO(S)	CIL IX, 1636	Beneventum	268-201 BC
(7)	TIRRI	CIL XIV, 3110	Praeneste	250-201 BC
(8)	VETTEIAI	CIL XIV, 3297	Praeneste	250-101 BC
(9)	APPIOS	CIL VI, 1280	Roma	296-212 BC
(10)	HINNAD	CIL VI, 1281	Roma	211 BC
(11)	SABBIO	CIL XV, 6929	Roma	200 BC
(12)	COTTA	CIL I 2931	Vulci	200 BC (?)
(13)	CAVSSA	CIL I ² 612	Halesa	193 BC
(14)	COTTAS	CIL I ² 2877	Corleone	252 BC
(15)	SVMMEIS	CIL I ² 364	Falerii	200-171 BC

TABLE 3.12 *Early instances of geminatio consonantium in Latin inscriptions*

The earliest attestations, dating back to the 3rd century BC, are mainly attested in Central and Southern Italy, including Sicily. The dating of some inscriptions, however, is not exempt from doubts (cf. Di Vita 1955). Notably, the collected forms are concerned with proper names. This fact is not surprising, since proper names, as is known, are more permeable to innovations. Moreover, phonological gemination is more common in proper names, due to both expressive gemination and the morphemes involved in onomastic formations, especially the **(i)io* suffix.

An analysis of these inscriptions is below presented:

- The first attestation of *geminatio consonantium* in a Latin name appears in an Etruscan inscription (*CIL* 1 577 = *CIL* 11 6716,2 = *TLE* 777) datable as early as the end of the 4th century BC (1). It is a gemstone depicting the *Salii* priests, stored at the Archeological Museum of Florence. The provenance is unknown, but it certainly comes from Etruria. The text shows the formula *APPIVS ALCE* (cf. FIGURE 3.5), i.e. ‘Appius offered’ (cf. Peruzzi 1990, p. 235; Torelli 1997).

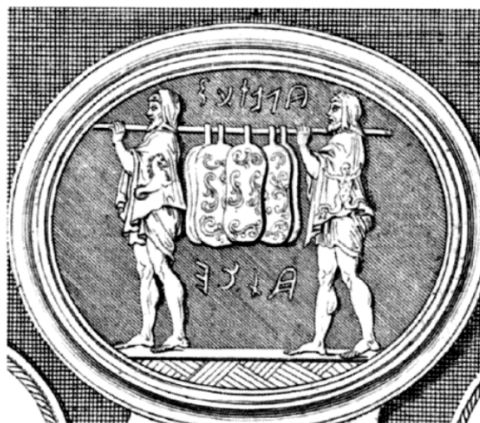


FIGURE 3.10 Copy of the gemstone representing the *Salii* (*CIL* I 577). A.F. Gori, *Antiquitates Etruscae* (Nuremberg, 1770), pl.

61.1

The text raises some issues. The mentioned Appius is probably to be identified with Appius Claudius Caecus (cf. Torelli 1997; De Grummond & Pieraccini 2016, p. 264), censor in 312 BC and consul in 296 BC, also known in grammatography for the introduction of the spelling reform of rhotacism. Appius Claudius is likely to have offered (*alce*) this gemstone to Etruscan patricians (possibly members of the *gens Clavtie* from Caere), with whom he probably had a close relationship, as is suggested by the use of the *praenomen*, which was limited to private contexts in the Latin onomastic system (cf. Salway 1994). This present, probably hinting at the fact that Appius Claudius was member of the college of *Salii*, bears the dedication written in Etruscan, the recipients’ language. The writing of the

name *Appius* in Etruscan script implies the rendering of Latin /o/ with <V> (in this period, we would expect *Appios* rather than *Appius*), since the Etruscan script did not have <O>. The most remarkable element, which has been cursorily noticed (cf. Torelli 1997; De Grummond & Pieraccini 2016), is the presence of gemination, which is not found in Etruscan phonology and orthography. While the presence of <V> might be explained as the result of graphemic interference with Etruscan, this explanation cannot account for <PP>. Rather, it is conceivable that the gemstone was engraved by a Greek artisan writing in Etruscan script. Indeed, Greek workshops were widespread in Etruria, especially in Caere (cf. Cristofani 1983). This particular example shows one of the channels of penetration of the geminated spelling in Italy.

- Some names showing the *geminatio consonantium* are attested in inscriptions from Praeneste or the close Gabii (2-5). More precisely, the name *Oppius* is written with double consonant in two inscriptions dated respectively to the first half and the second half of the 3rd century BC (2-3). However, *Oppi(us)* in (3) has been also dated to the second half of the 2nd century BC (Pensabene, Franchi De Bellis), though a more recent paleographical examination (open straight angle p) makes conceivable this backdating (Iorizzo 2011).¹⁶⁴ The name *Oppius*, characteristic of Italic onomastics (cf. Schulze 1904, p. 276), is particularly widespread at Praeneste and in the neighborhood areas since the 4th century BC, and is the unique *nomen gentile* attested in Praeneste to be continuously documented until the Imperial age. The *gens Oppia* from Praeneste was particularly tied to the cult of the *dea Fortuna* and in a later period was influential in Delos, where the *Oppii, negotiatore enrichis*, had a special role in urbanistics (cf. Le Glay 1985: 205). The *Oppius* in the inscription from Gabii is found in a dedication to the temple of Fortuna (maybe paralleled by a similar inscription, albeit fragmentary, [...] FORTUN[A...] / [...] L O[...], possibly *L(ucius) O[ppius]*). The geminated spelling in this name is common from the 1st century BC, whereas in early inscriptions the singleton spelling is more frequent, with the exception of these two examples. Oscan inscriptions show a similar fluctuation, cf. *úppiis* (Cp 36 /Ve 4) and *uppieis* (Cm 14) vs. *upii[s]* (Po 92) and *οπιεσ* (Lu 40 / Ve 185).
- Another inscription from Praeneste (CIL 14, 3110) bears the name TIRRI (4), which could be the genitive of either *Tirrius* or *Tirrus* (cf. Hirata 1967, p. 79). This name is no more attested in Latin inscriptions and further hypotheses upon the gemination are inconclusive. We have another attestation of this name only in a Faliscan inscription, from the necropolis of Ponte Lepre, (Bakkum 155 = Giacomelli 105) in which the form *Tiroi* (either genitive or dative) is found.

¹⁶⁴http://www.edr-edr.it/edr_programmi/res_complex_comune.php?do=book&id_nr=EDR111181&partId=1

- The form VETTEIAI¹⁶⁵ in *CIL* XIV 3297, from Praeneste, is not of certain dating. According to Franchi De Bellis, the inscription dates back to the end of the 2nd century BC but an earlier dating cannot be ruled out, cf. EDR 120856¹⁶⁶.
- In the same inscription from Benevento (*CIL* IX, 1636), dated 268-201 BC, three personal names showing the *geminatio consonantium* are attested (4-6). This official inscription bears the names of seven quaestors, named by means of the formula *praenomen, nomen* and patronymic. The *gentilicium Suessanius* (4) derives from a choronym indicating the provenance from Suessa Aurunca, where the Romans have founded a colony in 313-312 BC. The geminated spelling is regular in this name, with the exception of *Suesanus* (*CIL* 1 2947, Capua, 105 BC), and *Suesanus* (*CIL* 10 573, 3rd century AD, Suessa Aurunca). The *gentilicium Suellios* (5) is quite widespread among inscriptions from Samnium and Apulia and is always written with the geminated spelling. In Oscan inscriptions, this name is always attested with gemination as well, cf. *suellies* (MV 12), *sullia* (Pg 51). The name *Vaterrius* (6), belonging to the onomastic type *Vatinius, Vatronius*, Etr. *Vatatial* (cf. Schulze 1904, pp. 249-250), shows fluctuating spellings: we may find only three examples of gemination, i.e., in addition to the examined inscription, *Vateria* (*CIE* 5806, 75-51 BC, Tuscania) and *Vaterri* (*CIL* VI 38929, 70-31 BC, Rome). Singleton spellings are more frequent.¹⁶⁷ The gemination of /r/ before /j/ is not common in Latin (cf. § 3.5) but is quite widespread in Oscan, cf. for instance *vikturrai* (Sa 24). All the discussed examples show instances of gemination ascribable, rather than to Latin phonology, to the phonological and writing systems of the source language.
- The following inscriptions attesting to an early use of *geminatio consonantium* are already known (cf. Di Vita 1963, Wallace 2011, Mancini 2019a), though they are not exempt from doubts as regards their dating. The form APPIOS (9), for example, in *CIL* I² 17 (= *CIL* VI 1280) is supposed to refer to Appius Claudius Pulcher, consul in 212 BC. However, since this inscription is known only by means of an apograph, further examinations allowing a surer dating are impossible. One cannot rule out the hypothesis, as Garucci (1877 n° 868) pointed out, that the mentioned *Appios* is to be identified with another member of the *gens Claudia*. However, Di Vita (1963) is inclined to an early dating,

¹⁶⁵ According to Franchi De Bellis, the form <VETTEIAI> would represent an early instance of the outcome *-kt- > -tt-* (see CHAPTER 4). Nevertheless, as Mancini (2000a, 2000b) points out, *Vect-* cannot represent the underlying form of the name *Veteius/Vetteius*, which is more likely an onomastic borrowing from Etruscan *veti* [...]. Un *Vecteia* nel dialetto di Preneste non è mai esistito” (Mancini 2000b).

¹⁶⁶ http://www.edr-edr.it/edr_programmi/res_complex_comune.php?do=book&id_nr=EDR120856&partId=1

¹⁶⁷ *Vaterius* (*CIL* VII 336, Maglona, 122-130 AD; *CIL* VIII 18471, Lambaesis; *CIL* VIII 2403, Thamugadi); *Vaterio* (*CIL* VI, 28372, Roma); *Vateria* (*CIL* VI 28373, Roma, 30 BC – 30 AD); *Vaterio* (*CIL* VI 35323a, Roma); *Vateria* (*CIL* IX 2519, Saepinum), *Vaterie*, *Vateri* (*CIL* X 7602, 1st c. AD, Carales), *Vateriae* (*CIL* X 7603, 1st c. AD, Carales), *Vaterio* (*ILSard*-01, 67, 171-300 AD, Carales); *Vateri* (*Theoroi* 96, Samothrace)

both for the presence of the *-os* ending (though, it must be said, internal linguistic clues could be misleading for the dating of an inscription, and archeological and paleographical criteria are preferable) and the presence of hooked L and half-closed P (according to Sirmond's testimony, who had examined autoptically the inscription). If we accept such an early dating, the presence of the *geminatio consonantium* might be attributed to the influence of the Greek model, in a period in which philhellenism was spreading among Roman patricians.

- The form HINNAD (12) can be dated with certainty, and in this case the Greek model is evident. It is attested in one inscription dated to 211 BC, inscribed on the basis of a statue which M. Claudius Marcellus brought from Enna to Rome. Gemination is due to the transliteration of Gk. Ἑννα (cf. Wallace 2011).
- The name <SABBIO> (11), attested in a lucerna found on the Esquiline, is of Semitic origin (cf. Solin 1983, p. 637; Masson 1971) and was adapted into Latin morphology either as *Sabbio*, *-onis* or *Sabbius*, *-ii*. This name is attested throughout Latin documentation with double consonants (sometimes with the <MB> spelling, accounting for the dissimilation of [bb], similarly to *sabbatum*, cf. § 3.7). Since this name is widespread among Greek inscriptions as well since the 2nd century BC (cf. Σαββίλωνος, *EAD* XXX 10), the influence of Greek script cannot be ruled out also in this case, although the lack of any contextual clue related to this inscription may lead to inclusive hypotheses.
- Other two early attestations of *geminatio consonantium* are attested in Sicily (13-14). The examples from Sicily have been discussed by Di Vita (1963) and are also reported by Mancini (2019a). They concern the personal name *Cottas* and the word *caussa*. The dating of the inscription from Corleone has long been debated. Di Vita (1955) proposes an early dating, i.e., 252 BC. While Deggrasi (1962) excludes such a dating on the basis of the presence of the *geminatio consonantium*, Di Vita (1963) accounts for this early dating on the basis of paleographical considerations (hooked L). It is worth noting that *TM*¹⁶⁸, following Kreiler (2011), dates this inscription to 144 BC. The presence of a Greek ending, as well as the provenance of the inscription, would suggest the influence of the Greek model, which could be attributed either to a Greek scribe, or to a philhellenic choice by L. Aurelius Cotta himself.¹⁶⁹

¹⁶⁸ <https://www.trismegistos.org/text/175816>

¹⁶⁹ «Senza contare che questo scrivere alla greca in un miliario romano che provenga dalla Sicilia appare perfettamente ovvio, ancora più che nella seconda metà del II sec. a.C., alla metà del III, in un periodo cioè in cui è perlomeno da supporre che il greco fosse ancora più diffusamente parlato e scritto nell'isola di quanto non lo fosse cento e più anni dopo. E non sarà fuori luogo, a questo punto, il richiamare alla memoria anche l'appoggio continuo dato da Ierone II ai Romani in Sicilia nel corso della prima guerra punica, appoggio che si tradusse spesso nell'invio sia di mezzi sia di uomini, questi certo largamente grecofoni» (Di Vita 1963, p. 484).

- The form COTTA with consonant gemination is found in another milestone, from Vulci (11). Bartoccini (1961) dates this inscriptions to 200 BC, whereas Deggrasi (1962) to 144 BC. Unfortunately, the sole presence of the *cognomen* does not allow to identify with certainty the mentioned Cotta.
- An inscription, now missing, from Halaesa, is a dedication to L. Cornelius Scipio, praetor in Sicily in 193 BC. It shows the form CAVSSA (*honoris caussa*).
- Lastly, the Faliscan cooks' slate (CIL 11 3078) shows the geminated form SVMMEIS. The slate is dated to 200-171 BC. From this period onwards, the *geminatio consonantium* slightly spreads out in the Latin writing system, until its systematic application starting from the end of the 2nd century BC.

Data discussed so far allow to draw the following picture. The influence by the Greek model in the introduction of the *geminatio consonantium* in Latin orthography is evidenced non only by the statements by ancient grammarians, but also by epigraphic data. This fact stands out both by analyzing the whole geographical distribution of the inscriptions showing the *geminatae* in the period 3rd-2nd centuries BC, and by examining specific examples that display the gradual surfacing, from contingent and random phenomena to the transcription of the names of Roman patricians in the period of the Punic Wars.

Possibly, as Mancini (2019a) has recently pointed out, the continuous comparison with the Greek (alphabetic) model might have favored the diffusion of this habit among the poets of the *collegium poetarum* – first and foremost Ennius – and among the philhellenic circles at the end of the Second Punic War. From this period, the *geminatio consonantium* progressively enters Latin orthographic system. The adoption of the *geminatio consonantium*, however, cannot be reduced to a mere orthographic conversion from the Greek habit to Latin orthography, and therein lies the difference between the episodic appearance of the *geminatio* in epigraphic documentation (such in the case, entirely marginal, of APPIVS found the Etruscan inscription) and the adoption as an institutionalized linguistic choice among the promoters of this reform. The writing of poetic texts, necessarily shaped by the Greek model, may have determined the need of the adoption of an iconic orthographic device aiming at establishing the isomorphism between the graphemic and syllabic levels (cf. Prosdocimi 2002, pp. 233-238). A strong parallel is represented by the spread of other iconic devices for representing two moraic projections, all ascribable to the *collegium poetarum* and, in particular, to the figures of Ennius and Accius. This topic has been recently addressed by Mancini

(2019a, 2019b, 2020b), and for this reason we shall present only a concise summary. It is worth noticing that the gemination of preconsonantal <s>, which will be analyzed in § 3.3, as well as other instances, less documented, of preconsonantal gemination, fits into this picture of non-opaque spellings patterning after the Greek model.

A parallel example, brought to light only in recent studies, is represented by the spelling <xs> for /ks/, allowing the isomorphism two letters : two sounds (cf. Cotugno & Marotta 2017). Indeed, this digraph permits the explication of the coda and onset associated to each segment. The earliest instances can be found in the *Senatusconsultum de Bacchanalibus* (CIL I², 581 = ILLRP 511), dating back to 186 BC, wherein the form <EXSTRAD> occurs twice. We are, therefore, in an era almost contemporary to the progressive spread of the *geminatio consonantium*. The analysis by Mancini (2019a), carried out on the whole corpus of primary sources, highlighted how the driving force for the spelling <xs> must have been exactly the diffusion of the *geminatio consonantium*: «la scrizione <xs> fu introdotta a séguito di una “cospirazione grafemica” che diede proiezione diretta a ossature sillabiche ancora opache dal punto di vista della rappresentazione grafica». If within the early Imperial period this use is typical of official and well-finished texts, since the Christian era it progressively secludes itself at informal texts, and is recessive as compared to <x>, which, on the other hand, found strength of greater diffusion because of the superficial equivalence with the Greek alphabet (i.e.. <x> = <ξ>).

To the figure of Accius, the artigraphic tradition assigns the proposal of two iconic spellings equally aimed at the isomorphism between the graphemic and the syllabic levels, i.e., the digraph <ei> for /i:/ and the *geminatio uocalium*. As for the spelling <ei> for /i:/, Marius Victorinus (K 4,4; Mariotti 1967, p. 71) informs us that, according to Accius' proposal, the spelling <ei> was to be extended to all the segments /i:/, independently, therefore, of the fact that /i:/ was etymological or resulting from the monophthongization of /ej/ (*cum longa syllaba scribenda esset, duas vocales ponebat, praeterquam quae in “i” litteram inciderant; hanc enim per “e” et “i” scribebat*). It should be noted, incidentally, that it was clear among the ancient grammarians that this spelling had a suprasegmental value. The reason for this proposal will be sought in two concomitant factors: on the one hand, the attempt to imitate the Greek model, on the other the need to put order in the Latin orthographic system, which, around the 2nd century BC, as a consequence of the processes of monophthongization we have previously discussed, was characterized by a chaotic distribution of allographs. The opposition <ei> (/i:/) ~ <i> (/i/) allowed, therefore, a greater level of functionality

and consistency between the graphemic and the phonological levels. Notoriously, the use of <ei> is characteristic of legal and institutional epigraphs, but it also infiltrates the informal epigraphic documentation (cf. Nikitina 2015, pp. 58-70; Adams 2016, pp. 110-111; Mancini 2020b).

On the other hand, the case of the *geminatio uocalium* is somewhat different, since, in truth, there was never a *geminatio uocalium* in Latin orthography. The epigraphic evidence attesting to this use must be traced back to a graphic dialectism within allogot communities, at a time when the Osco-Umbrian languages were still vital. The gemination of the vowel, in fact, was widespread in the Oscan, and, partially, Umbrian writing cultures (cf. Lazzeroni 1956, p. 127, ft. 1; Lejeune 1975). The *geminatio uocalium* makes a brief appearance in Latin epigraphy between 135 BC and the first half of the 1st century BC (cf. Prosdocimi 2015, p. 123): it is most often documented on the vowel /ā/ (cf. e.g. AARA, *CIL* I² 1439), while few examples of <OO> are documented (e.g. VOOTVM in *CIL* I² 365). As for <II>, on the other hand, we have only one attestation (VIITAM in *CIL* I² 354). The scarcity of attestations of *geminatio uocalium* for /ī/, for whose notation the spelling <EI> was employed, is to be attributed to the possible confusion with the cursive writing <II> of /e/. The superimposition of the Oscan and Latin *geminatio uocalium* is supported both on the basis of the examination of the geographical and onomastic distribution, carried out by Lazzeroni (1956), and on the basis of the linguistic analysis conducted by Vine (1993).

It is worth noticing, as Mancini (2020b) observes, the suprasegmental nature of this dittography, which occurs, both in Oscan and Latin, for 90% of cases on open syllables, thus opposing monomoraic nuclei to bimoraic ones. The suprasegmental nature of the sign is also testified by the grammarians: *longae syllabae* (SCAUR. K. VII 18, 12), *porrectae syllabae* (QUINT. inst. 1, 7, 14), *ubicumque producitur syllaba* (VEL. K. VII 55, 25), *longa syllaba* (MAR. VICTORIN. K. VI 8, 13).

The link with the figure of Accius is underlined by all the aforementioned grammarians (Priscian, on the other hand, refers in general to *vetustissimi*; K. II 298, 4; 10), as well as by the polemic of Lucilius reported by Terentius Scaurus (K. VII, 18, 18 = Marx fr.x = Krenkel fr. 345-8). In the light of these references, some scholars, first of all Ritschl (1878, pp. 150-157), had hypothesized that Accius had been the promoter of an orthographic reform, and that the epigraphic testimonies would bear trace of it. In reality, there was never a real Accian reform of the *geminatio uocalium*: more simply, the grammarians refer to a practice, used by Accius, which fits into a coherent framework of isomorphic spellings between the graphemic and the syllabic levels promoted by the poet.

The lack of parallelism in noting the syllable weight of syllables with either vocalic or consonantal coda becomes even more evident if other iconic instruments of *adiectio*, whereby the

syllabic length was indicated, are taken into consideration, i.e., the *apex* on one side and the *sicilicus* on the other. In fact, it should be noted that in the testimony by Terentius Scaurus the *geminatio uocalium* appears redundant and unnecessary because, in Latin orthography, another sign is used to note long vowels, namely the *apex* (*Accius geminatis vocalibus scribi natura longas syllabas voluit, cum alioqui adiecto vel sublato apice longitudinis et brevitatis nota posset ostendi*). In the next paragraph we shall try to deepen the relationship between *apex* and *sicilicus*.

3.2.2 Paragraphematic signs

As is marginally known in epigraphic studies, random inscriptions bear trace of a paragraphematic sign whereby consonant length is noted. This diacritic is known to tradition with the name of *sicilicus*, probably for its sickle-shape (¹⁷⁰). Three grammarians' testimonies account for the use of the *sicilicus*:

Nisus, 1st AD (K, 7,80, *apud Velius Longus*): Nisus auctor est ut 'comese' et 'asuese' per unum 's' scribamus et dicit rationem, qui iuxta productam uocalem <geminata add. Keil> consonans progredi non soleat, et quoniam antiqui non geminauerint <consonantes add. Keil>, sed loco geminationis notam superposuerint.
M, Vict., 4th AD (K, 6,8): ...antiqui...consonantes litteras non geminabant, ut in his, ANNIVS, MARCELLVS, MUMMIVS (Oliver 1966, MEMMIVS codd.) et cetera his similia, sed supra litteram quam geminari oportebat sicilicum imponebant (ponebant Keil), cuius figura haec est A (signum sic ostendit B; om. Z; deest A), idque erat signum geminandi, sicut apparet in multis adhuc ueteribus ita scriptis libris.
Isid. Or. 1.27.29: sic et ubi litterae consonants geminabantur, sicilicum superponebant, ut 'cella', 'serra', 'asseret'. Veteres enim non duplicabant litteras, sed supra sicilicos adponebant, qua nota admonebatur lector geminandam esse litteram.

On the interpretation of these passages, we shall return later. First, it is worth dwelling on the epigraphic evidence of this sign. Unlike the *apex*, a similar paragraphematic sign employed for the notation of long vowels, we may find very scarce attestations of the *sicilicus*.

(1) Form: SABELIO

Text type: *tituli sepulcrales*

Provenance: Aquileia

¹⁷⁰ This correspondence is made difficult by the fact that *sicilis* 'sikle' had long vowel, as suggested an Ennian verse (A. 507), cf. *DELL* s.v.; whereas in *sicilicus* is short, as it would be evidenced by a verse in Palemon's *De Ponderibus*; however, cf. W-H., lemmatizing *sicilis* due to Romance outcomes, showing syncope (cf. vegl. *sekla*).

Date: 50-25 BC

Publication: CIL 5, 1361 = CIL 1, 2212



FIGURE 3.11 Detail of CIL 1, 2212

The *sicilicus* is marked upon <L>. A detail unnoticed so far is the sign at the top right of <A>, which is not transcribed in printed editions. The similarity between the two signs is quite evident, so that it is conceivable that the first one may be interpreted, if not as an *apex* upon <A>, as an instance of *sicilicus* referring to : the space between <A> and may account for the distance between the diacritic and the consonant to which it possibly refers. The stonecutter may have engraved the *sicilicus* previously than , with the purpose of tracing along the perpendicular line of this sign; yet, since this alleged *sicilicus* was carved too close to <A>, extending under the vertical line of <A>, it was not possible to carve under that sign. We have no attestations of a **Sabellius* with double . However, the base *Sab-* is sometimes spelled with double , cf. e.g. <SABBINI> (CIL 5 3690) and Σαββῖνος (IG XIV 2348, from Aquileia as well).

(2) Form: OSA

Text type: *tituli sepulcrales*

Provenance: Atella (Stant'Arpino)

Date: unknown

Publication: CIL 10, 3743 = D 7971

Missing inscription. The text is reported in Dessau and in CIL 10 3743, cf. FIGURE 3.7.

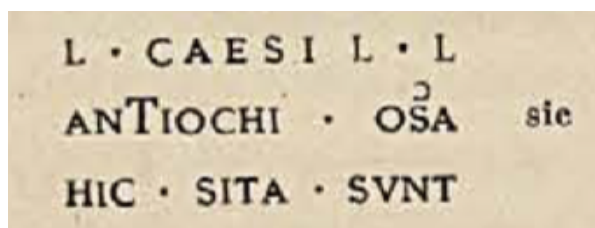


FIGURE 3.12 Reproduction of CIL 10, 3743

(3) Form: [AND]ROMACA ?

Text type: *tituli sepulcrales*

Provenance: Massilia (Marseille)

Date: unknown

Publication: CIL 12, 414 = CAG 13-03, 65



FIGURE 3.13 *Detail of CIL 12, 414*

The text is fragmentary and is supplemented as <[AND]ROMACA> (rather, it would be more conceivable [AN]ROMACA, cf. for instance CIL 11 7049, since the lacuna may be better filled out by two letters). This name is quite widespread in Latin inscriptions, but a form with the gemination of <C> is never found in Latin or Greek texts. Alternatively, as was already proposed by Mommsen, we may consider the hypothesis that this form does not hint at the name *Andromacha*, but at a name ending in *-acca*, following the pattern of some Germanic onomastic types (e.g., *Frontaccus*, *Andrecco*, cf. Neumann, Hettrich, & van Nahl 2008, pp. 34-35).

(4) Form: MVMIAES

Text type: *tituli sepulcrales*

Provenance: Roma

Date: 1-50 AD

Publication: CIL 6, 21736

This inscription shows, besides the *sicilicus* upon <M>, the *apex* upon the <I> of <VIXIT> (cf. PICTURE 3.9).



FIGURE 3.14 *Slate published in CIL 6 21736 (sicilicus and apex)*

As is evident from these scarce and random attestations, it is not possible to reconstruct a plausible framework of the *sicilicus*. However, it is worth presenting some hypotheses by analyzing grammarians' passages and relating the *sicilicus* to the *apex*. In fact, according to Oliver (1966), the *sicilicus* and the *apex* share the same origin. A piece of evidence would be provided by the fact that the earliest instances of the *apex* do not show the traditional oblique line shape, similar to an acute accent, but a hooked shape, cf. CIL I² 679 (104 BC) and CIL I² 797 in FIGURE 3.10.



FIGURE 3.15 Details of CIL I² 679 and CIL I² 797

Although the examined attestations of the *sicilicus* belong to the Late Republican period, it is plausible that this sign was employed previously than the introduction of the *geminatio consonantium*. On this purpose, it is worth focusing on grammarians' testimonies. Nisus, cited by Velius Longus, is the most ancient testimony (1st century AD). He stresses that the *nota geminationis* was widespread among the *antiqui*. The causal relation with the absence of the *geminatio consonantium* (*quoniam [...] non geminaverint*) suggests that this pragraphematic sign was used before the introduction of the *geminatio consonantium*. Similar statements can be found in Marius Victorinus (*antiqui consonantes litteras non geminabant [...] sed supra litteram quam geminari opoterbat sicilicum imponebant*) and Isidore (*veteres enim non duplicabant litteras, sed supra sicilicos adoponebant*). A further piece of evidence in this respect is provided by Fointaine's (2006) analysis on the prologue of the *Manaechi* (end of the 2nd century BC), in which we may read: *adeo hoc argumentum graecissat; tamen non atticissat, uerum sicilicissitat*. The three verbal forms *graecissat*, *atticissat* e *sicilicissitat* hint at the fact that the comedy is settled at Athens and follows the New Comedy model; the form *sicilicissitat* would refer, in the first instance, to the Sicilian Comedy by Epicharmus and Rinton, but also, with a *portmanteau*, to the fact that the comedy has as main

characters two twins.¹⁷¹ If the *sicilicus* was not widespread in the orthographic habit at the time of this comedy, it would be unlikely that the public was able to get the hint. However, the problem is still that, despite the discussed grammarians' testimonies and the possible allusion found in Plautus, there is scarce evidence of the habit of signaling long consonants by means of this diacritic. This documentary gap may be certainly ascribed to the random nature of the epigraphic remains. This explanation, however, is not sufficient. If this sign was supposed to be so widespread to be mentioned by grammarians, we would expect a higher number of attestations as evidenced by the sample, though not representative, of the available inscriptions. It is therefore plausible that this writing habit, as is suggested by Fontaine (2006), was employed, rather than in exposed writings, in manuscripts. This would be suggested by the shape of the sign, not suitable for being carved, and the reference made by Marius Victorinus, according to whom the *sicilicus* was still in use at his time (4th century AD) among the *libri veteres*, i.e., we may suppose, old-fashioned books.

If the *sicilicus* was used for ancient books before the introduction of the *geminatio consonantium* (around, say, the 3rd century BC), it is likely that also the *apex* was employed with the same function, possibly for the metrical annotation of poetic texts (notably tragedies and comedies). A common origin of these two signs may be suggested by the fact that the *apex*, in the earliest attestations, shows the same rounded shaped as the *sicilicus*. Both these marks, therefore, as Oliver (1966) points out, would be a *nota geminationis*, indicating the length of the segment, either vocalic or consonantal, upon which is placed (or, rather, the coda associated to either a vowel or a consonant).

Evidence of a common function of the two signs is further suggested by some examples in which the *apex* is placed not on the vowel but on the consonant (e.g., EXPEĆTATÁE in *CIL* 11, 4215). These cases, albeit marginal, would suggest that this diacritic did not mark segmental length, but syllable length, regardless of the type of segment associated with coda position. A significant example is represented by cases in which words stably attesting to the *geminatio* appear written with a sign, reported by the editors as *apex* above the vowel, which is actually placed between the consonant and the vowel (it is therefore a superordinate element with respect to the segment). See, for

¹⁷¹ A link between the verb *sicilicissitat* and the noun *Silicia* is morphologically problematical, as Fontaine (2006) points out. In fact, *sicilic-issitat* implies *σικιλικ-ίζει or *σικελικ-ίζει. If Plautus had aimed to render 'acting in the Sicilian way', he would have coined *sicelissat* or *sicilissat*. The affix *-iko-* may hint at a choronym of the type *Italicus*, i.e. *Siculus* > **Siculicus* / **Sicilicus*, but this form is never attested.

example, the name *Vettius*, stably showing the geminated spelling, in *CIL* 6, 28668 (Roma, 1st century AD), cf. FIGURE 3.11:



FIGURE 3.16 Details of *CIL* 6, 28668

If we put these pieces together, an interesting picture emerges, which is probably to be related to the evolution of the Latin phonological system. It is likely that, at first, the habit of noting syllable weight by means of a *nota geminationis* was widespread. During the period of the Second Punic War, the long syllables with consonantal coda would have been noted by means of the *geminatio consonantium*, according to an isomorphic writing model. Syllables with bimoraic vowels, on the other hand, such as the long open syllables would not have been noted through the dittography, possibly in the intentions of Accius, who aimed to obtain a symmetrical coherence within the orthographic system. This is notable, since bimoraic vowels are not only the most frequent syllables in Latin, see Marotta and I. De Felice (2019), but are also those syllables on which the apex mostly occurs, according to the statistics by García González (2015, p. 51). In the Latin orthography, and in particular in the writing of official texts, the syllables with bimoraic vowels would have continued to be noticed through a paragraphematic sign. This would have led to a progressively more stylized trait due to the epigraphic support. Therefore, two levels of asymmetry emerge. One, at a certain point, the notation of long consonants is applied systematically, while long vowels are only occasionally signaled; two, the means of adiectio responds to two different visual principles, one being a dittography and the other a diacritic.

The two different iconic principles for the representation of /CV:/ and /CVC/ syllables and the different frequency of use could respond to a logical and coherent motivation. The dittography for consonant quantity, in fact, also makes explicit the correlate of length; vice versa, it is unnecessary to mark the /V:/ ~ /V/ opposition in such a way, with the risk of making the *condicio scribendi* non *expedita* (cf. VEL. K. VII 55, 25: *nam nec Accium secuti sumus semper vocales geminantem, ubicumque producitur syllaba, quoniam expedita debet esse condicio scribendi*). In fact, the opposition /V:/ ~ /V/ had also a timbric correlate, which was sufficient to mark the distinction and to make unnecessary to explicit the length of the vowel in the writing, except in particularly well-finished texts. As proof

of this, the statistics by García González (2015, p. 51) on the occurrence of the *apex*, which is more documented on /ā/ in open syllables, in which the quantity is not accompanied by timbric correlates, as is evidenced by the Romance outcomes.

3.3 Gemination of preconsonantal s-

In this section we shall dwell on a particular case of gemination, i.e., the gemination of preconsonantal <s>. This issue, though being recorded in the traditional historical grammars of Latin (c.f. Lindsay § xx; Leumann 1977 § 223), deserves a detailed analysis, in the light of the previously discussed question of the syllabification of sC in Latin and Greek (cf. CHAPTER 2).

Primary sources show approximately 160 instances of the gemination of preconsonantal <s>, mainly before voiceless stops /t/, /k/ and /p/. The earliest attestations date back to the 2nd century BC. Forms such as <COSSTANTIA> (*ICUR*-8, 22396), in which gemination may be due to compensatory lengthening after the drop of /n/, independently from the preconsonantal position (cf. spellings such as <CENSOR>, *CAG*-59-02, p 230 and <MENSSES> *AE* 1974, 121), as well as forms in which gemination results from two identical /s/ adjoining one another (e.g. <TRANSSCENDIT> *CIL* 3, 107 <TRANSSCRIBENDAS> *CIL* 6, 32380), have been excluded.

TABLE 3.6 shows the list of the main relevant forms, divided, for the reasons we shall examine later, according the part of speech.

	Lemma	Relevant forms
Onomastics	<i>Abascantus</i>	ABASSCANT- (<i>CIL</i> 10, 588, 71-130 AD, <i>Salernum</i>)
	<i>Antistius</i>	ANTISST-/ANTESST- (<i>CIL</i> 3, 14 (p 967), 199 AD, <i>Alexandria</i> ; <i>CIL</i> 6, 11920, 101-200 AD, <i>Roma</i> ; <i>CIL</i> 6, 7677 (p 3432), <i>Roma</i>)
	<i>Aravisca</i>	ARAVISSCAM (<i>Hild</i> 120, 51-100 AD, <i>Carnuntum</i>)
	<i>Arescusa</i>	ARESSCVSA (<i>CIL</i> 9, 3446, 101-200 AD, <i>Peltuinum</i>),
	<i>Asclep-</i>	ASSCLEPI(AE) (<i>CIL</i> 13, 1139, <i>Limonum</i>); ASSCLEPIODOTE (<i>CIL</i> 6, 12504, 117-150 AD, <i>Roma</i>)
	<i>Aspercus</i>	ASSPERCIVS (<i>CIL</i> 13, 314, <i>Salechan</i>);
	<i>Asper</i>	ASSP[RIS] (<i>AE</i> 1930, 28, 212 AD, <i>Bonna</i>),
	<i>Asta</i>	ASSTA (<i>CIL</i> 3, 4455, 71-100 AD, <i>Carnuntum</i>)
	<i>Augustus</i>	AVGVSSSTE (<i>CIL</i> 2-14, 849, <i>Terraco</i>), AVGVSSSTAL[I] (<i>CIL</i> 14, 1068, 171-230 AD, <i>Ostia Antica</i>), AV]GUSSTI (<i>AE</i> 1972, 174, 63-70 AD, <i>Lucus Feroniae</i>), AVGVSSTI (<i>CIL</i> 4, 3340, 45, <i>CIL</i> 4, 3340, 45, 56 AD, <i>Pompei</i>), [AVG]VSSTVS (<i>CIL</i> 13, 10010, 234e2).

<i>Auscv</i>	AVSSCV[S] (<i>CIL</i> 3, 11720, 1-200 AD, <i>Noricum</i>),
<i>Austius</i>	[A]VSSTIA (<i>CIL</i> 9, 2871 (p 1191), 101-300 AD, <i>Histonum</i>)
<i>Caestinus</i>	CAESTINO (<i>CIL</i> 3, 12316, 306-307 AD, <i>Nagajce</i>),
<i>Callist-</i>	CALLISSTE (<i>CIL</i> 2, 2896, <i>Tritium Megallum</i>), CALLISSTIANE (<i>ICUR</i> -3, 7481, 301-400 AD, <i>Roma</i>).
<i>Callistrat-</i>	CALLISSTRATE (<i>NSA</i> -1933-476, 101-200 AD, <i>Roma</i>), CALLISSTRATO (<i>ICUR</i> -8, 21708, 351-400 AD, <i>Roma</i>).
<i>Cast-</i>	CASSTAES (<i>CIL</i> 5, 8898, 301-400 AD, <i>Rome, Isola Comacina</i>); CASST[(<i>NSA</i> -1933-453; <i>Roma</i>); CASSTI (<i>CIL</i> 13, 10010,0478a, <i>CIL</i> 13, 10010,0478p1, <i>CIL</i> 13, 10010,478w7), CASSTV (<i>CIL</i> 4, 8837, 79 AD. at the latest, <i>Pompei</i>)
<i>Cest-</i>	CESTVS (<i>Pais</i> 1080,134, <i>Aquileia</i>); CESSTI (<i>CIL</i> 3, 12014,198aa, <i>CIL</i> 3, 12014,198ab, <i>Virinum</i>), CESSTIVS (<i>CIL</i> 12, 3576, <i>Nemausus</i>)
<i>Charistratus</i>	CHARISSTRATO (<i>AE</i> 1991, 292, 101-151 AD, <i>Roma</i>)
<i>Cletust-</i>	CLETVSSTO (<i>CIL</i> 13, 4103, <i>Treveri</i>)
<i>C(h)rist-</i>	CRISSTO (<i>ICUR</i> -7, 20389, 201-300 AD, <i>Roma</i>)
<i>Crestus</i>	CRESSTE (<i>ICUR</i> -3, 7500, 301-400 AD, <i>Roma</i>)
<i>Custos</i>	CVSSTODI (<i>CIL</i> 11, 7560, <i>Forum Cassii</i>)
<i>Destus</i> / <i>Dastus</i>	DASSTO (<i>AHB</i> p 512, 201-300 AD, <i>Municipium Salvium</i>), DESSTO (<i>CIL</i> 6, 25820, <i>Roma</i>).
<i>Erastus</i>	ERASSTO (<i>CIL</i> 10, 2002, 151-250 AD, <i>Puteoli</i>)
<i>Eustat-</i>	EVSSSTATE (<i>Ness-Lieb</i> 107, 300-350 AD, <i>Castrum Rauracense</i>)
<i>Faust-</i>	FAVSSTINA (<i>CIL</i> 8, 25193, <i>Roma</i>), FAVSSTINAE (<i>CIL</i> 6, 24612, 101-200 AD, <i>Roma</i>), FAVSSTINES (<i>CIL</i> 11, 3732, 138-176 AD, <i>Lorium</i>), FAVSSTINIANVS (<i>CIL</i> 8, 12013, <i>Vazi Sarra</i>), FAVSSTINO (<i>CIL</i> 3, 10429, 210 AD, <i>Aquincum</i>)
<i>Fest-</i>	FESSTA (<i>ICUR</i> -3, 8484, 301-400 AD, <i>Roma</i>), FESSTIA (<i>CIL</i> 3, 2565, 151-300 AD, <i>Salona</i>), FESSTO (<i>CIL</i> 2, 6306, <i>Complutum</i>)
<i>Hesper</i>	ESSPER (<i>EE</i> -8-1, 61; 1-50 AD, <i>Tarentum</i>)
<i>Hispania</i>	ISSPAN(IA) (<i>AIJ</i> 557, 101-130 AD, <i>Siscia</i>)
<i>Isballa</i>	ISSBALLA (<i>BSAS</i> -1907-118, 300-600 AD, <i>Hadrumetum</i>)
<i>Scribonius</i>	ISSCRIBONIVS (<i>ICUR</i> -9, 25505, 301-400 AD, <i>Roma</i>)
<i>Stabilis</i>	ISSTABILIS (<i>AE</i> 1975, 392, <i>Maternum</i>)
<i>Statanius</i>	ISSTATANIS (<i>CIL</i> 8, 16931, <i>Nattabutes</i>)
<i>Stercorius</i>	ISSTEC[ORI] (<i>ICVR</i> -3, 7441, 301-400 AD <i>Roma</i>), ISSTERCORIA (<i>ICUR</i> -3, 6932, 291-325 AD, <i>Roma</i>), ISSTERCORVS (<i>ICUR</i> -1, 1373, 301-400 AD, <i>Roma</i>)
<i>Istmia</i>	ISSTMIA (<i>ICUR</i> -9, 24422, 301-400 AD, <i>Roma</i>)
<i>Stratonice</i>	ISSTRATONICE (<i>ICUR</i> -5, 14656, 301-500 AD, <i>Roma</i>)

	<i>Iust-</i>	IVSSTA (x 3) (<i>CIL</i> 9, 1268, 1-100 d.C., <i>Aeclanum</i> ; <i>ICUR</i> -8, 21149, 301-400 AD, <i>Roma</i> ; <i>ICUR</i> -1, 2370, 301-500 AD, <i>Roma</i>), IUSSTI (x 3) (<i>CIL</i> 8, 9999; <i>CIL</i> 14, 1244, <i>Ostia Antica</i> ; <i>CIL</i> 5, 6127, 138-300 AD, <i>Mediolanum</i>), IVSST(1)NO (IScM-1, 344, 202 AD, <i>Istros</i>), IVSSTVS (<i>CIL</i> 4, 4551, 79 AD at the latest, <i>Pompei</i>)
	<i>Modestus</i>	MODESSTI (<i>CIL</i> 9, 6083,014, <i>Adria</i>), MODESSTVS (NSA-1891-173, BC 30-30 AD, <i>Brundisium</i>)
	<i>Muscolosus</i>	MVSSCOLO[SE (Pfahl 848, 71-100 d.C., <i>Arae Flaviae</i>),
	<i>Mustus</i>	MVSSTVS (<i>CIL</i> 8, 23382, <i>Mididi</i>)
	<i>Nicostratus</i>	NICOSSTRATO (<i>CIL</i> 14, 5037, 117-138 AD, <i>Fiumicino Portus</i>)
	<i>Niustus</i>	NIVSSTI (<i>CIL</i> 8, 9656, <i>Cartenna</i>)
	<i>Pausta</i>	PAVSTA (<i>CIL</i> 4, 5281, 79 AD, at the latest, <i>Pompei</i>)
	<i>Postumus</i>	POSSTIMVS (<i>CIL</i> 13, 7342b, 151-230 AD, <i>Nida</i>), POSSTVMI (<i>CIL</i> 4, 8598, 1-79 AD, <i>Pompei</i>)
	<i>Praenestinus</i>	PRAENESSTINVS (Caro 86, <i>Alba Fucens</i>)
	<i>Ranistorus</i>	RANISSTORO (Philippi 522, 118-150 AD, <i>Philippi</i>)
	<i>Restutus</i>	RESSTVTA (<i>CIL</i> 6, 38567, 51-200 AD, <i>Roma</i>)
	<i>Sallustius</i>	SALLVSTIVS (x 2) (<i>CIL</i> 9, 3898 (p 682), <i>Lucus</i> ; ILAlg-2-2, 5793, <i>Thibilis</i>)
	<i>Sistima</i>	SISSTIMA (<i>ICUR</i> -2, 4368, 301-400 AD, <i>Roma</i>)
	<i>Splonistarum</i>	SPLONISSTARUM (<i>CIL</i> 3, 2026 (p 1030), 71-150 AD, <i>Salona</i>)
	<i>Telesporus</i>	TELESSPORO (<i>CIL</i> 6, 18222, 101-300 AD)
	<i>Tespius</i>	TESSPIO (<i>CIL</i> 3, 2557, 151-300 AD, <i>Salona</i>)
	<i>Vesta</i>	VESSTA (<i>CIL</i> 6, 3097, 71-130 AD, <i>Roma</i>)
	<i>Spes</i>	ISSPES (<i>CIL</i> 6, 7974, <i>Roma</i>)
Nouns and adjectives	<i>antistes</i>	ANTESSTES (<i>CIL</i> 3, 10440, 259 AD, <i>Aquincum</i>),
	<i>ascia</i>	ASSCIA (<i>CIL</i> 13, 2214, <i>Lugudunum</i> ; <i>CIL</i> 12, 2246, 107-114 AD, <i>Veleia</i> ; <i>CIL</i> 13, 2030, <i>Lugudunum</i>)
	<i>castus</i>	CASSTISSIMA (ILAlg-1, 2668, <i>Madaurus</i>)
	<i>castrensis</i>	CASSTRESE (<i>CIL</i> 6, 8523, 51-150 AD, <i>Roma</i>)
	<i>dispensator</i>	DISSPE[NSATOR]I (<i>CIL</i> 6, 30616,3, 251-300 AD, <i>Roma</i>)
	<i>exorcista</i>	EXORCISSTA (<i>CIL</i> 8, 25193, 300-600 AD, <i>Carthago</i>)
	<i>sceptor</i>	ISSCEPTOR (<i>AE</i> 1996, 264, <i>Roma</i>)
	<i>magister</i>	MAGISSTER (<i>CIL</i> 10, 6071, BC 20 – 20 AD, <i>Formiae</i>)
	<i>-stas</i>	MAIESSTATI (<i>CIL</i> 3, 11189, 236-238 AD, <i>Carnutum</i>), VETVSSTATE (BCTH-1908-CCV, 237 AD, <i>Masclianae</i>)
	<i>noster</i>	NOSSTRO (<i>AJF</i> 557, 101-130 AD, <i>Siscia</i>)
	<i>pistoricus</i>	PISSTRICORVM (<i>CIL</i> 13, 8255, <i>Ara Agrippensium</i>)

	<i>posterus</i>	POSSTERISQUE (x 3) (<i>CIL</i> 6, 8631, <i>Roma</i> ; <i>CIL</i> 6, 21091, <i>Roma</i> ; <i>CIL</i> 6, 28395, 101-200 AD, <i>Roma</i>)
	<i>quaestus</i>	QVAESTVS (<i>CIL</i> 2, 6278, 176-177 AD, <i>Italica</i>)
	<i>spiritus</i>	SSPIRITA (<i>ICUR</i> -4, 9533, 391-425 AD, <i>Roma</i>)
	<i>studium</i>	SSTVDIIS (<i>AE</i> 1988, 387, 364-367 AD, <i>Rudiae</i>)
	<i>testamentum</i>	TESSTAM[ENTO] (<i>CIL</i> 9, 5505, <i>Falerio Picenus</i>), TESSTAMENT (<i>CIL</i> 10, 4795, BC 10 – 20 AD, <i>Teanum Sidicinum</i>)
Verbal forms	<i>rescribo</i>	RESSCRIBERE, RESSCRIBAS, RESSCRIBAS (<i>Tab. Vindol.</i> 324, 645, 645, 716)
	<i>consisto</i>	CONSISSSENTES (<i>AE</i> 1952, 187; 101-200 AD, <i>Singidunum</i>), CONSISSSENTIBUS (<i>CIL</i> 3, 07474, 144-148 AD, <i>Durostorum</i>)
	<i>descido</i>	DESSCIDISSE (<i>IRC</i> -5, 61 AD, <i>Premia de Dalt</i>)
	<i>praesto</i>	PR[AE]SSTAN[S] (<i>CLEAfr</i> -2, 124 AD, <i>Madaurus</i>)
	<i>-sco</i>	QVIESSCENTI (<i>ICUR</i> -1, 1110, 301-400 AD, <i>Roma</i>), DISSCENTES (<i>CIL</i> 4, 1278, 79 AD at the latest, <i>Pompei</i>)
	<i>es- (sum)</i>	ESST (x 4), (<i>CIL</i> 8, 21145, <i>Caesarea</i> ; <i>CIL</i> 4, 01097a, 79 AD at the latest; <i>Pompei</i> ; <i>CIL</i> 3, 8934; 301-600 AD, <i>Salona</i> ; <i>chla</i> 42 1238, 25-1 BC, <i>Primis</i>); ESSTO (x 3) (<i>CIL</i> 1, 83, 122 BC, <i>Roma</i> ; <i>MEP</i> -2018-62, 133-89 BC; <i>Roma</i> ; <i>ICUR</i> -3, 7798, 301-350 AD, <i>Roma</i>)
	<i>-sti, -stis</i>	FECISSTI (<i>ICUR</i> -2, 6291, 351-400 AD, <i>Roma</i>), LIQUISSTI (<i>CIL</i> 9, 6604, 201-250 AD, <i>Saepinum</i>), SEVISSTIS (<i>Lunensia</i> p 301, 201-300 AD, <i>Luna</i>).
	<i>restituo</i>	RESSTITVERVNT (<i>RRMAM</i> -3-3, 50b, 197-198 AD, <i>Donekse</i>), RESSTIT[VERV]NTT (<i>CIL</i> 3, 4718, 101-300 AD, <i>Meclaria</i>), RESSTITVIT (<i>ILAlg</i> -1, 3875, 151-152 AD, <i>Ain Berda</i>), RESSTITV[I(T)] (<i>CIL</i> 3, 14354, 28, 151-230 AD, <i>Poetovio</i>), RESSTITVIT (<i>RISch</i> -3, 289, 201-300 AD, <i>Octodurus</i>), RESSTITVIT (<i>RRMAM</i> -2-1, 328, 235 AD, <i>Comar</i>), RESSTITV[T O] (<i>Ness-Lieb</i> 247, 171-300 AD, <i>Coriovallum</i>), RESSTITVTO (<i>CIL</i> 11, 7392, <i>Balneum Regis</i>), RESSTITVTORI (<i>CIL</i> 10, 4553, 201 300 AD, <i>Trebula Balliensis</i>)
	<i>-s-tus</i>	SUGGESSTVRVS (<i>ILAlg</i> -2-1, 1506, 79 AD, <i>Cirta</i>)

TABLE 3..13 Sample of the relevant forms showing the gemination of preconsonantal *s*-

These forms are attested in all the regions of the Empire, from the 2nd century BC to the 6th century AD. In the first instance, it would seem difficult to individuate directrices of distribution according to text type, since these forms appear to be attested both in official and private texts in which other substandard elements are documented. As can be noticed, this type of gemination occurs both in onomastic borrowings, mainly of Greek origin, and in Latin lexemes, notably verbal forms. This will be discussed in more detail later.

From a grapho-phonological point of view, it is conceivable that the gemination of the fricative is to be put in relation to the ambisyllabicity of /s/ in this phonotactic environment, as is evidenced

by spellings in which it sometimes occurs in syllable division (e.g., POS/STVMI in *CIL* 4, 869) as well as by the peculiar co-occurrence with the prosthetic vowel, cf., for instance, ISSPES (*CIL* 6, 7974, *Roma*) ISSTEC[ORI] (*ICVR*-3, 7441, 301-400 AD *Roma*), ISSTERCORIA (*ICUR*-3, 6932, 291-325 AD, *Roma*), ISSTERCORVS (*ICUR*-1, 1373, 301-400 AD, *Roma*) ISSTABILIS (AE 1975, 392, *Maternum*) ISSCRIBONIVS (*ICUR*-9, 25505, 301-400 AD, *Roma*).

The fricative /s/, whose gemination, at the segmental level, is further favored by its continuous nature, is associated both to coda position and, in preservation of the morpho-lexical structure of the word, to the onset of the following syllable. This fact is further evidenced by verbal forms in which the gemination of /s/ occurs between the lexical morpheme and the derivative or inflectional morpheme. Leaving aside forms such as *assto* and *asscribo*, in which gemination may result from assimilation, the gemination of /s/ in forms such as *resscribo*, *resstituo*, *fecissti* allows the isomorphism between the morphological structure and the syllabic representation (*res|scribo*, *res|stituo*, *fecis|sti*). This documentary evidence confirms the interpretation by Marotta (1999, p. 303) on the syllabification of forms such as *consto* and *persto*, resulting problematical because, if we admit that /s/, theoretically, should be associated to coda position, there would be a syllabification of the type *cons|to* and *pers|to*, going against the principle of agreement between the morphological structure and the syllabic representation. To overcome this aporia, Marotta admits a syllabification on a morphological basis, i.e., *con|sto* and *per|sto*, in which the fricative /s/ is seen as a sort of appendix which can be also associated to coda position (i.e., it is ambisyllabic).

However, the gemination of pre-consonantal /s/ as evidenced by Latin primary sources does not occur only at morpheme boundary, but also in a significant number of onomastic borrowings of Greek origin. The occurrence of this spelling in #VsC sequences stands out. In this case, it is conceivable that the word-initial vowel is reanalyzed, at a further stage, as a prosthetic vowel, as is evidenced by forms such as *Assclep-* and *Is(s)clep-*. Furthermore, this phenomenon is also attested in word-initial #sC without the insertion of the prosthetic vowel, in which /s/ is associated to coda position in external sandhi (cf. e.g. <ROGO A SSPIRIT[A] SANCTA> *ICUR* IV, 9533).

The difference in the contexts of occurrence of this type of gemination, i.e., on the one hand in Latin verbal forms to maintain the isomorphism between the morphological structure and the syllabic representation, and, on the other, in onomastic formations, mainly of Greek origin, with word-initial (V)sC, can be better described if we examine the socio-graphic nature of this orthographic habit. Indeed, while the overall examination of the documentation does not allow to

recognize cogent correlations with external variables, an analysis of these forms according to synchronic cuts allows to trace a less uniform path, in which the appeal to a polygenetic explanation seems more plausible. With polygenetic we intend, in this case, the uninterrupted radiating from the same model, i.e., the Greek one, according to different directrices of contact.

First, it is worth focusing on Greek data. As a matter of fact, the gemination of preconsantal <σ> is quite widespread in Greek inscriptions (cf. Hermann 1923; Lejeune 1972, pp. 284-286; Threatte 1980, p. 257; Devine & Stephens 1994, pp. 38-39), in which it is attested since the 6th century BC, contemporarily to the spread of the *geminatio consonantium* in Greek orthography. This spelling affects [s]+voiceless stops and aspirated stops (e.g., μαλισστα IG I² 924) as well as [z] before [m] and [d] (e.g., δεσσωμν IG IV 1484). This phenomenon is found both in private and official inscriptions (cf. Threatte 1980, p. 527). Additionally, it is documented also on papyri (cf. Gignac 1976, p. 159). In Greek orthography, the geminated spelling of C₁ affects also, though more rarely, other heterosyllabic clusters, such as stop+stop (e.g., τεθαππται, Εκκτωρ) and *muta cum liquida* (e.g., Καλλικκρατου, IG II² 5487) (cf. Lejeune 1972, p. 286; Threatte 1980, p. 530; Devine & Stephens 1994, p. 39).

From a quantitative point view, the gemination of preconsantal <σ> is attested in Greek to a much greater extent than in Latin. If we examine data as evidenced by the inscriptions and papyri available on online databases, we may notice that this phenomenon –excluding all those cases in which /ss/ is to be considered etymological, resulting from assimilation or two identical /s/ adjoining one another (e.g., ἔσσω) – occurs approximately 1600 times, and is attested with documentary continuity from the 6th century BC (χασσοτορ[δ]α[ς], *IThesp* 575) to the Bizantine era. This phenomenon occurs more frequently at the morpheme boundary (especially before -θη-, -το, -τε, -σθε), and affects to a greater extent the /st/ cluster (which, however, is much more represented in Greek phonotaxis). As in the case of the previously introduced Latin forms, this phenomenon does not occur only in word-medial position, but also in word-initial position, i.e.. VsC (with V either original or resulting from the insertion of a prosthetic vowel (cf. e.g. Ἀσκληπιάδης IG II² 2159 and ἰσστρατι(ώτης) *IGBulg* IV 2036) and sC (e.g., σστρατιώτης, *P.Mich.* 4 224). In some texts of the Imperial age, this phenomenon affects some Latin loanwords as well (e.g., κάστρον, *P. Sakaon* 62).

Leaving aside the hypothesis of the polygenesis of this orthographic habit in Latin and Greek (which, however, cannot be ruled out in principle, given the common tendency of either languages to the heterosyllabification of the sC sequence), this preliminary evidence would suggest, because

of both quantitative and chronological reasons, that Latin might have borrowed this use from Greek. This assumption is consistent with the previously discussed evidence that the *geminatio consonantium* spread out in Latin orthography because of the adoption of the Greek model. Therefore, it is conceivable that, together with the generalized standardization of the double spelling of intervocalic geminates, Latin orthography had also absorbed, albeit to a lesser extent, the doubling of preconsonantal <s>. However, as previously anticipated, a more focused look on available data allows to detect different directrices of transmission, not all ascribable, as in the case of the *geminatio* in intervocalic contexts, to a generally standardized adoption.

If the early instances of the gemination of preconsonantal <s> in Latin are recorded, consistently with the increasing spread of the *geminatio consonantium*, from the 2nd century BC, it is worth noticing that, in the Italian Peninsula, the earliest instances of this type of gemination occur, around the 3rd century BC, in some Oscan inscriptions in the epichoric script, notably in the areas of Cumae and Pompeii, i.e., [k]vaísstur (Po 9, Po 10), kvaísstur (Po 4), kva]ísstur (Po 14); passtata (Po 5); perisstul[eís (Cm 2). In most cases, it is dealt with inscriptions pertaining to the institutional and legal sphere (cf. Cappelletti 2016). Noteworthy, as Zair (2016, pp. 163-164) points out, all these examples concern Latin or Greek loanwords (i.e., *quaestor*, παστάς and περίστυλον).

If we now look at the Greek documentation before the 2nd century BC, we may notice, limited to those forms with circumscribable dating, that this phenomenon occurs 465 times, and is attested in Continental Greece (e.g., Φιλοστράτος, *GRBS* 26), in Asia Minor (e.g., Ἀσκληπιάδης, *Ephesos* 517) and in Italy. It is worth noticing that the Greek documentation from Italy shows a peculiar occurrence of this phenomenon in the Greek colonies of Pozzuoli (ἄσστρεπτον, *SEG* 4:91, 3rd century BC), Velia (Ἀρίστας, I.Velia 33, 3rd-2nd century BC) and Poseidonia ([A]στέας, *SEG* 52:993, 350-340 BC; *SEG* 35:1036, after 330 BC). This evidence, albeit fragmentary, may lead to assume that the gemination of preconsonantal <s> as evidenced in Oscan inscriptions from Campania between the 3rd and 2nd century BC was influenced by the Greek model. This use acquired, as we shall see, the feature of a particular writing koine.

Let us now examine the earliest Latin attestations. As anticipated, the earliest instances date back to the second half of the 2nd century BC, alongside the progressive emergence in Latin of the *geminatio consonantium*, and are recorded in the *Lex Repetundarum* (*CIL* 1, 583; 122 BC) and in a recently discovered graffito (*MEP*-2018-62, 133-89 BC). Both inscriptions display the future imperative *essto* (< **es-tod*), typical of the legal language. The *Lex Repetundarum*, which will be

examined in detail in § 3.3.4 when dealing with the controversial form <LEITERASVE>, shows a quite generalized use of the *geminatio consonantium*: etymological /ss/, in fact, is often spelled <ss> (forms such as *esse*, *esset*, *possum*, *possideo* are always spelled with double <ss>), whereas the spelling of forms such as *causa* (spelled both <CAVSSA> and <CAVSA>) and *iussi* (spelled <IVSI>) is fluctuating.

The graffito, though fragmentary, shows the text: [I]VDEX [E]SSTO / SEI PARRETE / FORMVLA / MVCCI SCAEVLAE. As Costabile (2018) points out, this is the incipit of a procedural formula. The text suggests an archaizing character, see the spelling <SEI> for *si* (which is always spelled <EI> also in the *Lex Repetundarum*) and the geminated form <PARRETE> for Classical Latin *paret*. The gemination of <R> in this verbal form is peculiar of the legal language and was perceived as an archaizing feature. During the 2nd century AD, this type of gemination will be considered old-fashioned and to be avoided (cf. FEST., K. 247.15 [*parret*] *quod est in formulis, debuit et producta priore syllaba pronuntiari, e non gemino R scribi, ut fieret 'paret', quod est, inueniatur*). The archaizing nuance of this form, typical of the legal language, is also stressed in the Satyricon (137.9)¹⁷². However, this graffito presents also some aberrant spellings: the final insertion in <PARRETE> is possibly due to the confusion with the ending *-te* rather than a paragoge; clear substandard elements are the syncope and the gemination before /j/. These elements probably hint at the lack of skill by the scribe in the transcription of the draft.

Though the earliest attestation in Latin are limited to the imperative *essto*, it would seem plausible that the gemination of preconsonantal <s> was embedded in the legal language, consistently with the well-known tendency towards the gemination of <s> with an archaizing nuance also in other phonotactic contexts.¹⁷³

It is therefore conceivable that the gemination of preconsonantal <s> was borrowed from Greek alongside the spread of the *geminatio consonantium*. Simply venturing a guess, the hypothesis that a further vehicle of transmission of the gemination in <ESSTO> was the parallel with the Greek present imperative ἐστω, often spelled with double <σσ> in official and legal inscriptions (cf. e.g. ἐσσω in IG IX 1² 3673, 176/5 BC), is not to be ruled out.

Around the end of the 1st century BC, this type of gemination is attested again in legal and official inscriptions, or in texts adopting an old-fashioned style. The diffusion of this orthographic practice

¹⁷² *Quisquis habet nummos [...] peragat causas sitque Catone prior; iurisconsultus 'parret, non parret' habeto atque esto quicquid Seruius et Labeo. Multa loquor? Quod uis, nummis praesentibus opta, et ueniet.*

¹⁷³ cf. Quint. Inst. I, 7, 20-21: *Quid quod Ciceronis temporibus paulumque infra, fere quotiens s littera media uocalium longarum uel subiecta longis esset, geminabatur, ut 'caussae' 'cassus', diuissione'. Quo modo et ipsum et Vergilium quoque scripsisse manum eorum docent. Aqtui paulum superiores etiam illud quod nos gemina dicimus 'iussi' una dixerunt'.*

in the legal lexicon is evidenced by forms such as MAGISSTER (*CIL* 10, 6071, from Formia, BC 20 – 20 AD; displaying also the systematic use of <XS> for /ks/, cf. ALEXSANDER e INTERREXS) and TESTAMENTO (*CIL* 9, 5505, from Falerio Picenus). The form <ESST>, attested on a papyrus from Egypt (*chla* 42 1238 = *CEL* I 9, 25-1 a.C.), hints at an old-fashioned style. Though this is a private text, this letter is written by a professional scribe in rustic capital, with systematic punctuation, and shows some archaizing elements, such as MISERERVS (l. 5), SA]LVOM (l. 16), with a noteworthy uncertainty as for the notation of geminates, cf. DISPERISE (l. 2), SVCESOREM (l. 2), SVFRAGATVR (l. 11), LITERAS (l. 7).

As for this synchronic cut, it is worth stressing the particular occurrence of this type of gemination among inscriptions from Pompeii, wherein this phenomenon is attested in 6 different inscriptions and affects different lexemes, cf. ESST in *CIL* 4, 1097a, paralleling the form attested on the above mentioned papyrus, and some proper names such as POS/STVMI in *CIL* 4, 8698, AVGVSTI in *CIL* 4, 3340, 45 (around the same period, cf. AVGVSTI in *Bergemann* 2, from Lucus Feroniae), CASSTVS in *CIL* 4, 8837 and SVCESSTVS in *CIL* 4, 1355 (even though in this case it is more conceivable that the name is *Successus*, which is quite attested in inscriptions, with an erroneous insertion of <T>). This peculiar occurrence at Pompeii may lead to hypothesize a continuity with the above discussed Oscan forms, notably attested in Pompeii as well.

On the other side, a progressive infiltration of this use among the *tituli sepulcrales* slightly emerges, cf. IVSSTA (*CIL* 9, 1268) from Aeclanum, ESSPER (EE-8-1-61) from Tarentum and MODESSTVS (*NSA*-1891-173 = AE 1978, 209) from Brundisium. The attestations from the areas of Tarentum and Brundisium may suggest that this use, rather than being related to an archaizing spelling, are to be considered as instances of ephemeral graphemic interference with Greek: this is particularly evident as for ESSPER (= *Hesper*), cf. Ἑσπερίων (*FD* III 2:68, 130/29 BC), Ἑσπερείς (*AD* 11 (1927/28) 64,7), but it is also plausible for the Latin names MODESSTVS and IVSSTA, which are sometimes spelled with the gemination of preconsonantal sibilant among Greek inscriptions, cf. Μό[δ]εστος (*JHS* 56, 1936, 79) and Ἰούστος (*Smyrna* 563). Ultimately, we assume that the engravers or the scribes, possibly of Greek origin, tend to write these names by following Greek orthography.

From the 1st century AD onwards the bifurcation between the persistence in the use, albeit not systematic, among legal and official texts, or adopting an archaizing nuance, and the infiltration in onomastics for the continuous graphemic interference with the Greek model, becomes more and more evident, in the light of the massive employment of Greek onomastic material for the designation of slaves. Leaving apart scarcely attested ethnonyms, such as ALISSTEGIANI (*CIL* 2, 5719), SPLONISSTARVM (*CIL* 3, 2026), COISSTOBOCENSIS (*CIL* 6, 1801), we may notice that in official texts this

phenomenon is particularly attested at morpheme boundary, cf. e.g., RESSTITVERVNT (*RRMAM*-3-3, 50b), RESSTITVIT (*ILAlg*-1, 3875), CONSISSSTENTES (*AE* 1952, 187), CONSISSSTENTIBVS (*CIL* 3, 7474), paralleled by the forms attested in the Vindolanda Tablets, i.e., RESSCRIBERE and RESSCRIBAS (*Tab. Vindol.* 324, 645, 716). It is remarkable that such forms are attested in texts, mainly official, showing a high level of literacy, scattered in all the Imperial domain but not at Rome. Though the data framework is objectively scarce, it is plausible, with a trend which is also evident in later inscriptions, that this use is to be attributed to the persistence of a particular writing archaizing habit conveyed in school environments. This is also believable given the purpose of this practice of defining syllabic and morphemic boundaries.

As for onomastics, this phenomenon is particularly attested in funerary inscriptions, and affects servile names, mainly of Greek origin, cf. e.g., ASSCLEPIODOTE (*CIL* 6, 12504, Roma), NICOSSTRATO (*CIL* 14, 5037, Portus), CHARISSTRATO (*Epigraphica*-1991-243, Roma), CALLISSTRATE (*NSA*-1933-476, Roma), attested with the same feature in contemporary Greek inscriptions and papyri (cf., e.g., Ἀσκληπιόδωρος, Ephesos 471; Καλλιστράτου, *IG* II² 7454; Νικοστράτου, *p.lond* 3 604B).

From the 2nd century AD and throughout the 3rd century AD Latin inscriptions show the highest number of attestation, i. e. 23 total, because of a more widespread epigraphic habit. Also in this period we may notice a split between verbal (mainly prefixed) forms as evidenced in official inscriptions and servile names, mainly of Greek origin, as evidenced in private texts: see, on the one hand, RESSTIT[VERV]NTT (*CIL* 3, 4718, Noricum), RESSTITV[I(T)] (*CIL* 3, 14354,28, Pannonia superior), RESSTITVT[O] (*Ness-Lieb* 00247, Germania inferior), RESSTITVIT (*RISch*-03, 289, Alpes Poeninae and *AE* 1985, 813, Galatia); and, on the other, TESSPIO (*CIL* 3, 2557), CRISSTO (*ICUR*-7, 20389), FAVSSTINO (*CIL* 3, 10429). In parallel, Greek inscriptions and papyri display this use also in Latin loanwords or proper names of Latin origin, cf. e.g., κασστρων, i.e., *castrorum* (*Labraunda* 73, dedication to Ἰουλία Δόμνα Σεβαστή, *scil. Augusta*), φίσσκον (*IK Sestos* 30) and φίσσκω (*IG* IX,1 643), Βερούσστα (*EKM* 1. Beroia 235), Ῥωσσκία (*IMC Catania* 179). It is conceivable that, around the end of the 2nd century AD, this use represented a marginal substandard writing koine of Latin and Greek.

Later inscriptions show a higher concentration of this phenomenon in private texts, mainly *tituli sepulcrales*, with the occasional surfacing of old-fashioned spellings such as ESSTO (*ICUR*-3, 7798, 301-350 AD) and ESST (*CIL* 3, 8934, 301-600 AD). A particular co-occurrence of this spelling with forms with vowel prothesis stands out: as a matter of fact, the 21% of the forms showing the gemination of pre-consonantal <s> around the period 4th-6th century AD displays also vowel

prosthesis (cf. ISSTERCORIA, *ICUR*-3, 6932; ISSCRIBON[IO], *ICUR*-9, 25505; ISSTERC[ORI, *ICUR*-3, 7441; ISSTERCORVS, *ICUR*-1, 1373 and ISSTRATONICE, *ICUR*-5, 14656).

Though the documentary framework does not provide the possibility of cogent statistical correlations, the analysis carried out so far meant to stress, through the examination of the lexemes and the text types showing the gemination of preconsonantal <s>, how the same phenomenon, radiating from the Greek model, has been embedded in different ways in Latin orthography. In fact, it has been assumed that the prestige of the Greek model led to the adoption by Latin orthography not only of intervocalic *geminatio*, but also the *geminatio* of preconsonantal <s>, particularly found in legal documents or texts showing an old-fashioned style, consistently with the generally archaizing nuance ascribed to the gemination of <s> in other phonotactic environments. This use, albeit not entirely standardized, notably occurs at the morphemic boundary, and is likely to be employed as graphic means to define the isomorphism between syllabic and morphemic boundaries. On the other hand, the continuous contact with the Greek model, showing a continuity of attestations of this habit, also favored, via onomastic diffusion, the spread of this practice among private texts as well. However, this assumed a substandard shadow, as is evidenced by the pronounced co-occurrence with vowel prosthesis.

3.4 Remarks on the *littera*-rule

As anticipated in the introductory section, the issue of the *littera*-rule represents a highly debated question in the tradition of the studies, with the opposition of two main approaches, i.e., on the one hand, a Neo-Grammarian perspective, aiming at individuating a general law, on the other an “atomizing” approach, denying this tendency and prone to drawing the story of each single word. However, more recent studies tended to highlight, rather than the categorical nature of such alternations, the convergence of the allotropic pairs of the *littera*-type towards a prosodic drift affecting several interrelated phonological processes, i.e., the lightening of hyper heavy rhymes by means of vowel reduction or degemination, the quantitative correlation concerning the occurrence of long vowels in open syllables and, conversely, of short vowels in close syllables, the drift towards the loss of vowel quantity as compared to consonant quantity, which would be favored in the assignment of syllable weight, the increase of geminated consonants in Latin phonological inventory in consequence of assimilatory processes. This perspective may account for the asystematic nature of the *littera*-rule as evidenced by some Romance outcomes, clearly showing the

presence of a long consonant in the geminated allotrope. In this regard, considering this phenomenon in a separate chapter of Latin phonology may be misleading, if not in the context of the problematization of some issues long debated in previous studies. As a matter of fact, the analysis of this tendency in a quantitative and statistical framework, stressing the integrating of this phenomenon into the fault of other evolutionary processes of the Latin syllable, allowed to gather a complex sheaf of factors which triggered the gemination of the littera-type, including both linguistic aspects (i.e., the processes related to the monophthongization of *ou* and *ei*) and extra-linguistic ones, generally connected to the notion of “expressive” language. We shall return to these points in the final synopsis. The aim of the present section is to stress, with both a philological and linguistic slant, the documented legitimacy of the littera-rule (or, better, of the littera-tendency), by problematizing the risk of circular reasoning whenever vowel quantity is determined on the basis of general phonological considerations. Indeed, one of the most challenging difficulties concerning the theorization and the demonstration of the alternations of the littera-type lies in the impossibility, due to both documentary scarcity and reconstructive issues (which are inherently related to the lexical typology affected by this phenomenon, i.e., anthroponyms, *Wanderworten*, nouns generally referable to the category of “family lexicon”), in determining whether the allotrope with singleton consonant has long vowel and the allotrope with geminated consonant has short vowel. As for some allotropic pairs which are supposed to have an */ā/ ~ /ǣ/* alternation, such as *baca ~ bacca*, this aporia is difficult to unravel; on the other hand, as for the alternations of the type */ī/ ~ /ĩ/* and */ū/ ~ /ũ/*, the Romance outcomes may provide significant clues. However, the documentary framework is often fragmentary: in some cases, we are sure about the Romance outcomes, but internal evidence in Latin is deficient, or there are insurmountable issues on the reconstructive side.

In this section we shall propose the analysis of a lemma, so far unnoticed, which would seem to match the framework of the relation between monophthongization and gemination. In this specific case, the documentary framework is such to allow a fine-grained analysis of synchronic variants in Labovian terms, albeit *lato sensu*. Then, some well-known lemmata will be re-examined, by stressing new elements hinting at ascertaining vowel quantity.

3.4.1 *louk-, lūk-, lūkk-* ?

The examined stem, i.e. **louk-* (< PIE **leuk-*) ‘light’, is richly attested not only in Latin, but also, on the comparative side, in other Indo-European languages.¹⁷⁴ The large amount of derivatives allows to provide documentary evidence of the phonetic evolutionary path of the original diphthong, both in the typical urban outcome and in the dialectal one. In fact, the diphthong *-ou-* (both original and resulting from **eu-*)¹⁷⁵ underwent two different types of monophthongization, i.e. /ū/, which is proper of Classical Latin, and /ō/, which is traditionally classified as a “dialectal” outcome (cf. Leumann 1977, p. 69; Wachter 1987, pp. 313-315; Coleman 1990, p. 7; Meiser 2006[1998], p. 62;).

TABLE 3.7 shows the treatment of the diphthong *-ou-* among Republican inscriptions and allows to detect the diatopic and diachronic progression of its spelling variants. These forms, concerning only those ones with underlying *-ou-*, have been extracted by crosschecking data from *EDCS* and *CLaSSES*.

DATE	SPELLING	PROVENANCE	TOKENS
7 th BC	<OV>	Roma	IOVVESAT (<i>CIL</i> I ² 4)
6 th BC	<OV>	Satricum	LOVCIOS (<i>AE</i> 2003, 297)
4 th BC	<OV>	Praeneste, Corchiano	POLOVCES (<i>ILLRP</i> 1199), LOVCILIVS (<i>ILLRP</i> 1251)
	<O>	Praeneste	LOSNA (<i>ILLRP</i> 1200), POLOCES (<i>ILLRP</i> 1200)
4 th -3 rd BC	<OV>	Lucera, Norba, Praeneste	LOVCARID (<i>ILLRP</i> 504), LOVCINA (<i>ILLRP</i> 161), LOVCILIA (<i>CIL</i> I, 559)

¹⁷⁴ cf. Hit. *lukk-^{ta}* ‘to get light, dawn’ < **léuk-* / **luk-*, *lukkatt-* ‘dawn, nex morning’ < **l(e)uk-ot-*; Skt. *rócate* ‘to shine’, Av. *raocah-* [n.] ‘light’, YAv. *raocaiia-* ‘to make shine’, OP *raucah-* [n.] ‘day’; *raoxšna-* [adj./n.] ‘light’; *raocana-* [adj.] ‘shining, light’, OP *raucah-* [n.] ‘day’; Gk. *λευκός* ‘clear, light’, *λεύσσω* ‘to see’; OPr. *luckis* ‘torch, log’, RuCS *lučb* ‘ray, light, shining’, Cz. *louč* ‘torch’ < **louki-*, OCS *lučiti se* ‘to happen’, Toch. *luk-* ‘to shine’. In Latin, this stem is highly productive as well, cf. *lūx*, *lucis* ‘light’ (< **louk-s*), *lūmen* ‘light’ (< **louksmen* < **louk-s-mn*), *lūcus* ‘sacred grove, wood’ (< **louko-s*, cf. Ven. *louki* [gen.sg.], O. *lūkveí* [loc.sg.], Sk. *loká-* [m.] ‘free space, world’, *lūna* ‘moon’ (< **louksnā-*, cf. Av. *raoxšna-* [adj./n.] ‘light’, Gr. *λύχνος* [m.] ‘lamp’, OPr. *lauxnos* [pl.] ‘stars’, MHG *lihšen* ‘bight’), cf. *LIV* and *EDLIL* for further references.

¹⁷⁵ We have also indirect documentation of an early stage, i.e. *leuk-*, as evidenced by the vocative *Leucesie* ‘God of the light’ (?) in the fragment of the *Carmen Saliare* reported in Quintus Terentius Scaurus’ *De Orthographia* (1st-2nd century AD).

3 rd BC	<OV>	Praeneste, Ulubrae, Roma, Nemus Dianae, Pisaurum	LOVCILIA (<i>CIL</i> I ² , 559, 5), LOVCINA (<i>CIL</i> I ² , 362, 2), LOVCINAI (<i>CIL</i> I ² , 361, 2), LOVCO (<i>ILLRP</i> 83), LOVCINA (<i>ILLRP</i> 16), LOVCILI (<i>NdP</i> p. 191)
3 rd -2 nd BC	<OV>	Norba, Spoletum, Pisaurum	LOVCINA (<i>ILLRP</i> 163), LOVCI (<i>ILLRP</i> 505), LOVCI (<i>ILLRP</i> 506), LOVCOM (<i>ILLRP</i> 505), LOVCINA (<i>ILLRP</i> 506), LOVCINA (<i>CIL</i> I ² 360), LOVCINA (<i>CIL</i> I ² 371).
	<O>	Norba	LOCINA (<i>ILLRP</i> 162)
2 nd BC	<OV>	Capua, Sulmona	LOVCINA (<i>ILLRP</i> 165), LOVCIA (<i>CIL</i> I 3222), LOVCIES (<i>CIL</i> I 3220), LOVCIES (<i>CIL</i> I 3221).
	<V>	Cora, Capua, Roma	POLLVCI (<i>CIL</i> I ² 1507), POLLVCI (<i>CIL</i> I ² 687), POLLVCIS (<i>CIL</i> I ² 1506), LVCION (<i>CIL</i> I ² 9)
2 nd -1 st BC	<OV>	Alba Fucens, Ostia Antica	LOV(CILIVS?) (<i>CIL</i> I 3552), LOV(CIOS) (<i>CIL</i> I 3579)
	<V>	Roma	LVCIVS (<i>CIL</i> I ² 7)
1 st BC	<OV>	Corfinio	LOVCI (<i>AE</i> 1988 438)
	<V>	Roma, Ferento	LVCILI (<i>CIL</i> I ² 901), [L]VNA (<i>CIL</i> I ² 2511), LVCO (<i>CIL</i> I ² 1268)
1 st AD	<V>	Roma	[L]VCIA (<i>GORDON</i> I 101), LVNAE (<i>GORDON</i> I 35) ¹⁷⁶

TABLE 3.14 *Treatment of the diphthong -ou- in Republican inscriptions*

As can be seen, most of the attested forms concerns the stem **louk-*, because of the high frequency of the onomastic type *Lucius*, of the epithet *Lucina* and of the noun *lucus*. In diachronic terms, as can be seen in CHART 3.1, the diphthong *-ou-* is preserved (at least at the orthographical level), from the 7th to the 1st century BC; the monophthong */ō/* sporadically surfaces in peripheral niches between the 4th and the 2nd century BC, often in synchronic and syntopic co-occurrence with the preservation of the diphthong; the monophthong */ū/* is attested from the 2nd century BC and is definitely established from the 1st century AD onwards.

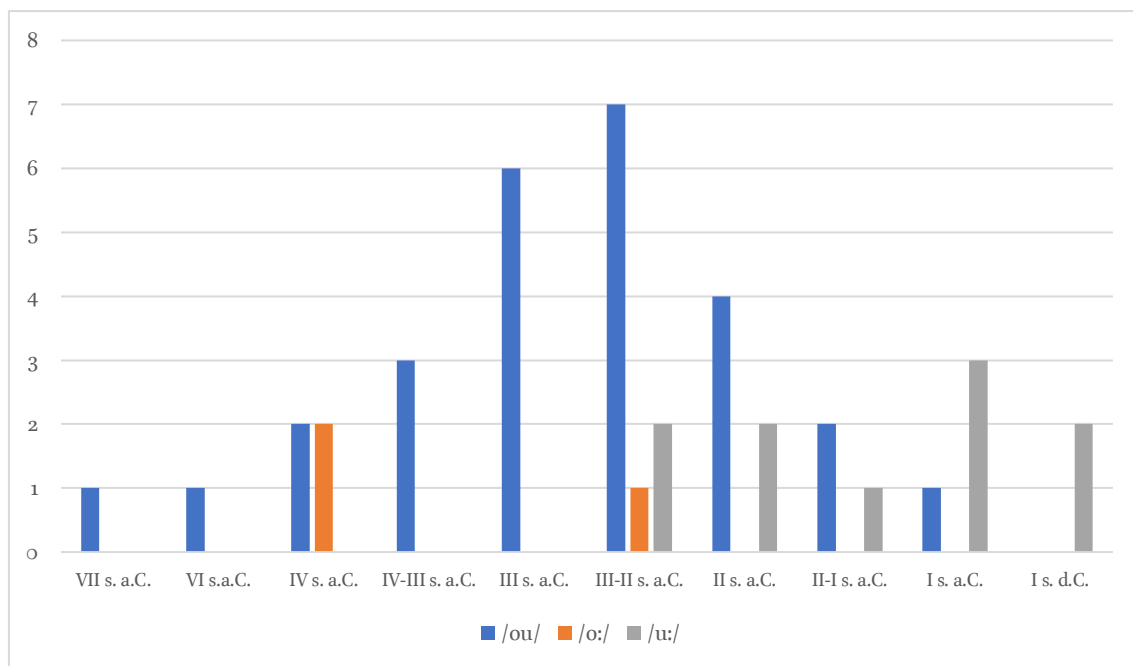


CHART 3.13 *Treatment of the diphthong -ou- (BC 7th - 1st AD)*

Data lead to reconstruct the following picture: the diphthong *-ou-* undergoes innovation at Praeneste (cf. LOSNA, POLOCES) around the 4th century BC, where the spelling <OV> is preserved as well. This monophthong is also attested between the 3rd and 2nd century BC at Norba (cf. LOCINA), co-occurring with the preservation of the spelling <OV>. Other attestations of this outcome are lacking, unless the forms IOPITER from Casinum (*CIL* X 5317) and LOCEIA from Canusium (*ERC*Canosa-Instr 62), either of which will be discussed later, are considered. The outcome /ū/, first attested around the 3rd-2nd century BC in the Scipions' *elogia*, is well-established at Rome from the 2nd century BC, together with the preservation of the spelling <OV>, and from the 1st century AD onwards only the outcome /ū/ is attested.

Documentary evidence, however, does not allow to pinpoint with certainty the dialectal nature of the outcome /ō/, since, as Adams (2007, pp. 64-66) points out, most of inscriptions dated between the 4th and 2nd century BC actually come from areas outside Rome. Therefore, it might be also possible that the outcome /ō/ represents a previous diachronic stage. However, there are some lexemes, which entered Classical Latin lexicon, with /ō/ deriving from /ow/. This is the case of many derivatives of **rouđ^h* (<**reud^h*-), i.e. *rōbus* 'a kind of red', *rōbigo* 'rust', *rōbiginosus* 'rusty', *Rōbigus* 'deity supposed to avert rust from crops', *Rōbigalia* 'festival in honour of Rōbigus', *rōbur* 'oak-tree, strenght' (cf. *LEW* II pp. 438-439; *DELL* p. 575; Sihler 1995, p. 141; *EDLIL* p. 525). The adjective *rōbus* is attributed to *rustici* by Festus (2nd century AD), in the epitome by Paul Deacon (cf. Lindsay p. 325.1),

whereas the form ROBIGO is attested at Praeneste in the early Imperial period (D 8744a, BC 9-37 AD). Similarly, the form *fūnus* (assuming it derives from **d^hou-nes-* < **d^heu-nes-* ‘the passing away’) would show the variant *fōnus*, attested in a gloss (GL VI.I. 14-12.2) mentioning that this form can be found *in libris antiquis*. However, the correct reading of this gloss, presenting the addition <i> between <o> and <n>, is uncertain.

Let us now see why the base **louk-* may be relevant to corroborating the hypothesis of a correlation between monophthongization and consonant gemination as proposed by Benedetti (1996) and Benedetti & Marotta (2014).

The base **louk* is highly employed in onomastic formations both in Latin (e.g., the *praenomen* *Lūcius* (< **Louk-ijōs*), the *nomen gentile* *Lūcilius* and the *cognomen* *Lūcianus*) and among the Sabellian languages (e.g., the *praenomen* *lúvkis* < **Louk-ijōs* and the *gentilicium* *lúvkiís* < **Louk-ijōs*). As far as the onomastic type deriving from **Louk-ijōs* is concerned, Latin inscriptions seem to show the variants *Lūcius* and *Luccius*, which, in the first instance, are assumed to be superimposable to each other. CHART 3.2 presents a quantitative picture of these variants in relation to their chronological distribution, limited to the inscriptions whose date is assertable. The chart includes also the older, non-monophthongized variants. The amount of all the attestations, net the of the abbreviated forms (representing, for obvious reasons, the majority), is 1360. The forms attested in datable inscriptions are only 621:

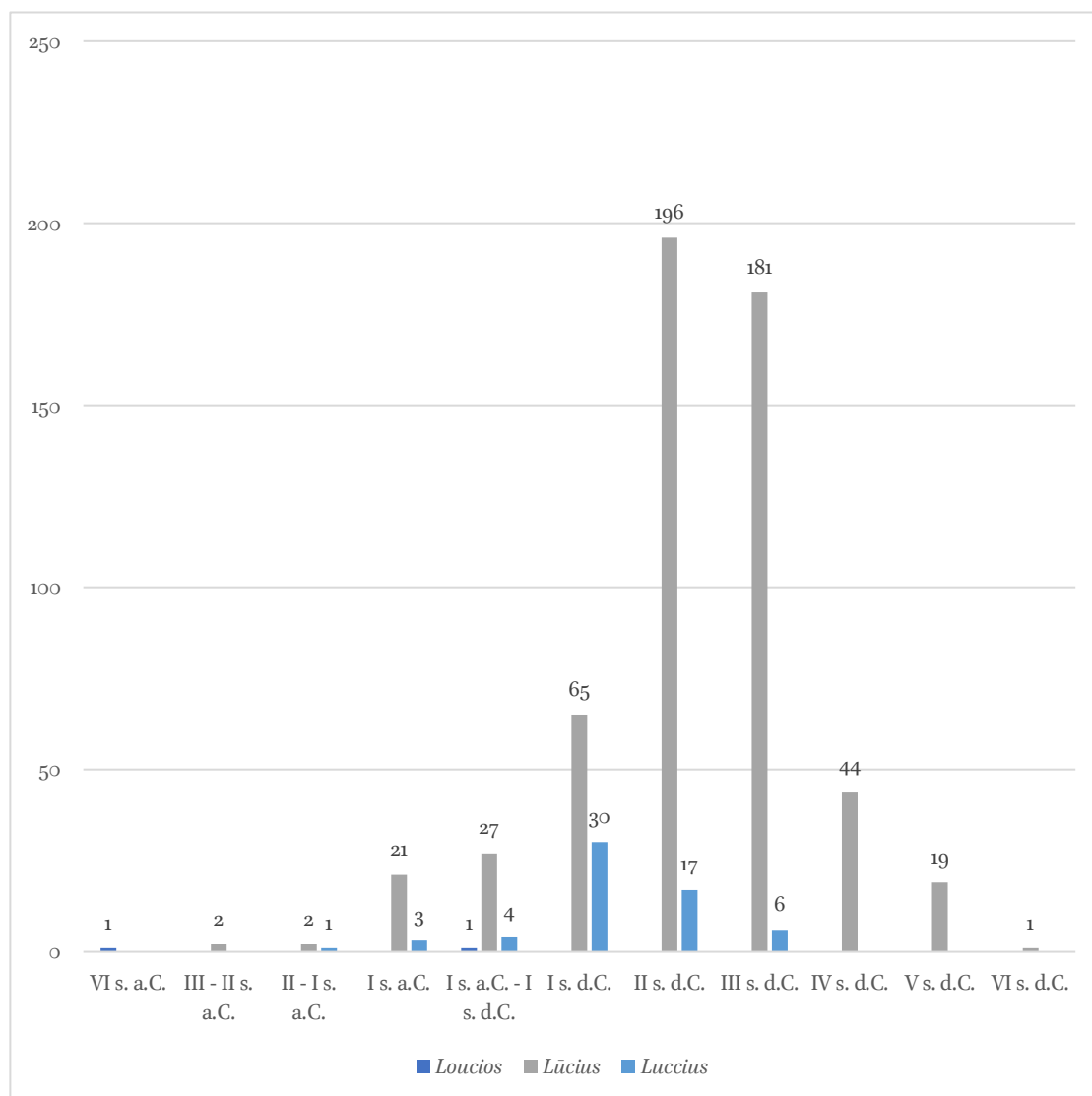


CHART 3.14 *Lucius ~ Luccius spelling variants across time*

The outcome with the monophthong /ū/ is attested around the 3rd-2nd century BC in the Scipions' *elogia*. From the 1st century BC also the geminated variant *Luccius* (CIL 3 714) is attested.

The geminated variant, assuming it is superimposable to the type *Lūcius*, may be explained from the formal point of view according to two different models. The first one concerns the accentual structure of the word, consistently with the framework of the *littera*-rule, implying that the form *Luccius* results from a parallel process of monophthongization (i.e., **Loṽk-ījos* (cf. *Louciom*) > **Lōcius* > *Lūcius* ([+high] variant?) ~ *Lūccius* ([+low] variant?), with prosodic equivalence of the syllables realized by means of vowel quantity or consonant quantity; alternatively, a second possible explicative model concerns the syllabic restructuring of C^sj clusters (cf. Pensado Ruiz 1988; Vennemann 1988): /lūk.jus/ (implying the gliding of the sequences -CiV- > -CjV-, which is

documented since the 1st century BC) > /luk.kjus/, according to well-documented parallels among the Indo-European languages, because of the productivity, both in verbal and nominal morphology, of suffixes formed via $-(i)lV-$.

However, to include this pair within the *littera*-model, two main issues should be addressed:

- (1) First, from the formal point of view, it is necessary to probe the actual brevity of *-u-* in the geminated allotrope.
- (2) Second, from the substantial point of view, it should be stressed that the onomastic material allows us to operate only at the level of the signifier. In fact, the correspondence, though phonetically and phonologically plausible, of these two forms, does not allow one to trace immediately a full conformity. This is due to the lack of a referent justifying the identification of the same phonological form in its variants. Therefore, a possible way for ascertaining this issue is an accurate scrutiny of the onomastic formulas in which these forms are attested, since the only element akin to a referent is the function assumed by the name within an institutionalized onomastic formula.

As regards the issue (1), there is no direct evidence of the brevity of *-u-* as for the type *Luccius*. The variants *LOCIA* (*CIL* 6 21440), *LOCIS* (*ICUR* 1 1742) and *LOCCIAS* (*AE* 2012, 413) cannot be superimposed to this name, but traced back to Gk. $\Lambda\omicron\chi\epsilon\iota\omicron\varsigma$ ($\Lambda\acute{o}\chi\iota\omicron\varsigma$) and $\Lambda\omicron\chi\epsilon\iota\alpha$ ($\Lambda\acute{o}\chi\iota\alpha$), attested in Greek onomastics both singularly and in compounds, and more often spelled in Latin texts with <CH> (cf. e.g. *LOCHIAS* in *CIL* 8, 13092, *CIL* 6, 6973, *CIL* 6, 13832). This name is widespread in servile milieux, possibly for indicating the function of midwives (cf. Solin 2002, pp. 134-135). The geminated variant, without bringing up Lindsay's norm, may be explained as a case of gemination before /j/, similarly to *bracchium* and **tricchia*. The form *Loccus* (cf. *LOCCO* in *CIL* 7, 1336, 565, da Londinium) is instead a hypochoristic formation (cf. Schulze 1904, p. 520). The assumption of an alternation of the *littera* type as for the pair *Lūcius* and *Luccius* is based, for the moment, on quite weak points. Let us examine the other issue.

As for the point (2), it is necessary to examine the two variants within the onomastic formulas, to ascertain whether it is possible to individuate directrices of chorographic or chronological sort allowing a more fine-grained evaluation of the relation between *Lūcius* and *Luccius*. TABLE 3.8 shows the examined variants depending on the occurrence within the onomastic formulas (by

circumscribing data to those inscriptions whose textual conditions allow to distinguish such elements):

1st c. BC	Lucius		Luccius	
Praenomen	TOTAL: 10		TOTAL: 0	
	Africa proconsularis (Carthago)	1	///	
	Apulia et Calabria (Canusium)	1		
	Etruria (Perusia)	1		
	Hispania citerior (El Bierzo)	1		
	Hispania cit. (Carthago Nova)	1		
	Latium et Campania (Pompei)	2		
	Latium et Campania (Ostia a.)	1		
	Provincia incerta	1		
	Venetia et Histria (Tergeste)	1		
Nomen gentile	TOTAL: 11		TOTAL: 3	
	Roma	2	Roma	1
	Venetia et Histria (Aquileia)	4	Samnium (Pietrabbondante)	1
	Latium et Campania	2	Tracia (Samothracia)	1
	Samnium (Aesernia)	1		
	Bruttium et Lucania (Atina)	1		
	Apulia et Calabria (Aceruntia)	1		
1st c. BC – 1st c. AD	Lucius		Luccius	
Praenomen	TOTAL: 4		TOTAL: 0	
	Latium et Campania (Pompei)	4	///	
Nomen gentile	TOTAL: 10		TOTAL 4	
	Roma	2	Latium et Campania (Pompei)	2
	Latium et Campania (Pompei Aquinum, Puteoli)	6		
	Samnium (Superaequum)	1	Latium et Campania (Antium)	1
	Baetica (Corduba)	1	Apulia et Calabria (Sipontum)	1
1st c. AD	Lucius		Luccius	
Praenomen	TOTAL: 35		TOTAL: 0	
	Roma	6	///	
	Baetica	4		
	Hispania Citerior	5		
	Lusitania	3		
	Belgica	1		

	Dalmatia	1		
	Etruria	1		
	Apulia et Calabria	3		
	Galatia	1		
	Gallia Narbonensis	1		
	Latium et Campania	1		
	Picenum	1		
	Samnium	1		
	Provincia incerta	1		
	Moesia superior	1		
	Pannonia (sup./inf.)	2		
	Noricum	1		
	Venetia et Histria	1		
<i>Nomen gentile</i>	TOTAL: 7		TOTAL: 8	
	Venetia et Histria	6	Venetia et Histria	6
	Noricum	1	Noricum	2
2nd c. AD	Lucius		Luccius	
<i>Praenomen</i>	TOTAL: 83		TOTAL: 0	
	Aegyptus	5	///	
	Africa proconsularis	1		
	Alpes Maritimae	3		
	Apulia et Calabria	1		
	Arabia	5		
	Baetica	2		
	Britannia	3		
	Cappadocia	1		
	Dacia	4		
	Dalmatia	3		
	Etruria	1		
	Galatia	1		
	Germania inferior	1		
	Germania superior			
	Hispania citerior	3		
	Latium et Campania	2		
	Lusitania	1		
	Lycia et Pamphilia	1		
	Mauretania Caes.	2		
	Moesia inferior	4		

	Moesia superior	3		
	Noricum	4		
	Numidia	1		
	Palestina	1		
	Pannonia inferior	4		
	Pannonia superior	3		
	Pontus et Bithynia	1		
	Provincia incerta	4		
	Raetia	3		
	Roma	7		
	Thracia	1		
	Venetia et Histria	1		
	Nomen gentile	TOTAL: 17		
Aquitanica		1	Aegyptus	2
Dacia		2	Apulia et Calabria	5
Dalmatia		1	Latium et Campania	6
Latium et Campania		3	Noricum	2
Moesia inferior		1	Roma	4
Pannonia superior		1	Samnium	3
Provincia incerta		1	Umbria	1
Roma		4		
Samnium		2		
Transpadana		1		
3rd c. AD	Lucius		Luccius	
Praenomen	TOTAL: 78		TOTAL: 0	
	Africa proconsularis	9	///	
	Aquitanica	1		
	Arabia	1		
	Baetica	1		
	Britannia	3		
	Dacia	1		
	Dalmatia	4		
	Etruria	1		
	Germania inferior	1		
	Germania superior	3		
	Hispania citerior	3		
	Latium et Campania	4		
	Lusitania	1		

	Lycia et Pamphylia			
	Macedonia	1		
	Mauretania caesariensis	2		
	Moesia inferior	5		
	Moesia superior	1		
	Numidia	2		
	Pannonia inferior	4		
	Pannonia superior	5		
	Provincia incerta	2		
	Raetia	2		
	Roma	8		
	Samnium	2		
	Sardinia	4		
	Syria	3		
	Thracia	1		
	Transpadana	1		
<i>Nomen gentile</i>	TOTAL: 10		TOTAL: 6	
	Bruttium et Lucania	1	Dalmatia	1
	Dacia	1	Samnium	1
	Dalmatia	3	Latium et Campania	2
	Moesia superior	1	Apulia et Calabria	1
	Pannonia superior	1	Moesia inferior	1
	Roma	3		

TABLE 3.15 Occurrence of the spellings *Lucius* and *Luccius* within onomastic formulas

Data clearly show that the type *Luccius* is exclusively a *gentilicium* and never a *praenomen*. The examined alternation, therefore, concerns the *gentilicia* *Lucius* and *Luccius*. If we analyze in detail the geographical provenance of the inscriptions showing the *gentilicia* *Lucius* and *Luccius*, we may observe, with good approximation, that the *gens* *Luc(c)ia* is notably documented in Oscan speaking areas, i.e. Campania, Samnium, and Apulia et Calabria. Indeed, a *gens* *Lucia* is documented in Oscan inscriptions as well, cf. *loucies* (NOM.SG., Pg. 21.46), *maiiúú / lúvkiúú mai(ieís)* (*M. Lucio Mai f.*) (DAT. SG. Cm 1, Cippus Abellanus), *lúvkiúú* (DAT.SG., Si 8), *ni(umsis) lúvki(iís) m(a)r(aieís)*, commander of Samnites during the social war (Ve 200). All these forms imply the derivation from **Louk-ijōs* > *Loukiis*.

In the light of the above, it would seem legitimate wondering whether the gemination in *Luccius* may be related to the gemination, documented in Oscan, of word internal -Cj- clusters. This

hypothesis, however, is not entirely convincing for the following reasons. As is known, this type of gemination, probably hinting at a process of palatalization, is documented in Oscan for the segments /k/, /t/, /l/, /n/, /r/ before /j/. As for the treatment of the -C_i- cluster, however, there are many spelling fluctuations in Oscan, involving not only the *geminatio*, but also the absence of the glide (e.g. **vikturrai**), the metathesis of the glide (e.g. **heirens**) and the use of other graphemes, when employing other scripts, to indicate the phonetic developments of these clusters, as is evidenced by the *Tabula Bantina*, tending to the cancellation of the glide and to use <s> and <x> to signal the outcomes of /tj/ and /kj/ (cf. Orioles 1972; Zair 2016, pp. 112ff). It must be noted, however, that this type of gemination before /j/ is not documented among Oscan *gentilicia*, with the sole exception of **Babbiis** and **Dekkiis**, generally explained as resulting from “expressive gemination”. As a matter of fact, the suffix of Oscan *gentilicia* is dissyllabic, i.e. *-i_jos- > -iis, which is spelled <iis>, <ies> and <ιες>, probably representing /i.is/ and /i.es/, which are therefore unlikely to trigger the gemination. Obviously, one cannot rule out the hypothesis that the suffix of the *gentilicium* had undergone a process of gliding and that their spelling represented an instance of graphic conservatism, but it cannot be demonstrated.

The picture begins turning out richer and clearer if we consider another variant, superimposable to the pair *Lūcius* ~ *Luccius*, i.e., *Lucceius*. This name is formed via the isofunctional suffix *-e_jos, rendered in Oscan script by means of the spellings <eiis>, <ηις>, <εις> and adapted in Latin as -eius (/ěj.jus/). The variant *Lucceius* is attested about 500 times in Latin and Greek inscriptions, from the 1st century BC to the 4th century AD. Interestingly, the geminated variant *Lucceius* is fairly more widespread than the non-geminated one *Luceius*.

By assuming the identity of these forms, the discussed pair is therefore *Lūc(e)ius* ~ *Lucc(e)ius*. Let us see whether the analysis of data concerning the variant *Luc(c)eius* may provide information about vowel quantity in the geminated allotrope.

Indeed, the examined documentation offers compelling evidence of the brevity of -u- in the allotrope *Lucceius* as evidenced by spellings such as LOCCEIVS (*CIL* 4 4043, from Mantua, 208 AD), with the allograph <o> to indicate /ŭ/(i.e. [lukk-]), and, among Greek inscriptions, Λοκκεῖος and Λοκκήιος (about 10 total, from the 1st century AD). In addition to that, Greek inscriptions show also the variant with <υ>, i.e. Λυκκήιος (*SEG* 35:599, Larissa, 100-50 BC), Λυκκήιος (*ID* 1763, Delos, 94 BC), which can be explained as the result of a tendency, totally marginal in Greek epigraphy, to the confusion between <ου> e <υ> (cf. Threatte 1980, p. 260), or simply as the result of graphemic interference with Latin <v>.

This picture is further enriched by the fact that we have also attestations of the non-geminated allotrope with long vowel resulting from monophthongization, i.e. *Lūceius*, in which the quantity of /ū/ is guaranteed, in addition to reconstruction, by the adoption of the *geminatio uocalium*, cfr. LVVCEIVS, occurring twice in *CIL* 3 713 (from Samothraki, dated to 92 BC).

Furthermore, we have probably the monophthongized outcome /ō/ in LOCEIA, from Canusium (225-151 BC). Nonetheless, the chronology of this inscription would require caution in the evaluation of the absence of consonant gemination as evidence of singleton consonant, because it is not to be ruled out that LOCEIA stands for /lokkeia/ (even though, given the above picture, it is quite unlikely).

The discussed evidence seems to match perfectly the framework of the *lex littera* as proposed by Benedetti (1996) and Benedetti & Marotta (2014), and this picture is highly conceivable not only because we are dealing with a well-established and attested stem, unlike most of the forms which are supposed to belong to the *lex littera* pattern, but also because the documentary framework is such to return the attestation of all the expected evolutionary processes, which are not inferred indirectly.

After having introduced the data framework and the most salient points, let us now examine more closely the progression of the evolutionary processes. CHART 3.3 shows projections of data referring to the types *Lūcius* ~ *Luccius* (limited only to the *gentilicia* as evidenced by TABLE 3.8) and *Lūceius* ~ *Lūcceius* (obviously, this projection refers only to the documentation with a sure or circumscribed dating).

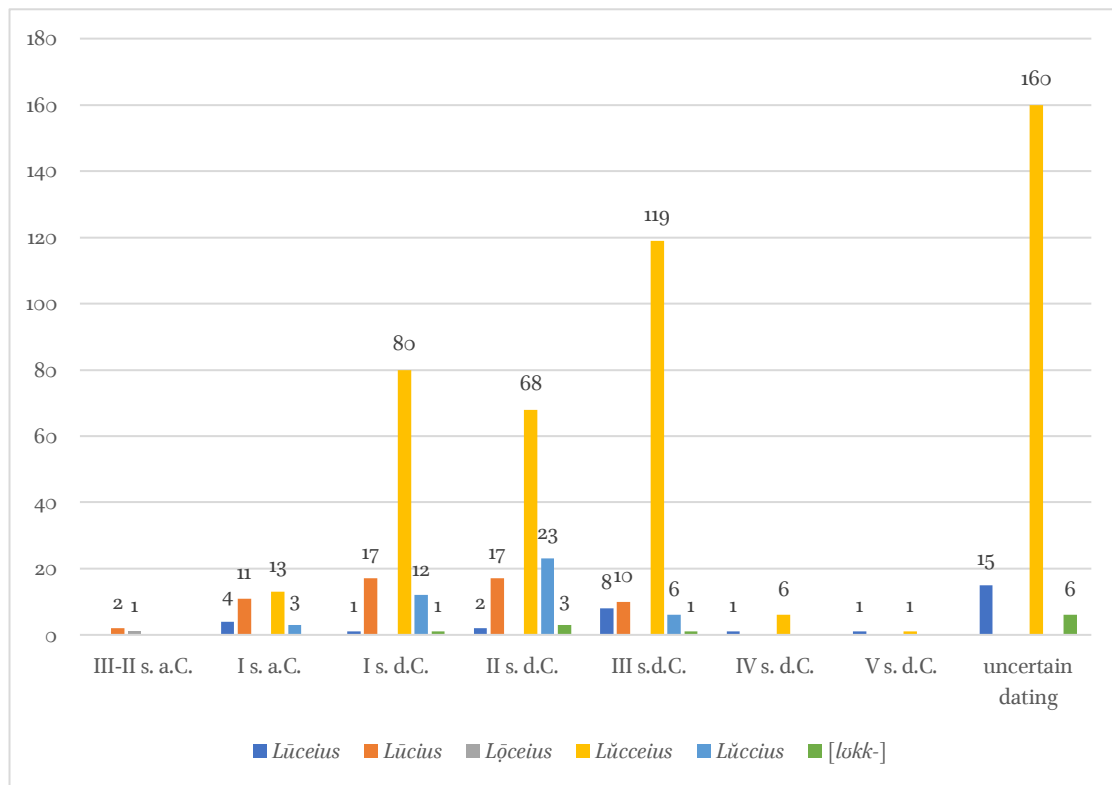


CHART 3.15 *Lūc(e)ius ~ Lucc(e)ius spelling variants*

The variant with the monophthongized outcome /ow/ > /ō/ is attested, as one would expect, between the 3rd and 2nd century BC (more precisely, 225-151 BC). This form would add a new piece to the previously outlined picture of the “dialectal” treatment of -ou-.

In the following centuries we have, synchronically, the outcomes /owk-/ > /ūk/, and /ūkk/, representing the most attested outcome (at least as far as the variant *Lucceius* is concerned). From the 1st century AD also the variants with the use of Latin <o> and Greek *omicron* to signal /ū/ [ʊ] are documented. At a first glance, we may notice different relative proportions concerning the /V:C/ ~ /VCC/ alternation, depending on whether the *gentilicium* has the -ius or the -eius suffix, as is further highlighted in TABLE 3.9:

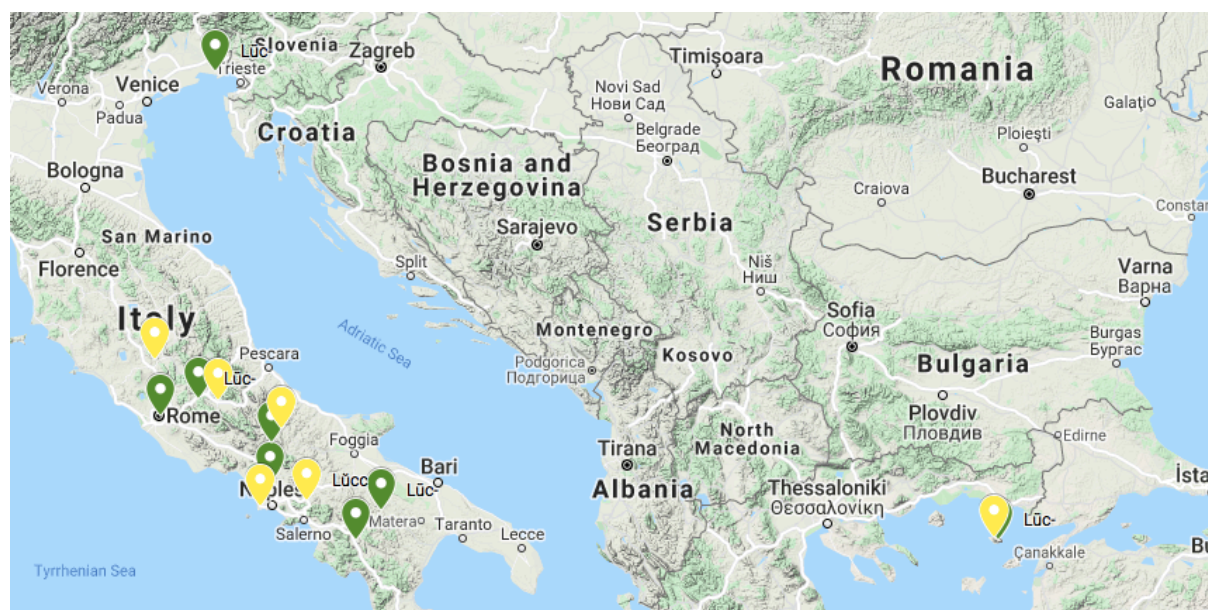
	V:C		VCC		V:C ~ VCC ratio	V:C ~ VCC ratio -ius	V:C ~ VCC ratio -eius
	ius	eius	ius	eius			
II BC	2	0	0	0	2:0	2:0	/
I BC	11	4	3	13	1:1	3,6:1	1:3,5
I AD	17	1	12	81	1:5	1,4:1	1:81
II AD	17	2	23	71	1:5	0,7:1	1:35,5

III AD	10	8	6	120	1 : 7	1,6 : 1	1 : 15
IV AD	0	1	0	6	1 : 6	/	1 : 6

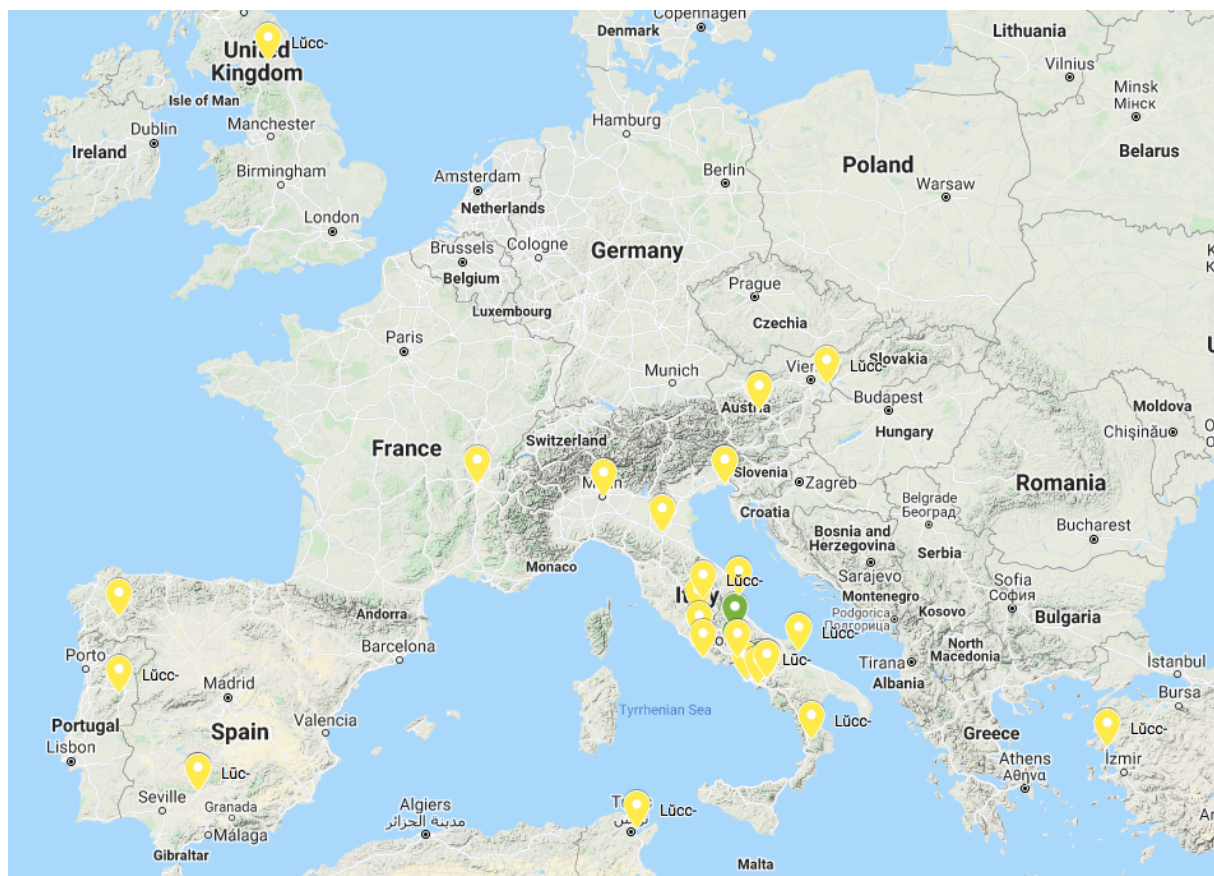
TABLE 3.16 *V:C ~ VCC ratio of the variants Lūcius ~ Luccius and Lūceius ~ Lūcceius*

As can be seen, the form with the *-ius* suffix shows the prevalence of the /V:C/ allotrope, except for of the 2nd century AD. Conversely, the form with the *-eius* suffix shows the prevalence of the /VCC/ allotrope. On this difference we shall return later. If we consider together the variants /V:C/ ~ /VCC/, independently from the suffix, we may notice that the geminated variant progressively emerges over the centuries: during the 2nd century BC it is attested only the /V:C/ variant, but during the 1st century BC the /VCC/ variant is attested with the same frequency as the non-geminated one; from the 1st century AD onwards the geminated allotrope turns out to be most attested variant, with a stable proportion of the /VCC/ variant as compared to the /V:C/ one.

MAPS 3.1 and 3.2 show the geographical distribution of the variants /V:C/ (green) and /VCC/ (yellow), respectively for the centuries 1st BC and 1st AD, when the highest degree of variability is documented. The equivalence of the types *Lu(c)ius* and *Lu(c)cius* is further corroborated by the chorographic and prosopographic conformity of these two forms. As can be seen, during the 1st century BC the /V:C/ and /VCC/ allotropes are attested in the same areas, mainly of Oscan culture – as is further evidenced by the detail of the *geminatio uocalium* – and, as previously shown, with the same proportion. The *gens Luc(e)ia* appears to be involved in the administration of local *municipia*.



MAP 3.5 *Geographical distribution of the variants Lūceius ~ Lūcceius, 1st century BC*



MAP 3.6 Geographical distribution of the variants *Lūceius* ~ *Lūcceius*, 1st century BC

During the 1st century AD, the /VCC/ variant, mainly represented by the type *Lucceius*, is the most attested one, and is the only one to be documented outside the Italian Peninsula, in consequence of phenomena of geographical mobility.

Let us examine if it is possible to find a general *ratio* for explaining the trigger of the gemination. In Latin, two *gentilicia*, which seem to be superimposable to each other, are attested, i.e. *Luc(c)ius* and *Luc(c)ei*, deriving from **Louk-* by means of the isofunctional suffixes **-ijos* and **-eijos*. The documentation referring to these *gentilicia* leads to conclude that such names designated a *gens* of Oscan origin, and Oscan inscriptions, indeed, appear to attest the name of this *gens* as well. The detail of the *geminatio vocalium* in LUVCEIVS is a further piece of evidence in this respect. Either names present two variants, i.e., with or without gemination. The geminated variant is marginal as far as the type *Lucius* is concerned, whereas is the regular one as for *Lucceius*.

It is not to be ruled out that the gemination in the type *Lucius* may be ascribed to Oscan geminations before /j/, as evidenced by other *gentilicia* such as **Dekkiis**, but this hypothesis is not entirely convincing for the above discussed reasons. In fact, consonant gemination is not widely attested among Oscan *gentilicia* (even though orthographic evidence may be deceiving) since the suffix of the *nomen gentile* is generally dissyllabic.

Possibly, this type of gemination may be also explained internally in Latin, as the result of the gliding of CijV- > -CiV, which can be documented as early as the 1st century BC. The glide /j/, in fact, may trigger the gemination (c.f. e.g., FACCIO, Agostiniani 1998). Nonetheless, this explanation seems to be problematical. If the trigger of the gemination was /j/, it would not be possible to account economically for the gemination in the analogous *Lucceius*, as well as for other instances of gemination affecting this base (such as *Luccilius*, cf. *CIL* 11, 2233; *CIL* 2, 4967,18b; *AJ* 557), and we would not expect that the geminated allotrope is marginal as far as the variant with the *-ius* suffix is concerned.

An alternative explanation may single out another element, on which we have long focused at the beginning of this section, i.e., the diphthong *-ou-* in the stem **Louk-*. Note that the <OV> spelling is attested, as far as this *gentilicium* is concerned, in two inscriptions respectively from Corfinium and Sulmo, i.e. LOVCIA in *CIL* 1, 1785 and *CIL* 1, 3222. Unfortunately, these inscriptions are of uncertain dating, but the picture drawn so far, as well as the fact that the variant with the *-ius* suffix is attested earlier than the variant with the *-eius* suffix, allows to hypothesize that these inscriptions can be dated to the 1st century BC at the latest. Noteworthy, the diphthong *ou* was likely to be still preserved in Oscan, whereas Latin tended to its monophthongization as early as the 4th-3rd century BC.

Our guesswork is that the examined variants may be explained as the result of the Latin rendering of this Oscan *gentilicium*, whose diphthong is supposed to be still preserved in the source language. It is conceivable that, in the horizontal contact between Latin and Oscan, the same processes as those attested in the diachronic line of Latin had occurred.

Diachronically, the following adaptations of the Oscan *gentilicium* *Lúvkiis* are expected and attested:

- (1) preservation of the diphthong, cf. LOVCIA in Samnitic areas, paralleling, in the same areas, the forms *Loucies* (*EE*-8-1, 147; *CIL* 1, 3220);
- (2) monophthong /ō/, i.e. LOCEIA, from Apulia, consistently with the developments expected in Latin in the same period;

(3) two parallel outcomes from the 1st century BC, i.e. *Lūc(e)ius* and *Lūcc(e)ius*. As far as *Lūccius* is concerned, the brevity of *-u-* is conceivable in the light of the parallel provided by *Lūcceius*.

If we assume the preservation of the diphthong *-ou-* in Oscan, the name of the gens *Louc(e)ia* is likely to have been adapted into Latin, starting from the 3rd century BC at the latest, with a tendency towards monophthongization. This process might have occurred according to different pertinentizations of the features, namely [+long] and [+tense] in the outcome *Lūc(e)ius* and [+tense] [-long] in the outcome *Lūcc(e)ius*, with following compensatory processes triggering the gemination of /k/. From an articulatory perspective, high vowels are inherently shorter, and they are even shorter before voiceless stops. This fact might have further contributed to the perceptual reanalysis. The oscillation in the outcomes [ūk] ~ [ūkk] is to be framed according to various directrices of learning Latin. The epigraphic testimonies, however, do not show a correlation of the variants to specific groups, such as to allow a sociolinguistic evaluation of what emerges from the diachronic data. However, it is possible to make some plausible considerations in the light the following facts:

(1) during the 1st century BC the variants [ūk] ~ [ūkk] are equally represented, but the variant [ūkk] is more attested with the suffix *-eius*; conversely, the variant [ūk] is more attested with the *-ius* suffix;

(2) during the 1st century AD the variant *Lūcius* is more attested than *Lūccius*, but the variant *Lūcceius* is by far the most represented one, even outside the Peninsula.

Quantitative data might be interpreted in demographic terms and related to the consequences of the Social War. Until the 1st century BC, epigraphic data show that the gens *Lu(c)c(e)ia* is involved in the administration of local *municipia*. If the data related to the monophthongization in /ō/ cannot go beyond the diachronic aspect, we may hypothesize that the monophthongization in /ū/, more documented in the first phase, affected a portion of the population that had Classical Latin - which was taking shape in this period – as a learning target. Conversely, another segment of the population, designated by the suffix *-eius*, which is a specific mark of non-Latinity, may have had as a learning target a substandard variety, in which the compensatory phenomena of the *littera*-type are likely to have occurred. The greater diffusion, clearly evident in the 1st century AD, of the onomastic type *Lucceius*, marginally noted also by means of phonetic spellings, are to be interpreted in the light of the fact that the extension of citizenship to all Italics, massive recruitments and geographical

mobility were responsible for allowing the surfacing of the variant that initially reflected a substandard variety.

3.4.2 *Iūpiter* ~ *Iuppiter*

The nominative / vocative *Iūpiter* has certainly long /ū/, as is evidenced by reconstruction since it results from the monophthongization of *ou* (< **eū*) in the vocative form **d̥ieū-pater* (cf. Gk. Ζεὺ πάτερ). The geminated variant *Iuppiter* is the regular one, even though the form *Iuppiter*, albeit to a lesser extent, is attested as well (cf. *OLD* s.v.).

Inscriptional data evidence the following variants, i.e. IVPITER (27 attestations out of 32), IVPITER (4 attestations) and IOPITER (a unique attestation), as is shown in TABLE 3.10.

Form	Edition	Date	Provenance
IVPPITER	<i>CIL</i> 4, 4966	80-42 BC	Mauretania Caesariensis (Caesarea)
IVPPITER	<i>CIL</i> 6, 877	17 BC	Roma
IVPPITER	<i>CIL</i> 2, 172	37 AD	Lusitania (Aritium Vetus)
IVPPITER	<i>CIL</i> 6, 2024	27 AD	Roma
IVPPITER	<i>CIL</i> 6, 2028	38 AD	Roma
[IV]PPITER	<i>CIL</i> 6, 2034	54 AD	Roma
IVPPITER	<i>CIL</i> 6, 2059	80-81 AD	Roma
IVPPITER	<i>CIL</i> 6, 2064	86 AD	Roma
IVPPITER	<i>CIL</i> 6, 2065	87 AD	Roma
IVPPITER	<i>CIL</i> 6, 2068	91 AD	Roma
IVPPITER	<i>AE</i> 1911, 168	1-300 AD	Moesia superior (Babe)
IVP[PI]TER	<i>CIL</i> 6, 81	151-200 AD	Roma
IVPPITER	<i>CIL</i> 6, 2074	101 AD	Roma
IVPPITER	<i>CIL</i> 3, 1933	137 AD	Dalmatia (Salona)
IVPPITER	<i>AE</i> 1911, 167	151-250 AD	Moesia superior (Babe)
IVPPITER	<i>AE</i> 1960, 89	151-300 AD	Noricum (Lentia)
IVPPI[TER]	<i>AE</i> 1960, 89	151-300 AD	Noricum (Lentia)
IVPPITER	<i>CIL</i> 8, 9018	246 AD	Mauretania Caesariensis (Auzia)
IVPPITER	<i>AE</i> 2004, 1266	271-330 AD	Moesia inferior (Transmarisca)
IVPPITER	<i>CIL</i> 6, 537	351-400 AD	Roma
IVPP[I]TER	<i>CIL</i> 8, 17586		Numidia (Bir Umm Ali)
IVPPITER	<i>CIL</i> 6, 2072		Roma
IVPPITER	<i>CIL</i> 6, 32328		Roma
IVPPITER	<i>CIL</i> 10, 90		Provincia incerta

IVPPITER	CIL 8, 20249		Mauretania Caesariensis (Satafis)
IVPPITERIS	CIL 13, 278		Lugdunensis (Lugdunum)
IVPPITER	NSA-1921-48		Roma
IVPITER	CIL 4, 04966	80-42 BC	Latium et Campania Regio I (Pompei)
IVPITER	CIL 4, 6864	79 AD	Latium et Campania Regio I (Pompei)
IVPITER	CIL 8, 27739		Africa proconsularis (Sidi bu Ruis)
IVPITER	AE 1906, 15		Africa proconsularis (Qafur)
IOPITER	CIL 10, 5317		Latium et Campania Regio I (Casinum)

TABLE 3.17 *Variants of Iuppiter as evidenced by epigraphic data*

Data do not allow to individuate cogent correlations of these variant with “sociolinguistic” variables, since text type, referring, as one would expect, to the genre of *tituli sacri*, is quite homogeneous. However, we may notice that the form *Iuppiter* is the only one attested exclusively at Rome, from the 1st century BC to the 5th century AD; conversely, the form *Iupiter* appears to be attested for a limited and early period (BC 1st – 1st AD). Moreover, it is not to be ruled out that the form IOPITER, though being a *testis unus*, possibly ascribable to a mere inaccurate spelling, may represent the dialectal outcome /ow/ > /ō/), similarly to the above discussed POLOCES and LOSNA (CIL 14, 4095). Nonetheless, the uncertainty related to the dating of the text, crucial for this interpretation, does not allow to reach this conclusion with certainty.

Therefore, we may notice at the outset, that the form *Iūpiter* was probably the most ancient one, consistently with the reconstructive framework (**D̥iō̯pater* > *Iūpiter*), whereas the form *Iuppiter* is attested with documentary continuity for a longer period and is to be considered the regular and classical variant (just as in the case of *Lucceius* as compared to *Lūceius*). A potential parallel monophthongization might be represented by IOPITER (i.e. *D̥iō̯pater* > *Iōpiter*).

The main problem concerning the possibility of including the pair *Iūpiter* ~ *Iuppiter* within the *littera*-pattern, which is called «Iuppiter rule» as well (cf. Weiss 2009, p. 144), lies in the fact that it is not possible to infer with certainty the brevity of -u- in the geminated allotrope. According to Battisti (1923): «non v'è dubbio che l'u in *Iuppiter* sia indicato arbitrariamente; si tratta, come si capisce dalla forma equivalente Ζεῦ πάτερ, d'un originario vocativo, e il raddoppiamento è dunque da confrontare con quello che ha luogo nei personali» (pp. 96-97). While accepting that consonant gemination may have been triggered by the expressive nature of the vocative, as well as by the accentual, i.e., dactylic structure of the word, this fact does not rule out the possibility that /ū/ had been shortened in parallel to the gemination of /p/, consistently with the Latin prosodic drift towards the lightening of hyperheavy rhymes, as Benedetti (1996, p. 20) points out.

The examined material, however, does not provide compelling evidence in this respect: as a matter of fact, inscriptions do not display variants adopting the allograph <O> for Classical Latin /ū/ with regards to this lemma, nor the metrical inscriptions in which *Iuppiter* is attested may provide conclusive clues, since the metrical scansion of *Iūp-* would be the same as *Iūp-*. Therefore, a potential aid for ascertaining the quantity of -u- may be provided by the examination of other sources and the Romance outcomes.

Indeed, the manuscript tradition seems to attest the variant <Ioppiter> (e.g., *L* and *P* of Servius' commentary, 10th century AD), possibly hinting at /ǔ/ merged with /ō/. As for the Romance outcomes, the issue is further complicated by the fact that the Romance languages mostly continue the allomorph IOV- (e.g. *IOVIA, cf. Venez. *dzioba*; IOVIALEM, cf. Logud. *goyale*; IOVIS BARBAM, cf. Fr. *joubarbe*, Span. *chubarba*; IOVIS DIEM, cf. It. *giovedì*, Fr. *jeudi*; REW §§ 4591-4594). The only exception is represented by the Oil languages, continuing IUPPITER with the general meaning of 'name of a devil' in Old French (*jupiter*), with a further semantic development of 'lively and turbulent child' (Ang. *jupitar*, Vendôme *jupiter*), which gave rise to denominal verbs meaning 'to squirm, to fidget, to pull a funny face' (Mfr. *jupitriser*; Norm. *gipoutrer*; Mal. *žopitre*; Dol. *jaupitrer*; Renn. *jôpitrer*, cf. FEW s.v.). There is slight evidence that these outcomes imply a development, via degemination, from IŪPPITER, with Latin /ū/ > OFr. /ɔ/ ([ɔ]), suggested by the fluctuating spellings <u> and <o>, and especially by the spellings <ou> in *jipoutrer* (possibly a metathetic form).

We can conclude, with good approximation, that *Iuppiter* had /ǔ/. At this point, by bringing together all the discussed data, we can draw the following picture. The form **Dīou̯pater* undergoes two processes of monophthongization, i.e. *Iūpiter*, scarcely attested among inscriptions, and *Iopiter*, by accepting the interpretation of the form from Casinum. Conversely, the geminated outcome *Iūppiter* is fairly much more attested. The vocative nature of this expression, as well as its accentual structure, may have favored the "expressive" gemination for assigning syllable weight. It should be noted that the fluctuation of the allotropic pair *Iūpiter* ~ *Iūppiter* dates back, according to epigraphic evidence, to the 1st century BC, just in the period we have certain attestation of the synchronic alternation between the variants *Lūc(e)ius* and *Lūcc(e)ius*. The variant *Iūppiter* is then attested with documentary continuity, and Late Latin manuscript tradition seems to attest the *Ioppiter* form, which would have reflections, albeit limited to French, in the Romance documentation.

3.4.3 *litera* ~ *littera*

Paradoxically, that the pair *litera* ~ *littera* may be included in the pattern of the *lex littera* is questionable. As is known, the canonical and established form is *littera*, whose Romance outcomes seem to assure the brevity of /i/ (e.g. It. *lettera*, Fr. *lêtre*). The spelling <LITERA> is attested in manuscript tradition (cf. *TLL* s.v.) and in non-literary texts to a non-negligible extent, as we shall see.

The length of *-i-* in the non-geminated allotrope is assumed based on LEITERASVE as evidenced by the *lex Repetundarum* (*CIL* I² 583, 123-122 BC). However, the possibility of interpreting the form <LEITERAS> as corresponding to /līteras/ is complicated by the typology of the source: as a matter of fact, this text dates back to 122 BC, when the notation of double consonants was still fluctuating, and the digraph <EI> is also employed, within the same inscription, for the notation of etymological /i/ (cf. e.g., <SEINE>). Given the above, scholars such as Juret and Battisti ruled out the possibility of giving credit to this attestation to assure the length of *-i-* in the non-geminated allotrope, since the form <LEITERAS> might also correspond to /littera/.

A detailed examination of this inscription, however, shows that the incoherence in the use of the *gemination* and of the digraph <EI> is more supposed than real, as Benedetti (1996) has already pointed out.

It is worthwhile to discuss the examination of this inscription. It is a very long text, distributed on 11 bronze plates: net of the integrated forms and of the abbreviations, the inscription contains 2177 tokens. TABLE 3.11 displays the occurrence of geminated vs. non-geminated spellings as compared to the respective classical form. As for long consonants resulting from assimilation in prefixation, the potential presence of non-assimilated spellings is reported as well.

CLASSICAL FORM	GEMINATED SPELLING	NON-GEMINATED SPELLING	NON-ASSIMILATED SPELLING
<i>accipio</i>	1 (ACCIPITO)	0	/
<i>adessint</i>	1	0	/
<i>annus</i>	11	1 (QVINQUENIVM)	/
<i>apparitor</i>	1	0	/
<i>attingo</i>	2	3	/
<i>causa</i>	4	4	/
<i>esse / esset</i>	14	0	/
<i>interrogo</i>	1	0	/
<i>iusserit, iussi</i>	0	1 (IOVSERIT, IVSEI)	/
<i>littera</i>	0	2 (LEITERASVE, LI[T]ERA)	/
<i>mitto</i>	1 (DEMITTITO)	1 (DIMITTITO)	/

<i>oppidum</i>	1	o	/
<i>possideo</i>	1	o	/
<i>proferre</i>	1	o	/
<i>possum</i>	3	o	/
<i>sitella</i>	2	o	/
<i>suffragium</i>	1	o	/

TABLE 3.18 *Geminated vs. non geminated spellings in the Lex Repetundarum, CIL I² 583*

As we can see, the alternations mainly concern *causa* / *caussa*, whose spelling tends to fluctuate in texts of the Imperial age as well; *mitto*, *atingo* and the inflected forms of *iubeo*. On the other hand, there are no occurrences of non-assimilated spellings for words whose gemination derives from assimilation in prefixation. As far as the allotrope of Classic Latin *littera* is concerned, it should be noted that the singleton spelling seems to be attested twice: in addition to the aforementioned <LEITERASVE>, it could be also evidenced by <LI[T]ERA>, in which the dimension of the lacuna is compatible with the omission of a single grapheme. Given the fact that the spelling <LITERA> displays a certain documentary continuity in primary sources, also in texts in which the *geminatio* is applied with consistency, it is likely that this form actually attests to a variant with phonological singleton consonant.

Let us now examine the use of <EI> within this inscription. TABLE 3.12 shows the forms presenting <EI> in relation to the quantity of the underlying *-i-* and the distributional contexts of occurrence (whether in the root or in the inflectional morpheme) as opposed to the use of <I>.

	CLASSICAL LATIN	<EI>	<I>
/ī/	<i>cūis</i> (< *keiwi-)	5	1
	<i>dīco</i> (< *deik-o-)	6	o
	<i>lītis</i> (< *slī-ti-)	2	6
	<i>lītera</i>	1	1
	<i>nī</i> (< *nei)	25	o
	<i>sī</i> (< *sei)	16	o
	<i>sībī</i> < <i>sībī</i> (< *sibei)	3	o
	<i>ubī</i> < <i>ubī</i> (< *ubei)	7	o
	<i>ibī</i> < <i>ibī</i> (< *ibei)	1	o
	<i>utī</i> (< *utei)	16	o
	-ī (NOM.PL. TEMI -O-)	97	5
	-īs (DAT.ABL.PL.)	18	12
/ī/	<i>sīne</i>	1	1

TABLE 3.19 *Use of <EI> and <I> for CL /ī/ and /i/ in the Lex Repetundarum, CIL I² 583*

As can be seen, the digraph <EI> is employed to a greater extent to indicate LC /ī/, especially whenever the reconstructed form implies the diphthong *ei. There is just a sole occurrence of <EI> for LC /ī/, i.e., SEINE (CL *sine*), which, however, is also written with <I>. At this point, also the argument concerning the use of <EI> as non-conclusive evidence of the length of /ī/ would appear rather weak. The only case of <SEINE>, which is also written <SINE>, does not seem sufficient to invalidate the evidence provided by the use of <EI> as possible clue of the length of -i- in the non-geminated allotrope. Moreover, the spelling <SEINE> could be also explained as a mere mechanical error, possibly due to analogy with *sī* and its compounds (e.g. *nisi*), occurring 16 times in this text, always with the spelling <SEI>. In the light of the above considerations, it is conceivable that the spelling <LEITERAS> may represent /līteras/ or even /leīteras/. However, the presence of the diphthong is not ascertainable, since the inscription presents either spellings, both with <EI> and with <I>.

This picture can be made more solid by looking for further clues aiming at ascertaining the length of -i- in the non-geminated allotrope and the potential presence of the diphthong in the root. The reconstructive framework does not provide conclusive data and represents a sort of *cul de sac*. On the basis of <LEITERAS> found in the *Lex Repetundarum*, a derivation from *lītes a (<*leites -a) has been proposed, from *l(e)i-to ppp. of the verb *linō* 'spread, smear' (the semantic development would therefore be 'smeared sign' > 'letter') (cf. LEW, p. 814). However, this proposal is not convincing at the phonological and morphological levels (cf. EDLIL s.v.), since the ppp. of *linō* is *lītus*, with short vowel, unless the formation from a full grade is supposed (Benedetti 1996, p. 39); on the morphological side, however, as De Vaan observes, it is unlikely that from a ppp. *l(e)i-to may derive a sibilant stem *leit-e/os, without other parallels (EDLIL s.v.).¹⁷⁷

¹⁷⁷ According to another hypothesis, firstly proposed by Bréal and then accepted by Meyer-Lübke and Battisti (1923), *littera* would be a borrowing from Gk. διφθέρα 'piece of leather, writing material' (LSJ s.v.). This hypothesis, which would imply that the form *littera* had never existed, poses two difficulties, i.e. on the one hand the "sabine" treatment of /d/, similarly to the pair δάκρυμα ~ *lacruma* and, on the other, the assimilation of Gk /p^ht^h/ > OLat. /pt/ in /tt/. As for the first point, there is no reason, in principle, to rule out this kind of treatment: Gk διφθέρα is attested since Herodotus, from whom we learn that the Ions were used to naming books as διφθέρας since ancient times (τὰς βύβλους διφθέρας καλέουσι ἀπὸ τοῦ παλαιοῦ οἱ Ἴωνες Hdt.5.58). This fact may support an ancient contact and the possibility of a "sabine" treatment of this loanword; on the other, it is fairly more difficult to explain the treatment of /pt/ with total regressive assimilation, which is a quite late phenomenon. Therefore, these two phenomena are unlikely to have occurred simultaneously for the adaptation of an ancient loanword. Moreover, this hypothesis would imply that the form *littera* should be discarded, whereas the non-geminated form is well-documented.

Leaving aside the reconstructive problem, and just analyzing Latin data, we may notice that the form <LITERA> is quite attested in Latin primary sources, and that displays a certain documentary continuity. Let us examine whether such attestations may provide clues about the length of *-i-* in the non-geminated allotrope. Just to offer absolute quantitative estimates, the canonical form *littera* is attested in direct documentation 166 times, from the 1st century BC to the 7th century AD, whereas the variant *litera* 26 times, from the 2nd century BC to the 6th century AD. This first picture suggests that the form *litera* is more ancient. Let us now see the distribution of the two allotropes for synchronic cuts in relation to extra-linguistic variables.

Form	Edition	Date	Text type	Provenance
LI[T]ERAM	<i>CIL</i> 1, 583	123-122 a.C.	<i>Lex</i>	<i>Roma</i>
LEITERAS	<i>CIL</i> 1, 583	123-122 a.C.	<i>Lex</i>	<i>Roma</i>
LITERAIVE	<i>CIL</i> 1, 595	104-100 a.C.	<i>Lex</i>	<i>Etruria / Regio VII, Clusium</i>
LITERAS	<i>CIL</i> 10, 8214	100 - 51 a.C.	<i>Defixio</i>	<i>Latium et Campania / Regio I, Cumae</i>
LITTERAS	<i>CIL</i> 6, 40890	78 a.C.	<i>senatus consultum</i>	<i>Roma</i>
LITTERAS	<i>CIL</i> 2-5, 1022	44 a.C.	<i>tituli sacri</i>	<i>Baetica, Urso</i>
LITERAS	<i>CEL</i> I 9	25-1 a.C.	private letter	<i>Aegyptus, Primis</i>
LITT[ERATI]	<i>AE</i> 1974, 134	30 a.C. - 30 d.C.	<i>tituli sepulcrales</i>	<i>Latium et Campania / Regio I, Trigoria</i>

TABLE 1.20 *Distribution of the forms litera and littera in Latin primary sources (BC 2nd – 1st c. AD)*

Data suggest that the form with singleton consonant is more ancient, with a particular concentration in Rome and in Central and Southern Italy and is mainly attested in official and public texts. It is also attested on a private letter on papyrus from Primis (Egypt), dating back to the end of the 1st century BC. Conversely, the form *littera* is attested from the 1st century BC in official texts, both from Rome and other provinces, and its higher frequency of use is suggested by the fact that it operates as base of derivation, assuming the supplementation in *AE* 1974, 134 is correct (however, it is highly conceivable; in fact, the indication *litteratus* often occurs in sepulchral inscriptions for indicating the cultural level of the deceased, cf. e.g., *litteratus Graeci et Latinis* in *CIL* XI 1236 and *celte litteratus* in *AE* 1958 125). This first picture, therefore, suggests that the form *litera*, which was the canonical one during the 2nd century BC, was then replaced, even in official texts, by *littera* around the 1st century BC, which was probably the most widespread variant. The form *littera* was preserved mainly as archaism, as is evidenced by the letter on papyrus, diffusely showing an old-fashioned style.

The form *littera* is widespread in texts of the Imperial age and is attested in all text types and in all areas of the Roman Empire. The form *litera*, on the other hand, is attested 9 times, and shows a

similar variability. The two forms, though with different proportions, seem therefore equivalent. This is evident within coherent corpora, such as the Bu Njem ostraca (253-559 AD), showing both the form *litera* (LITERAS in O. Bu Njem 110) and *littera* (LITTERAS in O. Bu Njem 67, 68 e 71).

Metrical inscriptions turn out to be particularly helpful to ascertain the quantity of *-i-* in the non-geminated allotrope, cf. TABLE 3.14:

FORM	EDITION	DATE	TEXT TYPE	PROVENANCE
LITERA	<i>CIL</i> 3, 11451	1-300 d.C.	tituli sepulcrales	Pann. superior (Carnuntum)
LITERIS	<i>CIL</i> 6, 01417	271-280 d.C.	tituli sepulcrales	Roma
LITERARUM	<i>CIL</i> 13, 08355	331-370 d.C.	tituli sepulcrales;	Germ. inf. (Claudia Ara Agrippinensium)

TABLE 3.21 *Poetic inscriptions showing the form <LITERA>*

The form (1) is attested in a text in elegiac distich, carved on a clay plate, in cursive script (cf. FIGURE 3.12, with modern rubrication of the engraved letters). The word <LITERA> appears in the first dactyl of the hexameter (- U U), which might ensure the length of *-i-*. However, the evidence of this inscriptions is not entirely conclusive, since the versification would seem to follow an isosyllabic rather than a quantitative criterion. The first verse in fact is LITERA NULA DOCCET NOMEN CAVSANQUE SEPVLCRI. It is worth noticing the degemination of /ll/ after long vowel and the gemination of *dōcēt* in *doccet*. Either phenomena can be explained by the tendency to associate stressed and heavy syllable, with either the lightening of hyperheavy rhymes or the lengthening of light syllables by means of the gemination of the consonant rather than by the lengthening of the stressed vowel. However, by adopting a quantitative criterion, the scanning of the verse seems to be erroneous, since the sequence NULA DOC |, to be scanned - U -, occupies the position of a dactyl, before the ephthemimer caesura.

The verses (2) and (3), on the other hand, do not present such problems and appear to have been written more correctly. The form <LITERIS> is attested in the verse VIXI BEATVS DIS AMICIS LITERIS, and occupies the last three syllables (— U X). This piece of evidence would confirm the length of *-i-*. The form under (3) is attested in a funerary poem of the 4th century BC, from Koln, in iambic dimeters. At the verse 13 we read: TOT LITERARVM ET NOMINVM, to be scanned TOT LÍ-TERÁ |R(VM)ET NÓ-MINVM. The first syllable of LITERARVM is therefore in arsis.

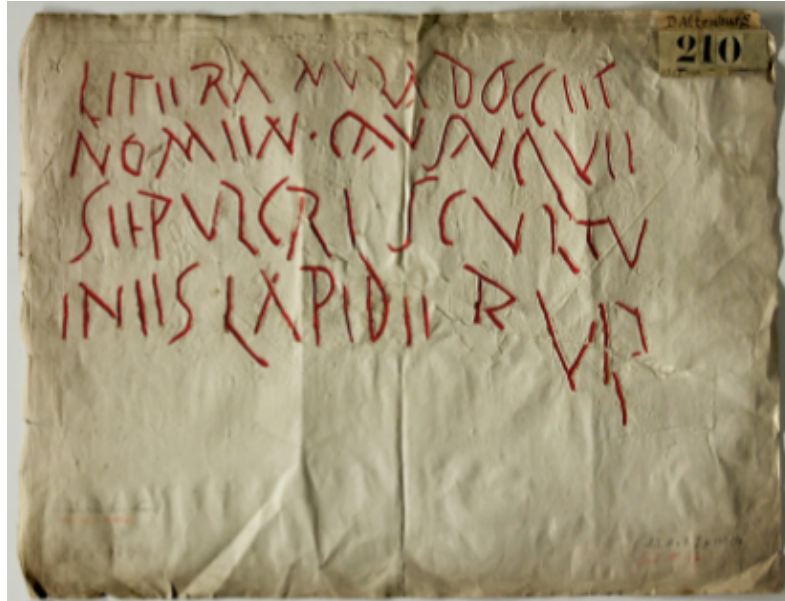


FIGURE 3.17 *CIL* 3, 11451 = *CLE* 923

The discussed data seem to confirm that the allotrope *lītera* had long /ī/, at further confirmation of the evidence, though questionable, provided by <EI> in the *Lex Repetundarum*.

In later texts, from the 5th to the 7th century, the two forms continue to be equally attested without particular differentiations, also within the same group of texts, as in the case of the *Tablettes Albertini* (6 forms with singleton spelling, including a unique attestation of LITARAS vs. 19 with the geminated spelling) and the Ravenna papyri (3 forms with the singleton spelling vs. 9 with the double spelling).

3.4.4 *cipus* ~ *cippus*

As in the case of *littera*, we know that *cīppus* had /ī/ based on the Romance outcomes (e.g., It. *ceppo*). The existence of a non-geminated allotrope with long vowel, however, is more controversial. Differently from the previously discussed case, there is no documentary evidence of the non-geminated allotrope, for the reasons that will be discussed below. A possible piece of evidence may be provided by onomastic data, which, however, need to be evaluated carefully. Reconstruction and comparison, on the other hand, may be helpful to ascertain that the underlying form of *cippus* may have been *cīpus* < **ceipos*. However, a series of clues which will be analyzed allow to infer the possibility of an alternation *cipus* ~ *cīppus* according to the *lex littera* pattern.

The form CEIP(OM), validated since Brugmann (1886) to account for the existence of an allotrope *cīpus* (< **ceipos*), is actually highly controversial, as has been noted by Juret and Battisti. This form is engraved on a votive dedication from the sanctuary of *Lucus Angitia*, on the southern shore of the Fucino basin, dated to the early 3rd century BC. The dating of the text is a first element leading to analyze with caution the singleton spelling as evidence of singleton consonant. Furthermore, a careful examination of the text may also reveal that the proposed interpretation of CEIP as abbreviated form of CEIP(OM) is not that immediate since the overall hermeneutics of the inscription hints at other interpretations to be more plausible. It is therefore necessary a brief examination of this issue.

The text is engraved on a small bronze plate (h 10x11) and only two apographs by Bernabei (NSA, 1877, plate XIII) and Jordan (reproduced in *CIL* I² 5, cf. FIGURE 3.13) are remaining. It is a fragment of a belt, and the inscription was carved in the inside part of it. The text is written with punctuation and imperfect boustrophedonic script (dx sx dx dx sx dx sx dx). This inscription is widely acknowledged to be an important relic of the latinization of the Marsi (cf. Horrocks 2007b, pp. 112-113). De Rosalia (1978) transcribes the text as follows:

CASO·CANTOVIO	→
S·APRUFCLANO·CEI	←
P·APURFINEM·[[E]]	→
CALICO·MENUR	→
BID·CASONTIO	←
SOCIEQUE·DONO	→
M·ATOLERE[.]ACTIA	←
PRO·L[ECIO]NIBUS·MAR	→
TSES	←

The form CEI/P (ll. 2-3) is interpreted as CEIP(OM) by Jordan (1881), Diehl (1910), von Grienberger (1909), von Planta (1897, I 103) and by the scholars assuming <CEIP> to be evidence of the existence of a *ceipos* > *cīpus* in allotropic alternation with *cīppus*. According to other scholars, <CEI/P> would be an instance of a dialectal form of Latin *hic* (therefore, it would not be an abbreviated form), according to the following reconstruction: PIE *ki* 'this'¹⁷⁸ (cf. Lt. *cis* (and *citer*, *citro*, *citimus*,

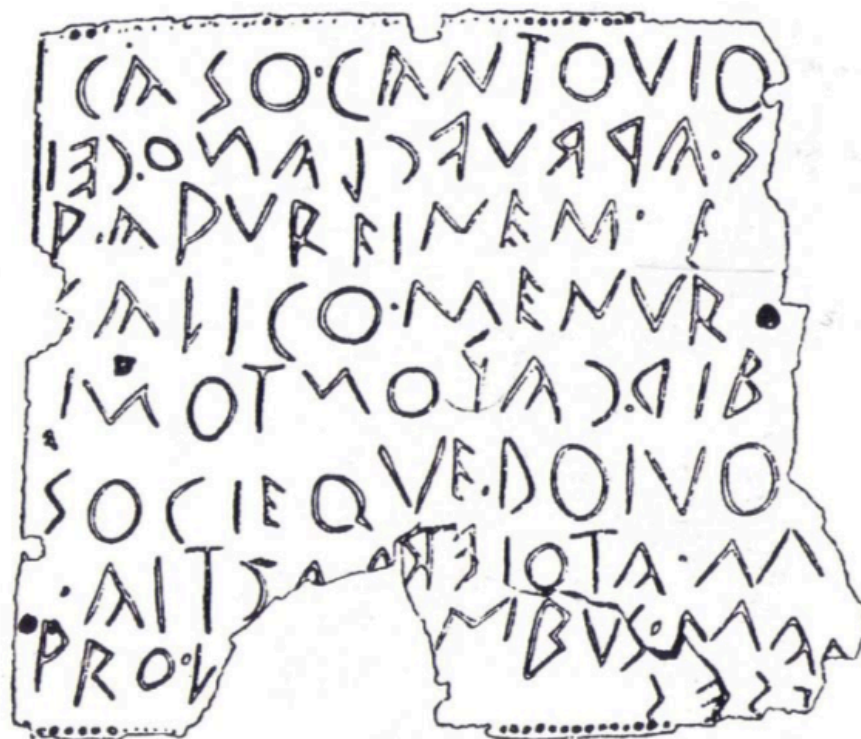
¹⁷⁸ cf. Hit. *kā-* / *kū-* / *ki-*, Pal. *kā-* 'this', *kījat* 'here', CLuw. *zā-* / *zi-* 'this' < PIE **ko-*, **ki-*, OPr. *schis*, Lith. *šis*, OCS *sb* 'this'; Go. *himma* 'to this', *hina* 'this' [acc], Go. *hidre* 'hidre'.

citerior), -ce (in *hoc* < *hocc* < *hod-ce*, *ecce, illic*), cf. *EDLIL* s.v.) followed by the enclitic particle -pe (cf. *Lt. nempe, quippe*).¹⁷⁹ This interpretation is accepted by Vetter (Ve 228a) and Untermann (s.v.).



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¹⁷⁹ Plt. *-pe, PIE *-pe. Cfr. WH II: 269₃ EM 491, Beekes 1995: 223, Melchert 2002, Dunkel 2005: 175f and; WH I: 222, EM 123, IEW 609f., Leumann 1977: 317f., Untermann 2000.



Tav. 4 - Jordan 1833 = *CIL* I 2, 5, p. 372.

FIGURE 3.18 Apograph of the inscription of Caso Cantovios

La Regina (1989), providing a detailed historical reconstruction of the text, interprets the form CEIP as *ceip(ed)* = *cepit*. Moreover, it is worth noticing, as is evidenced by the photograph, that the <I> after <CE> is not clearly marked (cf. Del Tutto Palma 2002), therefore the reading <CEP> cannot be ruled out (cf. <CEPET> in *CIL* 3 14203, 22, 2nd c. BC).¹⁸⁰

According to La Regina, this text should be interpreted as follows: “Caso Cantovio Aprufclano¹⁸¹ took [it, i.e., the object which is offered] near the Gallic boundary in the Casontonia city, and the fellows gave it as a gift to Anctia on behalf of Marsian legions”.

This interpretation makes greater sense both from the textual and historical point of view. Indeed, assuming <CEI/P> = *ceip(om)* or *hic* poses questions from a syntactic point of view: in the first case, a form of accusative would require a transitive verb to depend on; the second interpretation would make more sense if we consider that <CEI/P> is directly followed by a locative complement

¹⁸⁰ This reading is accepted by: De Rosalia (1978, p. 72); Warmington (1979, p. 58), Wachter (1987, p. 169), Prosdocimi & Marinetti (1988, pp. 107-108), La Regina (1989, pp. 399-401); Silvestri (1993, pp. 113-115); Vine (1993, pp. 35-37); Rocca (1994, pp. 226-228); Del Tutto Palma (1997, pp. 477-487).

¹⁸¹ *Aprufclano(s)* è etnico, legato al toponimo sabellico *Aproficulum* (si veda il *pagus Ficulanus* dei Vestiti *CIL* IX 3578 e il *pagus Caproficulanus* a Nola, *CIL* X 1279; cf. Poccetti (2008).

(i.e., APUR FINEM), but is however difficult to explain from a syntactic point of view. The *-que* in SOCIEQVE, in fact, implies a coordination between two sentences. This would mean that SOCIE, whose predicate is ATOLERE, should be coordinated to a parallel sentence, whose subject is CASO CANTOVIOS APRUFCLANO and whose predicate should be identified with CE(I)P. Furthermore, it would seem difficult to imagine that a *cippus* can be offered to a deity, given that the gift is concretely a bronze belt, i.e., the object bearing the inscription. Nor Luco dei Marsi, by accepting the interpretation CEIP = *hic*, is located *apud finem Gallicorum*¹⁸² *in urbe Casontonia*.¹⁸³ Moreover, similar formulas, with the use of the verb *cipio*, find parallels in other dedicatory formulas (cf. *CIL* I² 608, 615, 622, especially 613: L. Quinctius L. f. Leucado cepit eidemque consol dedit). Ultimately, this belt would be a gift that Caso Cantovio, commander of the Marsi, conquered as war booty in the battles that the Romans, together with Campanian and Latin socii, at the beginning of the 3rd century BC, fought on the northern front against Gauls, Etruscans, and Umbrians. The fellows of Caso Cantovios, who may have died in that war, brought the object, on which the inscribed bronze sheet was affixed, to the sanctuary of Angitia, obtained from the belt of an Italic armor, and perhaps from the belt of Cantovios himself.

This digression was necessary to discard the actual attestation of a *ceipom* as an ancient form of *cippus*. After this, so to speak, *pars destruens*, let us see whether there are other clues possibly hinting at the existence of the non-geminated allotrope with long vowel. The reconstructive framework suggests that Lt. *cippus* may have a genealogical relation with Sk. *śépa*, *śépha* 'tail, penis' (*IEW*, *DELL* and *EDLIL*), therefore implying a common base **kéip-o-* or **(s)kéip-* with mobile *s-*, by

¹⁸² The reading *e/salicom* was first brought into question by Peruzzi. The letter <S>, at the beginning of l.4, is not complete, and only an above oblique trait is remaining. For this reason, Peruzzi interpreted this letter as <T>, i.e. <E/TALICOM>, and therefore the *gesta* by Caso Cantovios are supposed to have taken place in Southern Italy, perhaps in Lucania, wherein the Italian boundary of that period should be located. The historical reference would hint at the ventures of Scipio Barbatus. Nonetheless, as La Regina observes, this is the geographical concept of Italy by Greek people around the 5th century BC and not of Romans and Latini of the 3rd century BC. The examination of the photograph, moreover, allows to detect that the letter <E> at the end of l.3 seems to have been erased by a re-typing (and this fact may also explain the interruption of the boustrophedonic progression), whereas the oblique trait on the above, at the beginning of l. 4, may hint at <C>, so that [[E]]/CALICOM = *Gallicorum*. Silvestri (1993), on the contrary, reads [[E]]/TALICOM, with erroneous spelling for Τάλιον, locality near to Bovianum, in Samnium, where a battle was fought in 311 BC. The <E> at the end of l. 3 is to be deleted also according to Del Tutto Palma (2002).

¹⁸³ Which are likely to correspond to the Etruscan ethnonyms *cosuntinial* and *casntinial* (*CIE* 4203, 3688, from Perugia). *Casontonia* may be a Marsian form (with a formation similar to Milonia, Aquilonia) of the ethnonym *Casuentinus* (cf. the *municipium Casuentinorum* in *CIL* IX 4209, from Terni), surviving in the toponym Casentino (which, geographically, may fit the reference to the boundary with the Gallic territory)..

including in this stem also Lt. *scīpio* 'stick', Gk. *σκήπων* 'id.' In the light of the above, even by excluding the CEIP of the inscription from Luco dei Marsi, a form **ceipos* > *cipus* in which consonant gemination complies with the pattern of the *lex littera* is conceivable.

However, further elements in this sense may be provided by Latin data as well, even though they concern onomastics, which, as previously mentioned, always requires an accurate evaluation. There would be evidence of the non-geminated allotrope with long vowel in an onomastic type which is quite attested among the Italic languages, i.e. Oscan *Kīpiús* (von Planta 1987, I, 103, 192) and Latin names with a *Cīp*- base (i.e. *Cīpus*, *Ciparius*, *Cipellius*), some of which presenting consonant gemination (e.g. *Cippianus*, *Cippacius*, *Cippodius*). Fick 1872 (pp. 361-362) assumed a relation of these personal names and the noun *cippus*, which would parallel the relation of *Scīpio* and *scīpio*. This connection is instead entirely ruled out, even if not argued, by Battisti (1923).¹⁸⁴

A possible element allowing to trace a connection between the personal name *Cipus* and the noun *cipus* is provided by the tradition referring to a character of the Early Republican Age, whose *cognomen* is precisely *Cīpus* (vowel quantity is assured by metrics, cf. Ov. *met.* 15, 565 ff.), if it is to be assumed as an instance of 'speaking name'. Genucius Cipus is mentioned in a prodigious story transmitted by three sources of the first Imperial age (i.e., Ov. *met.* xv 565 ff., Plin. *nat.* Xi 37 45, Val. Max. v 6 § 3). We report the passage by Valerius Maximus, summarizing in few lines the salient points of this story:

Genucio Cipo praetori paludato portam egredienti noui atque inauditi generis prodigium incidit: namque in capite eius subito ueluti cornua erepserunt, responsumque est regem eum fore, si in urbem reuertisset. quod ne accideret, uoluntarium ac perpetuum sibimet indixit exilium. dignam pietatem, quae, quod ad solidam gloriam attinet, septem regibus praeferatur. cuius testandae gratia capitis effigies aerea portae, qua excesserat, inclusa est dictaque Rauduscula: nam olim aera raudera dicebantur (Val. Max. v 6 § 3)

The praetor *Cipus*, member of the *gens Genucia*, convinced of the Republican values, renounces to become king, as he had been predicted. For this reason, an *effigies aerea* portraying him is erected in his honor on the door from which he had left and never returned, i.e., the *porta Raudusculana*, along the first furrow of the *pomoerium* traced by the Servian walls. This *effigies* was likely to refer to

¹⁸⁴ "Il riferimento etimologico all'osco *Kīpiús* [...] è naturalmente erroneo, giacché si tratta qui d'un personale italico cui corrisponde il latino *Cīpus*, *Cīpius* che, contrariamente all'etimologia del Fick [...], va tenuto staccato dal nostro vocabolo" (Battisti 1923: xx).

a pomerial stone, and this fact may have motivated the surname assigned by the hagiographic tradition to this *praetor* (cf. Massa-Pairault 1990).

This hypothesis is suggestive and the interpretation in this sense of the *cognomen*, which is usually semantically transparent, fits the structure of the myth and allows to infer that the name *Cipus*, well represented by several variants in Italic onomastics, was perceived as related to *cippus*. Obviously, this is not a compelling piece of evidence, since the juxtaposition can be secondary, but this picture makes plausible that, during the 1st century AD, a relationship between the phonological forms *cĭppus* and *cĭpus* was felt.

The analysis of our corpus allowed to trace, at completely different chronological heights from those examined so far, a form presenting the singleton spelling, though in this case, as we shall see, we have to single out a different explanation. In an inscription from Sicily (*AE* 1964, 184, from Case Cicirello, RG) and dated to the 6th century AD, we may read:

SVPER LO	AIVRA
CELLV · V	TI PER DE
BE IACEO E	V E INFERO
GO BIRGO	S NEMI
N O M I	NVI LICE
NE ZOE	AT
ANORUM	APER ¹ A[[T]]
CI QVE IA	CEIPA
MESA VI	TV
V S	

The text should be normalized as follows: *Super locellum ubi iaceo ego virgo nomine Zoe annorum quinque ianuarii mense VI [.] Adiurate per Deum et Inferos nemini liceat aperiat ceipatum. Vita salus*. The text is rich of vulgar elements, and probably comes from a Greek-speaking context, as the name Zoe seems to suggest (cf. Di Vita 1961, 2005). The form CEIPATV(M) deserves our attention. The noun *ceipatus* is not attested elsewhere, but it is easy to deduce from the context that it means 'sepulcher, mound' (i.e., «no one be allowed to open the tomb», according to a recurrent formula, in which the most frequent collocate of the verb is *arcam*, cf. e.g., *CIL* 11 136). This would be a noun in *-ātu* derived from *cip(p)us* or from a verb **cip(p)ō* with the meaning 'to bury' (see *cippare* 'to

tighten, prevent' in Du Cange and *incippat: includit, intudit* in two Scaliger's glosses, *CGL* V, 601.40 and 602.24). This denominal or deverbal formation would therefore allude to the tomb in the sense of 'closed mound, buried' or 'area bounded by stumps'. The form *ceipatus* stands out, for our purposes, for the use of <EI> and for the presence of the singleton consonant. It would be tempting to see in this form the evidence of the alternation *cīp* (with <EI> = / ī /) ~ *cīpp* (Di Vita 1961, 2005). However, at this chronological height, it would seem unlikely that the allotrope *cīp*-, which is supposed to be more ancient according to the reconstruction, is still productive as a basis of derivation, especially in absence of earlier attestations. The Greek environment, moreover, requires a careful evaluation of the digraph <EI>. In fact, this may be due to graphemic interference with <ει>, which therefore cannot provide clues of the length of the vowel. Ultimately, the form *ceipatus* can be explained more easily as a case of *lex mamilla*, with lightening of the root syllable (*cīpp*-) in the derivational process with heavy and stressed syllable -ā-, according to the pattern, for instance, of *currus: curūlis*.

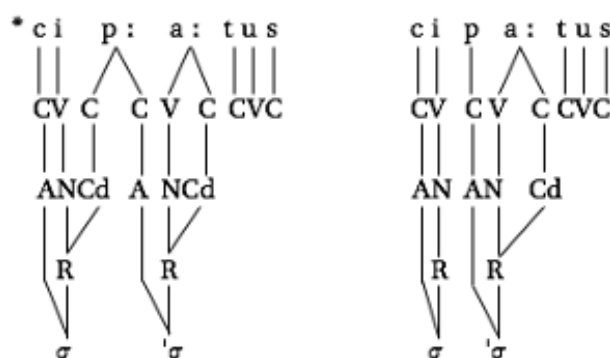


FIGURE 3.19. CV-tier representing the degemination of the mamilla-type: **cippatus* > *cipatus*

3.4.5 Summing up

In this section we have addressed some issues concerning the *littera*-rule. On the one hand, we have tried to find new elements aiming at ascertaining vowel quantity in some allotropic pairs already known to tradition. The clues we have brought to light, albeit not entirely conclusive, may provide evidence of the /V:C/ ~ /VCC/ alternation concerning these lexemes. On the other hand, we have proposed a tentative analysis of a possible allotropic pair, so far unnoticed, i.e., the *gentilicia* *Lūc(e)ius* ~ *Lūcc(e)ius*. Data analysis stressed that the period between the 1st century BC and the 1st

century AD shows the highest degree of synchronic variation. In parallel, data, albeit random and fragmentary, concerning the lemmata *Iuppiter*, *cippus* and *littera*, have shown that synchronic variation can be inferred in the same period. In some cases, the variant *ŭTT* replaced the variant *ŭT* (as in the case of *cĭppus*, *Iŭppiter*, *Lŭcceius*); in other cases, the two variants present synchronic fluctuation (i.e. *lĭtera* ~ *lĭttera*), as is further evidenced by the interchangeability in poetic inscriptions attesting to the prosodic equivalence.

This picture may be further enriched by examining another onomastic type, i.e., *Rŭfus* (< **rouδʰ*-) and its derivatives. The variants of this onomastic type are shown in TABLE 3.15.

RŪFUS	Rŭfus	Rŭffus	Roffus
	2306 tokens [+ 1 st BC]	11 tokens [+ 1 st AD]	1 tokens [+ 1 st - 2 nd AD]
RŪFIUS	Rŭfius	Ruffius	/
	1147 tokens [+ 1 st BC]	34 tokens [+ 1 st - 2 nd AD]	
RŪFIANUS	Rŭfianus	Ruffianus	/
	33 tokens [+ 1 st AD]	2 tokens [unknown dating]	
RŪFINUS	Rŭfinus	Rŭffinus	Roffinus
	1834 tokens [+ 1 st BC]	19 tokens [+ 3 rd AD]	2 tokens [+ 1 st AD]

TABLE 3.22 Spelling variants of the onomastic type *Rŭfus* and its derivatives

The *cognomen* / *agnomen* *Rŭfus* is documented from the 1st century BC; during the 1st century AD also the geminated counterpart is documented. The brevity of -*u*- is evidenced by the spelling ROFFVS (*CIL* 7, 1336,933b). Also the *cognomen* *Rŭfinus* shows a geminated variant, and the brevity of -*u*- is suggested by the form ROFFINVS (*CIL* 6, 357a). Conversely, the geminated forms *Ruffius* and *Ruffianus* may have been triggered by /j/.

In the following section we shall examine data concerning other processes of gemination: in intervocalic environment and before /j/ and /r/.

3.5 Phonological processes: $V\_ \{V, j, r\}$ gemination

The aim of this section is to present an outline of the phonological processes of gemination as evidenced by the examined documentary framework. We shall consider cases of gemination deviating from Classical Latin, by examining only instances of double spelling in lemmata stably attesting the singleton consonant and by excluding those lemmata in which the notation of gemination is oscillating throughout the documentary tradition of Latin. Data have been collected,

as anticipated in CHAPTER 1, by distinguishing the segment undergoing gemination, the phonotactic environment in which this phonological process occurs, and, as far as the V_V gemination is concerned, the accentual structure of the word and the quantity of the vowel preceding the consonant undergoing gemination. Data allow to stress both phenomena with Romance continuity and interrupted processes.

The collected data allow to trace the following processes of gemination: gemination before /j/, /r/ and in intervocalic context. TABLE 3.16 shows quantitative data related to the gemination in these environments, with the indication of the date from which a given process is documented. Note that the gemination before /w/, though having Romance continuity, has not been considered, because it is rarely attested (cf. [ST]ATTV[A]M in *CIL* 8, 22700, *Africa proconsularis*). Whenever quantitative data contain also an additional number in brackets with the lettering “Gk”, it refers to the attestation of Latin lemmata in Greek inscriptional or papyraceous sources. Percentages refer respectively to the representativeness of absolute data as compared to the total number of the collected forms, i.e., for instance, how the gemination of the kind V_V is frequent as compared to the overall amount of examined geminates; and how, for instance, the spelling <PP> is frequent as compared to the overall amount of collected geminates. Total numbers and statistics have been counted based on data emerging from Latin texts in Latin script.

		V_V	V_j	V_r	Total	%
plosives	PP	6 [+ 2 nd AD]	//	11 [+ 1 st AD]	17	2,3 %
	BB	20 [+ 1 st AD] (Gk 5)	65 [+ 1 st BC] (Gk 1)	5 [+ 4 th AD]	90	12,2 %
	TT	21 [+ 1 st AD]	54 [+ 1 st BC] (Gk 42)	9 [+ 1 st AD]	84	11,5 %
	DD	1 [+ 4 th AD]	3 [+ 3 rd AD] (Gk 2)	2 [+ 2 nd AD] (Gk 1)	6	1 %
	CC	21 [+ 2 nd AD]	142 [1 st BC]	7 [+ 1 st AD] (Gk 2)	170	23%
	GG	7 [+ 2 nd AD]	//	11 [+ 2 nd AD]	18	2,5 %
fricatives	FF	10 [+ 2 nd AD]	34 [+ 2 nd AD] (Gk 2)	4 [+ 6 th AD]	48	6,5 %
nasals	MM	2 [+ 4 th AD]	(Gk 2 + 2 nd AD)		2	0,5 %
	NN	//	50 [+ 3 rd AD]		50	7 %
liquids	LL	//	240 [+ 1 st AD] (Gk 44)		240	32,5 %
	RR	5 [+ 3 rd AD]	3 [+ 3 rd AD]		8	1 %
TOTAL		93	598	49	733	
%		12,5%	81%	6,5%		100%

TABLE 3..23 V_V, V_J and V_r gemination: quantitative data

We shall merely consider, for the moment, the graphemic level. In the first instance, the most frequent attestations of gemination in the examined environments are: <LL> (32,5%), <CC>/ (23%), <BB> (12,2%), <TT> (11,5%), <NN> (7%) and <FF> (6,5%). To a lesser extent, the geminated spellings <GG> (2,5%), <RR> (1%), <DD> (1%) and <MM> (0,5%) are attested.

On the other hand, the contexts most frequently showing a process of gemination are: V_j (81%), V_V (12,5%), V_r (6,5%). Such statistics are in part due to the fact the gemination before /j/ affects a higher number of segments, whereas the gemination before /r/ affects only plosives and fricatives.

This preliminary picture shows an interesting element if compared to the data presented by Giannini & Marotta (1989). If, in fact, consistently with the results of the two scholars, the present data show a clear prevalence of the gemination of /l/, on the other hand a greater number of attestations of geminated voiced stops, which are instead scarcely represented in the collection by Giannini & Marotta, emerges. Obviously, this difference is firstly due to the fact that the criteria adopted for our data collection are different from those followed by Giannini & Marotta (1989). The work of the two scholars, in fact, considers all instances of geminated consonants in the contexts V_V and V_j as evidenced by lexical items found in *ThLL* and Forcellini's *Totius Latinitatis Lexicon*. Conversely, the present study aims to consider phonological processes involving the lengthening of a consonant which is usually singleton in lexical repertoires (i.e. Classical Latin). Moreover, the present preliminary data show the count of total tokens. On the representativeness of geminated voiced stops we shall return in the Appendix (§ 3.6).

The data relevant to the present analysis will be discussed by distinguishing the phonotactic contexts in which the gemination occurs. We shall firstly dwell on the gemination before /j/ (§ 3.5.1), then on the gemination before /r/ (§3.5.2) and finally on “spontaneous” intervocalic gemination in (§ 3.5.3). This outline will have, of necessity, a merely listing character.

3.5.1 V_j gemination

This type of gemination, as already stressed, is the most attested one among non-literary sources, and is crosslinguistic, as is evidenced, for instance, by parallel processes among the Sabellian languages (cf. above), Ancient Greek (cf. Sihler 1995, p. 223-224) and the Germanic languages (cf. Ringe 2017, pp. 130-131).

Inherited PIE -C_jV- clusters had undergone an innovation in Latin, with the vocalization of the glide, i.e., *socius* < **sok^wjos*, *alius* < **aljōs* (cf. Kent 1932, p. 108; Elcock 1960, p. 37; Allen 1965, p. 51; Leumann 1977, p. 125). Classical Latin antevocalic /i/ and /ē/ had undergone a process of gliding in substandard varieties and, optionally, in poetry, as early as the 1st century BC, as is suggested by the use of *I longa* in inscriptions of the Late Republican age (e.g. OCTAVIO, *CIL* 11, 1138; 50-1 BC), by some poetic verses, and by the gemination triggered by /j/. The gemination of -C_jV- sequences entails the heterosyllabicity of this cluster, as is sometimes evidenced by poetry, cf. e.g. [ab.je.te] in *Aen.* 2.16, [par.je.ti.bus] in *Aen.* 5.589 (cf. Loporcaro 2011b, p. 101). The gemination can be explained under the Contact Law hypothesis, discussed by Vennemann (1988, p. 46) with regards to gemination in Italian consonant clusters. The Contact Law states that a syllable contact A^{\$}B is the most preferred the less the consonantal strength of A and the greater the consonantal strength of B (cf. also Murray and Vennemann 1983). Since /j/, which is the head/onset of the following syllable, is less strong than the coda of the preceding syllable, gemination would represent a means to create a stronger syllable head, i.e. C^{\$}j > C^{\$}Cj.

As is known, the Romance reflexes of such clusters generally imply either a process of coalescence or a process of gemination with, potentially, further affrication / assibilation. All these phenomena are generally referred to as “jod-palatalization” (cf. Castellani, 1965 p. 121 ff; Agostiniani 1998; Loporcaro 2011b; Repetti 2016). A continuity between the Oscan gemination and palatalization and the Latin > Proto-Romance ones has long been hypothesized (cf. Pisani 1954). However, according to an interpretative line already highlighted elsewhere, it should be stressed that this is a crosslinguistic phenomenon, and it is more economical to hypothesize a common tendency shared by Oscan and Latin sociolects or *Allegroformen*, which may have had a tendency to the consonantization of antevocalic /i/, rather than a direct influence of the substratum in traditional terms: the gemination and palatalization of -C_jV- sequences are Pan-Romance phenomena, and it is unlikely that Latin spread out in all the provinces of the Empire with an “Oscizing” pronunciation.

TABLE 3.17 displays the data related to the attestations of geminated spellings before /j/. In addition to absolute data, previously presented, TABLE 3.17 reports also the relative percentages of the frequency of each geminated spelling as compared to the total number of geminated spellings before /j/, the number of types attesting to a given spelling and the number of Latin forms attested in Greek sources. Both the date from which the process is documented and the date from which it is no longer documented are reported.

V_j	LL	CC	BB	TT	NN	FF	DD	RR	MM
Tokens	240	142	65	54	50	34	3	3	
%	40%	24%	11%	9%	8%	5,5%	0,5%	0,5%	
Types	10	5	6	6	2	1	1	1	1
Gk	44	/	1	42	1	/	2	/	2
Date	1 st -3 rd AD	BC 1 st -4 th AD	BC 1 st -6 th AD	BC 1 st / 1 st AD-4 th AD	2 nd -4 th AD	2 nd -3 rd AD	1 st -4 th AD	4 th -6 th AD	3 rd AD

TABLE 3..24 *V_j* gemination: quantitative data

As can be seen, even though the gemination before /j/ is quantitatively well-documented, it affects a limited number of types, mostly concerning onomastic material. The reasons for the particular occurrence of this kind of gemination in proper names is to be ascribed to two factors: on the one hand, the permeability of proper names to phonetic spellings; on the other the morphemes involved in onomastic formations, especially the *-ius* > *-jus* and *-ianus* > *-janus* suffixes. Note, moreover, the correlation between the number of types and tokens and the chronological range of the attestations.

Data show remarkable elements when compared to the Latin-Romance continuum. In fact, it is possible both to trace phenomena presenting Romance continuity, and aborted phenomena which must have marginally characterized Substandard Latin. We shall present a summary picture of these phenomena, and then concentrate on some specific problems, mainly concerning the geminations of the kind <DD> and <BB>.

- Consistently with the Romance developments, gemination of the cluster /sj/ is not documented. In fact, the jod-palatalization of -sĭ- does not imply, not even in Tuscan outcomes, a process of gemination (cf. BASĬUM > ['ba:ʒo]), whereas in other Romance varieties (e.g., Ibero- and Gallo-Romance) this cluster is affected by metathesis (cf. MA(N)SĬONEM > OFr. *maison*; cf. Rohlfs 1966, pp. 403-408; Repetti 2016, pp. 660).

- No significant examples of the gemination of primary /pj/ are found. Actually, onomastic types with geminated /pp/ before /j/ are documented, see e.g. *Appius*, *Seppius*, *Oppius*, but geminates in these bases are stably attested since the first instances of *geminatio consonantium*. For this reason, they have not been taken into consideration. On the other hand, there are instances, already known to tradition, of the gemination of /p/ before /l/, limited to the lexeme *dupl-* (e.g. DVPPPLICATIS, *ICNNapotelata* 36, from Neapolis; DVPPLEX, *CIL* 11, 4979, from Spoleum; DVPPPLICIAR(IVS), *CIL* 10 1873, from Puteoli; DVPPPLARIAE and DVPPPLUM in Ravenna Papyri, *P. Ital.* 2.30, 2.33, 2.37).
- The case of the gemination of /r/ before /j/ is remarkable. It is represented by a unique type, namely *Victor-*, in three texts of the Imperial era: VICTORRIA (*CIL* 8 25237, 300-799 AD), VICTORRIAM (*T. Alb.* 29, 484-496 AD), and VICTORRIA in a seal of uncertain date and provenance (*GUM-260-284*). Even if the data do not allow us to reach a definitive picture, it is plausible that the gemination of /rj/ was diatopically connoted in the African Latin of the Vandal Era. Interestingly, this type of gemination does not show Romance continuity, since in most of the Romance varieties this cluster underwent metathesis, whereas in the Italo-Romance varieties either the rhotic element or the glide were lost (Maiden 1995, p. 55ff; Repetti 2016, p. 661).
- In regards to gemination of the nasals, we may notice a not negligible occurrence of gemination of /n/ before /j/, although limited to only two types. In the case of bilabial, however, the gemination is not attested in the Latin documentation, but is documented, albeit limited to a single type, in two Greek papyri. The gemination of /nj/ is documented only for the onomastic type *Licin-*. The forms with the geminated spelling are particularly attested in the eastern provinces. Greek documentation shows the form Αντώννιου (*bgu* 1 336). The gemination of /mj/ is attested in two Egyptian papyri (*bgu* 15.248 and *bgu* 1 275, dated respectively to 205 and 215 AD), showing the forms Σεπτιμμίου and Σεπτιμμίω. This gemination foreshadows the Tuscan outcome (e.g. VINDEMIAM > *vendemmia* 'grape harvest', SIMIAM > *scimmia* 'monkey', cf. Rohlfs 1966, p. 280).
- The gemination of /f/ is documented only for the personal names *Ruffius* and *Ruffianus* we have previously referred to (§ 3.4.5).
- The gemination of *l exilis* before /j/ is represented by only 10 types, most of which *gentilicia* ending in *-ilius*. The most represented name (98%) is *Aurelius*, due to the high frequency of this name in the inscriptions of the Imperial age, when it was assumed to indicate the status of Roman citizen (cf. Salway 1994).

- The gemination of the kind <DD>, although poorly represented, deserves particular attention. It is attested for the *nomen gentile* *Claudius* and the *cognomen* *Claudianus* in three Latin inscriptions and in two Greek texts, from the 1st century AD to the 4th century AD.

Form	Edition	Date	Provenance
CLAVDDIANO	<i>AE</i> 1957, 21	198 AD	Pannonia Inferior
CLAVDDIVS	<i>CIL</i> 17-1, 290	335-337 AD	Hispania citerior
CLODDI	<i>CIL</i> 6, 15746	unknown	Rome
Κλαυδδίου	<i>P.Oxy.</i> 2 285	48-49 AF	Egypt (Ossirinco)
Κλαυδδίου	<i>IO</i> 447	100-199 AD	Olympia

TABLE 3.0.25 <DD> gemination before /j/

These data, albeit scarce, may be relevant to the issue of the treatment of /dj/ in Substandard Latin, on which there is an extensive literature. It is known that the Latin cluster /dj/ shows various spellings, whose phonetic referent is much debated. The spelling <DI> moreover, is often employed in reverse writings for original /j(j)/. We report some instances of each spelling (cf. Leumann 1977, p. 130; Bonioli 1962, p. 44; Väänänen 1981, p. 82; Lloyd 1987 p. 132, Herman 2000 pp. 42-45; Adams 2013, pp. 118ff).

- (1) /dj/ = <i> (e.g., AIVTAVERET, *CEL* 142)
- (2) /j/ = <di> (e.g., MADIAS, *ILCV* 4729)
- (3) /j/ = <gi> (e.g., CONGIVGI, *CIL* 11, 1016)
- (4) /dj/ = <z> (e.g., OZE, *CIL* 8, 8424)
- (5) /dj/ = <s> (e.g., CVNCORSIE, *ILCV* 3738a)
- (6) /j/ = <z> (e.g., ZANVARIO, *CIL* 10, 2466)

The spellings (1-3) would hint at a merger of /dj/, /j(j)/ and /gj/ into /j(j)/, similarly to what had already happened in the reconstructed phase, cf. *Iuppiter* < **D̥ieupater*; *maior* < **magios*; CL *hodie* is a new formation from *dies*, because the expected outcome would be *(h)*oiie*, cf. Faliscan FOIED.

The spellings (4-6) would hint at a process of affrication / assibilation of /j(j)/ (original and resulting from /dj/ and /gj/). According to Castellani's (1965) reconstruction, followed by Loporcaro (2011b) and Repetti (2016), the relation between the two types of misspelling (i.e. 1-3 and 4-6) is diachronic. First, starting from the 1st century AD, there would be the merger between /dj/, /gj/ and /j(j)/ (1-3). The outcome /j(j)/, attested in some Romance varieties, such as Sicilian

(cf. *HODIE* > [ˈɔji]), may have an uninterrupted continuation from Latin or may have evolved from an intermediate affricate (cf. Loporcaro 2011b, pp. 144ff; Repetti 2016, p. 660).

Subsequently, /j(j)/ would have undergone affrication, starting from the 2nd century AD, by following two different evolutionary paths: /j/ > /dz/, represented by the spelling <z> (4, 6), and /j/ > /dʒ/, represented by the spelling <gi> (3).

Given the above, the spelling <DD> before /j/ deserves our attention, and the following hypothesis can be proposed: in a hypercorrect variety, the etymological spelling was preserved as a reaction against the phonological processes affecting the cluster /dj/. As a consequence, the restored /dj/ had undergone a process of gemination thus paralleling the other -Cj- sequences. At this point, it is legitimate to pose the problem of the relation that the possible outcome /ddj/ may have with the Tuscan outcome /ddz/, which, alongside the regular /ddʒ/, is recorded in pairs such as *mozzo* ~ *moggio*, *razzo* ~ *raggio* and the outcomes *-ezzare* ~ *-eggiare* < -IDIARE. The evidence of the gemination /ddj/ would support a hypothesis by Rohlfs (1966, § 276 p. 392): «le forme toscane *mezzo* e *rozzo* (e forse anche *razzo* e *mozzo*), risalgono a una pronuncia **meddiu*, **ruddiu*, ecc., con la quale il ceto colto avrebbe tentato di opporsi alla pronuncia volgare *meju* ovvero *megghiu*».

- As known, the clusters /tj/ and /kj/ underwent affrication and assibilation, with outcomes oscillating between /tʃ/ and /tʂ/ and subsequent evolution in fricative in some varieties. The antiquity of the process is confirmed by the fact that it affects all the Romance domain. As can be seen, the gemination of these clusters is more ancient as compared to the others (except for <BB>). The affrication is documented from the 2nd century AD, as is evidenced by misspellings with <Z>, <SI> and <TS>¹⁸⁵. The development of /tj/ into affricate is standard during the 5th century AD, when the spelling pronunciation of *etiam*, *Titius* is proscribed by grammarians, cf. Servius (Keil v 445), Pompeius (Keil v 286), Papirianus (apud Cassiodorum, Keil viii 216). The merger between /tj/ and /kj/ is documented by misspellings such as BRATIVS (*ILCV* 2388b).

According to the picture drawn by Rohlfs and Lausberg, the outcomes /ttz/ and /ttʃ/ found in Central and Southern Italy presuppose an initial stage of gemination, which is documented, for both clusters, from the 1st century BC. As for the gemination of /kj/, it is attested from the 1st

¹⁸⁵ DOMIZI (*CIL* 15, 1776, Bormazo), TIZIVS (*AE* 2003, 1505, Dacia, 151-200 AD), TIZIO (*CIL* 03, 2775, Dalmatia, 71-150 AD), TIZI (*CIL* 3, 2788, Dalmatia, 1-150 AD), TIZI (GraffNeuss 235, Germania inferior), AMPIZATRU, VINCENTŹO (Aud. 253, Carthago, 2nd century AD), NOTTITZIA (Vandal 12, 451-550 AD, Africa proconsularis), TERENSUS (*CIL* 8, 9927, Mauretania Caes., 1st-3rd century AD), INNOCENSA (*CIL* 8, 21751, Mauretania Caes., 354 AD), TERSIA (*CIL* 12, 05250, Gallia Narbonensis), MONSIUS (*T. Alb.* 7, 493, Algeria), CRESCENTSIANUS (*CIL*, 14 246, Ostia Antica); cf. Svennung (1936, p. 9), Sturtevant (1940, p. 172), Mras (1948, p. 92-5), Battisti (1949, p. 147), Bonioli (1962, pp. 116, 119), Kiss (1971, pp. 55-56), Väänänen (1981a, pp. 53-4), Biville (1990, pp. 277-8), Adams (2013, pp. xx).

century BC to the 4th century AD, and affects five different types. The most ancient attestation is commonly recognized as FACCIO in the *defixio* from Carmona (*CIL* 2 4 1249 50-1 BC; cf. Agostiniani 1998). To this we may add the MVCCIVS as evidenced by the previously mentioned graffito from Rome (*MEP*-2018-62, 2nd-1st century AD; cf. § 3.3), and SOCCIORVM from Pompeii (*CIL* 4, 5659 = D 8600a, 79 AD at the latest) and Rome (*CIL* 6, 6874; 1-50 AD).

As for the treatment of /tj/, the gemination is documented from the end of the 1st century BC (Δομῑττίου ο. berenike 3 408). The phenomenon is limited to the bases *Domittius*, *Domittianus*, *Tittius*, *Tittianus*, *Galittianus*, *Dalmattius*, *petittio* and *ettiam*. Interestingly, the forms *Domittius* / *Domittianus* turn out to be particularly documented in Greek inscriptions and papyri; likewise, the attestations of *Domittius* in Latin texts appear notably in papyri from Egypt and Syria (e.g. P. Dura 101, 102; *CEL* I 150).

- Let us now examine the gemination BB, implying a development from /wj/ (original or from < /bj/), attested from the 1st century BC. In this case, the documentary framework is such to suggest clues of regional diversification. This phenomenon affects six different lexemes with underlying /wj/ or /bj/, e.g. *Gavius* / *Naevius* on the one hand and *Vibius* / *Rubius* on the other. The documentation is peculiarly found in the area of *Apulia et Calabria* (25 tokens out of 65), and, in general, in the territory of Central and Southern Italy, as the following data evidence (cf. TABLE 3.19):

Form	Lemma	Edition	Date	Provenance
VIBBI	<i>Vibius</i>	<i>CIL</i> 8, 24865	50-44 BC	<i>Africa proconsularis</i> (Carthago)
VIBBIAE	<i>Vibius</i>	<i>CIL</i> 9, 2911	1-100 AD	<i>Samnium</i> (Histonium)
VIBBI	<i>Vibius</i>	<i>CIL</i> 10, 4406	30 a.C. – 30 AD	<i>Latium et Campania</i> (Casilinum)
VIBBI	<i>Vibius</i>	<i>CIL</i> 8, 24876	27 a.C. – 14 AD	<i>Africa proconsularis</i> (Carthago)
VIBBIAE	<i>Vibius</i>	<i>CIL</i> 9, 1403	50 a.C. – 30 AD	<i>Apulia et Calabria</i> (Trevico)
GABBIA	<i>Gavius</i>	<i>AE</i> 1991, 514a	41-54 AD	<i>Apulia et Calabria</i> (Larinum)
GABBIO	<i>Gavius</i>	<i>AE</i> 1966, 75	51-100 AD	<i>Apulia et Calabria</i> (Larinum)
R(V)BBIVS	<i>Rubius</i>	<i>CIL</i> 6, 25498	1-100 AD	<i>Roma</i>
RVBBIVS	<i>Rubius</i>	<i>CIL</i> 6, 25498	1-100 AD	<i>Roma</i>
VIBBIVS	<i>Vibius</i>	<i>CIL</i> 9, 2026	1-70 AD	<i>Apulia et Calabria</i> (Beneventum)
BIBBIVS	<i>Vibius</i>	<i>CIL</i> 6, 13580	71-150 AD	<i>Roma</i>
RVBBIA	<i>Rubius</i>	<i>CIL</i> 6, 25500	51-200 AD	<i>Roma</i>
RVBBIVS	<i>Rubius</i>	<i>CIL</i> 6, 25500	51-200 AD	<i>Roma</i>
VIBBI	<i>Vibius</i>	<i>CIL</i> 9, 737	1-200 AD	<i>Samnium</i> (Sicalenum)
VIBBIO	<i>Vibius</i>	<i>CIL</i> 9, 1705	71-130 AD	<i>Apulia et Calabria</i> (Beneventum)
VIBBIO	<i>Vibius</i>	<i>CIL</i> 9, 737	1-200 AD	<i>Samnium</i> (Sicalenum)

VIBBIS	<i>Vibius</i>	<i>CIL</i> 9, 1705	71 -130 AD	<i>Apulia et Calabria (Beneventum)</i>
Νεββιανός	<i>Nevianus</i>	p.mich 4.1 224	172-173 AD	<i>Egypt (Karanis)</i>
BIBBIA	<i>Vibius</i>	<i>CIL</i> 2004, 246	101 -150 AD	<i>Roma</i>
TREBBIA	<i>Trebius</i>	<i>CIL</i> 5, 8102	124-125 AD	<i>Alpes Maritimae (Tropaea Augusti)</i>
VIBBIO	<i>Vibius</i>	<i>CIL</i> 9, 1657	101-200 AD	<i>Apulia et Calabria (Beneventum)</i>
VIBBIO	<i>Vibius</i>	<i>CIL</i> 9, 1455	101 AD	<i>Apulia et Calabria (Lig. Baebiani)</i>
VIBBIVS	<i>Vibius</i>	<i>CIL</i> 10, 3104	151-250 AD	<i>Latium et Campania (Puteoli)</i>
FABBI(ANVS)	<i>Fabianus</i>	<i>CIL</i> 2008, 1686	Imperial age	<i>Africa proconsularis (El-Ghrouss)</i>
TREBBIVS	<i>Trebius</i>	<i>CIL</i> 2013, 1976	201-300 AD	<i>Africa proconsularis (Amaedara)</i>
VIBBIVS	<i>Vibius</i>	<i>CIL</i> 6, 1057	205-210 AD	<i>Roma</i>
VIBBIVS	<i>Vibius</i>	<i>CIL</i> 6, 1057	205-210 AD	<i>Roma</i>
VIBBIVS	<i>Vibius</i>	<i>CIL</i> 6, 1057	205-210 AD	<i>Roma</i>
FABBIAE	<i>Fabius</i>	<i>IdAltava</i> 00118	406 AD	<i>Mauretania Caes (Altava)</i>
FABBI(VS)	<i>Fabius</i>	<i>CIL</i> 3, 14305	501-600 AD	<i>Dalmatia (Salona)</i>
FABBIVS	<i>Fabius</i>	<i>CIL</i> 3, 14305	501-600 AD	<i>Dalmazia</i>
FABBIVS	<i>Fabianus</i>	<i>CIL</i> 8, 2403		<i>Numidia (Thamugadi)</i>
BIBBIO	<i>Vibius</i>	<i>CIL</i> 3, 8952		<i>Dalmatia (Salona)</i>
BIBBIVS	<i>Vibius</i>	<i>CIL</i> 3, 8952		<i>Dalmatia (Salona)</i>
GABBI	<i>Gavius</i>	<i>CIL</i> 1994, 491		<i>Apulia et Calabria (Larinum)</i>
GABBI	<i>Gavius</i>	<i>CIL</i> 9, 753		<i>Apulia et Calabria (Larinum)</i>
GABBIAE	<i>Gavius</i>	<i>CIL</i> 9, 6245		<i>Apulia et Calabria (Larinum)</i>
GABBIAE	<i>Gavius</i>	<i>CIL</i> 9, 6245		<i>Apulia et Calabria (Larinum)</i>
GABBIO	<i>Gavius</i>	<i>CIL</i> 9, 6245		<i>Apulia et Calabria (Larinum)</i>
GABBIO	<i>Gavius</i>	<i>CIL</i> 9, 6245		<i>Apulia et Calabria (Larinum)</i>
RVBBI	<i>Rubius</i>	<i>AE</i> 1993, 1749b		<i>Africa proconsularis (Carthago)</i>
RVBBI	<i>Rubius</i>	<i>EpOst</i> 860		<i>Latium et Campania (Ostia Antica)</i>
RVBBI	<i>Rubius</i>	<i>CIL</i> 6, 25497		<i>Roma (Roma)</i>
RVBBIA	<i>Rubius</i>	<i>EpOst</i> 860		<i>Latium et Campania (Ostia Antica)</i>
RVBBIA	<i>Rubius</i>	<i>CIL</i> 6, 22207		<i>Roma</i>
RVBBIA	<i>Rubius</i>	<i>CIL</i> 6, 25497		<i>Roma</i>
RVBBIA	<i>Rubius</i>	<i>IG-10-2-1</i> , 380		<i>Macedonia (Thessalonica)</i>
RVBBIO	<i>Rubius</i>	<i>CIL</i> 10, 5107		<i>Latium et Campania (Atina)</i>
RVBBIO	<i>Rubius</i>	<i>CIL</i> 6, 25499		<i>Roma</i>
TREBBIVM	<i>Trebius</i>	<i>CIL</i> 4, 338		<i>Latium et Campania (Pompei)</i>
VIBBI	<i>Vibius</i>	<i>CIL</i> 15, 8547		<i>Provincia incerta</i>
VIBBI	<i>Vibius</i>	<i>CIL</i> 1997, 351		<i>Apulia et Calabria (Larinum)</i>
VIBBI	<i>Vibius</i>	<i>CIL</i> 10, 8059,172		<i>Latium et Campania (Neapolis)</i>
VIBBI	<i>Vibius</i>	<i>CIL</i> 10, 8059,434		<i>Latium et Campania (Neapolis)</i>
VIBBIA	<i>Vibius</i>	<i>CIL</i> 9, 2030		<i>Apulia et Calabria (Benenventum)</i>

VIBBIA	<i>Vibius</i>	<i>CIL</i> 9, 2039	<i>Apulia et Calabria (Beneventum)</i>
VIBBIA	<i>Vibius</i>	<i>CIL</i> 9, 6294	<i>Apulia et Calabria (Caudium)</i>
VIBBIA	<i>Vibius</i>	<i>CIL</i> 10, 2911	<i>Latium et Campania (Puteoli)</i>
VIBBIA	<i>Vibius</i>	<i>AE</i> 1982, 597	<i>Hispania citerior (Segobriga)</i>
VIBBIAE	<i>Vibius</i>	<i>CIL</i> 9, 1960	<i>Apulia et Calabria (Beneventum)</i>
VIBBIAE	<i>Vibius</i>	<i>CIL</i> 9, 6290	<i>Apulia et Calabria (Beneventum)</i>
VIBBIAE	<i>Vibius</i>	<i>AE</i> 1990, 883	<i>Macedonia (Stobi)</i>
VIBBINA	<i>Vibius</i>	<i>CIL</i> 9, 966	<i>Apulia et Calabria (Vibinum)</i>
VIBBIO	<i>Vibius</i>	<i>CIL</i> 9, 2027	<i>Apulia et Calabria (Beneventum)</i>
VIBBIO	<i>Vibius</i>	<i>CIL</i> 9, 6294	<i>Apulia et Calabria (Caudium)</i>
VIBBIVS	<i>Vibius</i>	<i>CIL</i> 9, 1838	<i>Apulia et Calabria (Beneventum)</i>
V]IBBIVS	<i>Vibius</i>	<i>AE</i> 1997, 351	<i>Apulia et Calabria (Larinum)</i>

TABLE 3.26 <BB> gemination before /j/

Given the particular occurrence of this type of gemination in the areas of Central and Southern Italy, and the lack of evidence in the Western areas, it is legitimate to hypothesize a regional differentiation in the treatment of /wj/, undergoing fortition in the variety of Latin widespread in the Peninsula, consistently with the outcome /bbj/ which is preserved in Tuscan (e.g. HABEAM > It. *abbia*; RABIAM > It. *rabbia*; CAVEA > It. *gabbia*), with further developments in Southern dialects (CAVEAM > Sic. ca[ḍ̣ːʒ]a; RABIAM > Calabr. ra[ḍ̣ːʒ]a).

3.5.2 V_r gemination

Let us now examine consonant gemination before /r/, which, as previously mentioned, affects plosives and the fricative /f/. In this case, the collected data allow both to trace phenomena with Romance continuity and aborted phenomena. The evidence that the gemination before /r/ is attested, albeit with different proportions, for the entire series of stops and for /f/, is a further piece of evidence of the possibility of heterosyllabification of Cr clusters in Substandard Latin. TABLE 3.20 shows quantitative data according to the criteria adopted for TABLE 3.17.

V_r	PP	GG	TT	CC	BB	FF	DD
Tokens	11	11	9	7	5	4	2
%	22,5%	22,5%	18%	14,5%	10%	8%	4%
Types	1	4	4	4	3	1	2
Gk	/	/	/	2	/	/	1
Date	1st-3rd	2nd-6th AD	1st	2 nd	4 th -6 th	2 nd	2 nd -3 rd AD

TABLE 3.27 V_r gemination: general quantitative data

As can be seen, the gemination turns out to be particularly attested in the documentation of the first Imperial age as for /p/, /k/, /d/, whereas it is documented for a later period as for /g/, /t/, /b/ and /f/. As is known, this type of gemination does not show Romance continuity, except for the cluster /br/, undergoing gemination in the Italian outcomes. Generally, *muta cum liquida* remain intact or C₁ undergoes lenition. It is conceivable that, for a given period, this type of gemination have characterized some varieties of Substandard Latin. It is worth noticing that also Koine Greek as evidenced by papyri and inscriptions shows examples of this kind gemination (cf. Thraette 1980, 527ff). Similar to Latin, in fact, also Greek shows a tendency to the heterosyllabification of *muta cum liquida* clusters. This is evidenced by the possibility, both in Greek and Latin poetry, that a short vowel occupies the arsis position (cf. Devine & Stephens 1994, pp. 31-32). In some cases, however, it is possible to note the presence of forms showing a submerged continuity, hidden by the restoration of Latinizing forms. Given the random nature of the attestations of this kind of gemination, it is worth presenting these forms in detail.

- As for /b/, which is certainly continued in Tuscan (cf. e.g. *fabbro, labbro, fabbrica, ebbro, libbra*, cf. Rhols 1966 § 261, pp. 371ff), it is documented in the area of the Italian Peninsula and in Africa, in a period prior to 4th century AD, cf. . TABLE 3.21

FORM	EDITION	DATE	PROVENANCE
FEBB(RVARIAS)	<i>CIL</i> 6, 9811	301-500 AD	Roma
FEBBRVARIAS	<i>ICUR</i> 9, 24571	301-400 AD	Roma
FEBBRVARI	<i>CIL</i> 9, 410	519 AD	Apulia et Calabria (Canusium)
OBREDIACOS	<i>t.alb.</i> 2	494 AD	Mauretania Caes (Theveste)
OBBRIPILATIONIS	<i>CIL</i> 6, 33899	Unknown datin	Roma

TABLE 3.28 /br/ gemination

There are also case of gemination of /bl/ at morphemic boundary (*ob+l*), cf. *ob-ligo*: OBBLIGATE in *DefTab* 268 (3rd century AD, from Sousse), cfr. It. *obligare*; *ob+latus*, cf. OBBLATA (*CIL* 13, 1183, Late imperial period, from *Aquitania*), OBBLATIONE (*CIL* 11, 5750, 260 AD, Sassoferrato), OBBLATUM (*SupIt*-9-A, 34, 325 AD, *Amiternum*), cfr. It. *obblazione*.

- The gemination of /pr/ is documented limited to the type *suprem-*, whose attestations are scattered in all the Imperial domain, cf. SVPPREMOS in *CIL* 13, 2314 (Lugdunum), SVPPREMIS in *AE* 1985, 355 (Ricina, 3rd century AD), SVPPREMA in *CIL* 6, 30156 (Roma). The form *suppremo* is common in Old Italian (cf. e.g., Boccaccio III-4 and *GDLI* s.v.).

- The gemination of /fr/, whose occurrence in Latin phonotaxis is limited, is attested with continuity, as is evidenced by the forms AFFO(RVM) (*CIL* 13, 8303; Colonia, 1st century AD); AFFRICE (*AE* 1937, 148; Numidia, 585 AD), AFFRICANVS (*ILAlg*-2-1, 3570; Numidia, unknown dating). The gemination in this lexeme was proper of Literary Italian until 1880, when the Latin form was reintroduced (cf. Bianchi 1894). It is preserved, without any diastratic or diaphasic distinction, in Tuscan (cf. *GDLI*, s.v.; *LEI* s.v.).
- The geminating of /kr/ is attested from the 1st century AD and affects four types: LVCC[R]ETI (*CSIR-Oe*-1-4, 568; 63-65 AD), SACCR(VM) (*CAG*-45, p. 46 = *AE* 1980, 643; Lugudunensis), SACCRI(S) (*RAA* p. 182; 50-299 AD; Numidia); SACCRI(S) (*CIL* 8, 17701), SACCRA (*CIL* 13, 2611; Lugudunensis), LUCCRET(VS) (*CIL* 3, 12014, 335), MICCRA (*CIL* 8, 25774), and, among Greek texts, Μᾶκκρῖνος (*I. Pal. Tertia* Ia 1; Zoora, 309 AD) and Μᾶκκρεῖνον (p. oslo 2 25; Karanis, 217 AD). This outcome is not found in the Romance domain, with the stop undergoing lenition or being maintained in Southern Italy (cf. Rohlfs § 260, pp. 369ff).
- The gemination of /tr/ affects 4 different types: PATTRIS in the *Alberti Tablets* (t.alb. 4, 10, 28); FRATTRE (*CIL* 8, 111); FRATTRI (*AE* 1991, 294; Rome, 2nd-3rd century AD), LATTRONES (*CIL* 8, 2728), MATTRONA (*CIL* 8, 7251; BC 30 – 117 AD); PETTRONI, PETTRONIVS (*CIL* 6, 1056, Rome, 205 AD; *CIL* 13, 11989, 2nd-3rd century AD, Germania Inferior). This phenomenon seems to be particularly widespread in Africa and at Rome.
- As for the gemination of /gr/, we have the bulk of the attestations in the documentation from Africa of the Vandal era. The geminated outcome is not continued among the Romance languages (cf. Lausberg, p. 318 § 421; Rohlfs, § 261, p. 372). Cf. TABLE 3.22:

FORM	EDITION	DATE	PROVENANCE
AGGRARIA	<i>Vandal</i> 10	451 a 550	<i>Africa proconsularis (El-Biod, Hr.)</i>
AGGRASIA	<i>AE</i> 2001, 281	171-200 AD	<i>Roma</i>
AGGRIPPINA	<i>ILTun</i> 201, 8	unknown dating	<i>Africa proconsularis (Hadrumetum)</i>
AGGRIPPINA	<i>CIL</i> 8, 3757	50-299 AD	<i>Numidia (Lambaesis)</i>
AGGRIPPINVS	<i>CIL</i> 11, 7852	180-250 AD	<i>Umbria / Regio VI (Spoletum)</i>
AGGRO	<i>CIL</i> 3, 2448	131-200 AD	<i>Dalmatia (Salona)</i>
AGGROCEVS	<i>AE</i> 1994, 599	50-299 AD	<i>Umbria / Regio VI (Rofelle)</i>
AGGRARIE	<i>AE</i> 2016, 1957	471-550 AD	<i>Africa proconsularis (El-Abiod)</i>
AGGRARIA	<i>AE</i> 2016, 1957	471-550 AD	<i>Africa proconsularis (El-Abiod)</i>
EGGRILIVS	<i>CIL</i> 8, 16781	50-299 AD	<i>Africa proconsularis (Bordj M'Rou)</i>
PEREGGRE	<i>CIL</i> 12, 86	171-230 AD	<i>Alpes Cottiae (Ebrodunum)</i>

TABLE 3.29 /gr/ gemination

Given the picture drawn so far, it is not possible to reach conclusions concerning the level of variation, and a further examination by comparing these misspellings with other deviations from Classical Latin is needed. However, it would seem plausible, in the first instance, to detect a higher frequency of this type of gemination in the areas of the Italian Peninsula and Africa, with the caveat, already stressed here and there, that this impression may depend on epigraphic density.

The presence, albeit marginal, of the gemination of -Cr- sequences in Substandard Latin, only marginally continued among the Romance languages, may be explained under the Contact Law hypothesis we have previously referred to. As a matter of fact, a -Cr- cluster would represent a “bad” syllable contact, and gemination would intervene to restore syllabic margins by creating a stronger syllable head (or syllable onset), i.e. C^sr > C^sCr (cf. Loporcaro 2011b, pp. 99-100). Traces of the possibility of heterosyllabification of *muta cum liquida* clusters (to which we may add also the /f.r/ sequence) may be evidenced by a series of phenomena documented in Latin, some of which addressed by Loporcaro (2005, 2011b), which are listed below:

- The possibility of treating the Cr sequence as a heterosyllabic cluster is provided by poetry: in classical verses the possibility of heterosyllabification is optional and marginal (cf. e.g. *quae p̄.tri.bus p̄t.res tradunt a stirpe profecta*, *De rer. nat.* 4, 1222), whereas it progressively emerges over the centuries, as is demonstrated by the studies by Timpanaro (1965, pp. 1092-93) and Viparelli (1990, pp. 26-36).
- The strong tendency in Substandard Latin to insertion within the *muta cum liquida* cluster. Epenthesis is widespread, for example, in papyri and ostraca from Egypt, cf. e.g. *Demeteru, frateri, magisteri, scribe, esopera, Cerescenti* (*O. Did.* 417) and *esopera* (*CEL* 147, l. 22) and *supera* (*CEL* 157, l. 8) (cf. CHAPTER 2).
- The stress shift as evidenced by grammarians and some Romance outcomes: Isidore of Seville (*Etym.* 31) prescribes the paroxytonix pronunciation in *tenēbra* and even condemns as *barbarismus* the (classical) *tēnebra*, thus implying the shift *te.nē.brae* > *te.nēb.rae*. This stress shift would be also evidenced by some Romance outcomes, e.g. OIt. *cadrèga* (< *CA.THĒD.RA), It. *int(i)ero* (< *IN.TĒG.RU), It. *puledro* (< *PULLĬTRU).
- The outcomes of stressed vowels in the dialects from Abruzzo to Puglia: whenever a change affected vowels in stressed open syllables, it did not apply before *muta cum liquida* clusters, e.g. [ˈrotə] ‘wheel’

as opposed to [ˈskɔprə] ‘uncover.1SG’, with the same treatment of -ō- as in closed syllables, cf. [ˈkɔrpə] ‘body’; cf. Loporcaro 2005; Loporcaro 2011b, p. 104).

3.5.3 V_V gemination

Finally, let us examine the processes related to intervocalic “spontaneous” gemination. The forms below described have not been recorded elsewhere. A key element for ascertaining the trigger of the gemination is an examination of syllable structure and stress position. Intervocalic spontaneous gemination is attested 93 times and affects 49 different types. A first caveat concerns the possibility that these forms, being mostly instances of *testis unus*, may actually represent marginal phenomena, or even scribal errors. Thus, there is a risk of overestimating these data. The collected forms are presented in TABLE 3.23:

/t/	CL form	Relevant form
(1)	<i>Fortunatus</i>	FORTVNATT- (x 3)
(2)	<i>gratulorum</i>	GRATTVLORUM (x 1)
(3)	<i>hereditas</i>	HEREDITTAS (x 1)
(4)	<i>mutos</i>	MVTTOS (x 1)
(5)	<i>Restitutus</i>	RESTITVTTVS (x 1)
(6)	<i>salutaris</i>	SALVTTARIS (x 1)
(7)	<i>saturninus</i>	SATTVRNIN- (x 2)
(8)	<i>tritici</i>	TRITTICI (x 1)
(9)	<i>vetustas</i>	VETTVSTATE (x 3)
(10)	<i>votum</i>	VOTTO (x 1)
(11)	<i>notitia</i>	NOTTITZIA (x 2)
(12)	<i>dicitur</i>	DICCTIVR (x 1)
(13)	<i>cito</i>	CITTO (x 2)
/k/	CL Form	Relevant forms
(1)	<i>fecit / fecerunt</i>	FECCIT (x 3) / FECCERVNT (x 3)
(2)	<i>mecum</i>	MECCVM (x 1)
(3)	<i>pace</i>	PACCE (x 2)
(4)	<i>Pacuvius</i>	PACCVVIVS (x 1)
(5)	<i>Vicentia</i>	VICCENTIA (x 1)
(6)	<i>dicitur</i>	DICCTUR (x 1)
(7)	<i>docet</i>	DOCCT (x 1)
[β]	CL Form	Relevant forms

(1)	<i>legentibus</i>	LEGENTIBVS (x 1)
(2)	<i>Sabellius / Sabinis</i>	SABELLIUS / SABBINUS (x 9)
(3)	<i>habebis</i>	HABBEBS (x 4)
(4)	<i>sibi</i>	SIBBI (x 3)
(5)	<i>Sabulus</i>	SABVLVS (x 2)
(6)	<i>subscrib-</i>	SUBBISCRIBENTIBVS / SVBBISCRITVRIS (x 2)
(7)	<i>Sibilus</i>	SIBILVS (x 2)
(8)	<i>Sebaciaria</i>	SEBBACIAR[IA] (x 1)
(9)	<i>Trebonianus</i>	TREBONIANVS (x 1)
(10)	<i>Tiberius</i>	Τιβέριου (x 1)
/f/	CL Form	Relevant forms
(1)	<i>Rufus / Rufinus</i>	RVFFVS / RVFFINVS (x 10)
/g/	CL Form	Relevant forms
(1)	<i>agenti</i>	AGGENTI (x 1)
(2)	<i>cogens</i>	COGGENS (x 1)
(3)	<i>August-</i>	AVGGVST- (x 3)
(4)	<i>ego</i>	EGGO (x 1)
(5)	<i>igitur</i>	IGGITVR (x 1)
(6)	<i>sagittaria</i>	SAGITTARIA (x 1)
/p/	CL Form	Relevant forms
(1)	<i>nepos</i>	NEPPOS (x 2)
(2)	<i>opera</i>	OPPERE (x 1)
(3)	<i>Exsuperantia</i>	EXSVPPERANTIA (x 1)
/r/	CL Form	Relevant forms
(1)	<i>Caesare</i>	CAESARRE (x 1)
(2)	<i>offerentibus</i>	OFFERRENTIBVS (x 1)
(3)	<i>Aurelius</i>	Αύρηλιου (x 1)
(4)	<i>fecerunt</i>	EECERRVNT (= FECERRVNT) (x 1)
(5)	<i>Victorino</i>	VICTORRINO (x 2) (
/m/	CL Form	Relevant forms
(1)	<i>numero</i>	NVMMERO (x 2)
/d/	CL Form	Relevant forms
(1)	<i>fidelis</i>	FIDDELIS (x 1)

TABLE 3.30 V_V gemination: relevant forms

The above table arranges data as follows: relevant forms are classified depending on the segment undergoing gemination; in the column “CL form”, i.e., Classical Latin form, the underlying form is reported (note, however, that in the case of SVBBISCRIBENTIBVS / SVBBISCRITVRIS the underlying

form does not correspond to Classical Latin); the column “Relevant form” shows the geminated variants, gathered according to the type, with the indication in round brackets of how many tokens are attested. This presentation aims to stress an inherent difficulty in processing the data: as a matter of fact, we are dealing with forms mostly recorded only once. Therefore, the possibility that many of them result from episodic phenomena or even from scribal errors is not negligible. Therefore, out of prudence, we shall analyze only those forms attested more than once, with the exception of the previously mentioned *DOCET* (§ 3.4.3) and of *DICCITVR*, which is attested in the Albertini Tablets, wherein gemination is so frequent to make it plausible a phonetic spelling. Conversely, we have discarded the geminations of the type *AVGGVSTI*, *AVGVSTALES* (overall 3, i.e. *IK* 56 1, 529, wherein it occurs twice, and *Kritzinger* 28), because such spellings may simply depend on the erroneous insertion of <G> for signaling the abbreviation of plural forms (indeed, the abbreviated spelling <AVGG> for *AVGVSTI* / *AVGVSTORVM* is widely attested).

/t/	CL Form	Relevant forms	Stress and Syllable	Date
(1)	<i>Fortunat-</i>	FORTVNATT- (x 3)	CVC.CV:.'CV:CVC	1 st -3 rd c. AD
(2)	<i>Saturnin-</i>	SATTVRNIN- (x 2)	<u>CV</u> :.'CVC.CV:CVC	101-230 AD
(3)	<i>Vetustate</i>	VETTVSTATE (x 3)	<u>CV</u> :CVC.'CV:CVC	1 st -3 rd c. AD
(4)	<i>notitia</i>	NOTTITZIA (x 2)	<u>CV</u> :.'CV.CCV	/
(6)	<i>dicitur</i>	DICCITVR	'CV:.'CV:CVC	5 th c. AD
(7)	<i>cito</i>	CITTO (x 2)	'CV.CV:	2 nd -3 rd c. AD
/k/	CL Form	Relevant forms		Date
(1)	<i>fecit / fecerunt</i>	FECCIT (x 3) / FECCERVNT (x 3)	'CV:CVC / 'CV:CVC.CVCC	1 st -3 rd c. AD
(2)	<i>pace</i>	PACCE (x 2)	'CV:CVC	4 th – 6 th c. AD
(3)	<i>dicitur</i>	DICCITVR	'CV:CVC	5 th c. AD
(4)	<i>docet</i>	DOCET	'CV:CVC	1 st -3 rd c. AD
-BB-	CL Form	Relevant forms		Date
(1)	<i>Sabellius / Sabinus</i>	SABBELLIVS / SABBINVS (x 9)	<u>CV</u> :.'CVC.CCV / <u>CV</u> :.'CV:CVC	1 st – 5 th c. AD
(2)	<i>habebis</i>	HABBEVIS (x 4)	<u>CV</u> :.'CV:CVC	1 st c. AD
(3)	<i>sibi</i>	SIBBI (x 3)	'CV:CVC	3 rd c. AD
(4)	<i>Sabulus</i>	SABBVLVS (x 2)	'CV:CVC	3 rd c. AD
(5)	<i>subscrib-</i>	SVBBISCRIB- (x 2)	<u>CV</u> :CVC.CCV:(-)	5 th c. AD
(6)	<i>Sibilus</i>	SIBBILVS (x 2)	'CV:CVC	4 th c. AD
/f/	CL Form	Relevant forms		Date
(1)	<i>Rufus / Rufinus</i>	RVFFVS / RVFFINVS (x 30)	'CV:CVC / <u>CV</u> :.'CV:CVC	1 st -2 nd AD
/p/	CL Form	Relevant forms		Date

(1)	<i>nepos</i>	NEPPOS (x 2)	'CV.CVC	2 nd AD
/r/	CL Form	Relevant forms		Date
(1)	<i>Victorinus</i>	VICTORRINO (x 2)	CVC.CV:.'CV ₂ .CVC	5 th c. AD
/m/	CL Form	Relevant forms		Date
(1)	<i>numerus</i>	NVMMERO (x 2)	'CV.CV.CV:	4 th – 5 th AD

TABLE 3.31 *V_V gemination: relevant forms attested more than once*

TABLE 3.24 reports, in addition to the information provided in TABLE 3.23, also the syllabic structure of the word and the chronological range of attestation. In the first instance, the gemination of /t/, /k/ and [β] stand out; the gemination of /f/, even though enough widespread in absolute terms, is concerned with a unique lexeme.

We shall analyze these data with regards to the relation between syllable structure and stress position. The highlighted cells refer to those inflected forms presenting stress shift.

- The 21 recorded forms may be classified according to stress position as follows:
 - (a) 13 of them show that the consonant undergoing gemination occurs after the stressed syllable, so that the first slot of the geminated consonant is associated with the coda of the stressed syllable (e.g. NEPPOS)
 - (a1) 7 forms with trochaic structure
 - (a2) 4 forms with dactylic structure
 - (a2) 2 quadrisyllabic words with the stress on the *paenultima*

The occurrence on accentual structures of this genre is consistent with a tendency affecting also Italian lexicon (cf. the introductory section), in which spontaneous consonant gemination is mostly related to paroxytones (mostly trochees) and proparoxytones. Indeed, some forms with Italo-Romance continuity stand out, i.e. CITTO (cf. OIt. *petto*), FECCIT / FECCERVNT (cf. OIt. *fecce* / *feczero*), NVMMERO (cf. Neap. *numero*). The two instances of NVMMERO parallel the form *cammarā* condemned in the *Appendix Probi*.

- (b) 6 of them show that the consonant undergoing gemination occurs before the stressed syllable (e.g., VICTORRINO). To this phenomenology we may add the form VETTIVSTATE, by assuming gemination affects the entire paradigm (i.e., *uettustas*).

We may conclude that there is a correlation between gemination and stress. The case (a) is to be further investigated with reference to syllable weight; the case (b) might be explained as the anticipation of the increase of the articulatory tension related to the accent.

- Syllable weight of forms under (a)

(c) 'CV: 7 (*fortunatt-, feccit / feccerunt, pacce, dicitur, sibbilus, ruffus*)

(d) 'CV 6 (*citto, doccet, sibbi, sabbulus, neppos, nummero*)

As can be seen, there are no cogent correlation between syllable weight and gemination. As for the case (d), consonant gemination turns out to be a means for lengthening a light syllable CV. Therefore, it would be a process that runs in parallel to the Open Syllable Lengthening (cf. Giannini & Marotta 1989, pp. 273-275). Nonetheless, the chronological height of these attestation is too early as compared to the grammarians' testimonies accounting for this process, which Loporcaro (2011a) dates back to the 5th century AD. Basically, the sporadic nature of this phenomenology accounts for a not yet systematic trend which falls within the pattern of the correlation between heavy syllable and stressed position (either CV: or CVC), cf. Marotta (2018), De Felice (2018), Marotta & De Felice (2018).

Conversely, the case (c) does not provide compelling evidence of vowel shortening, with the exception of the case *rufus / ruffinus* which may fit the pattern of the properly called *littera*-rule resulting from monophthongization. This kind of gemination, therefore, may result in the creation of superheavy rhymes.

The gemination of the type <-BB-> is noteworthy, since may hint at a phonological process operating in Substandard Latin, without Romance continuity. TABLE 3.25 shows the collected forms:

FORM	EDITION	DATE	PROVENANCE
LEGENTIBVS	<i>CIL</i> 11, 331	3 rd -4 th c. AD	<i>Aemilia (Ravenna)</i>
SABELLIO ?	<i>CIL</i> 5, 1361	50-25 BC	<i>Venetia et Histria (Aquileia)</i>
SABBINI	<i>CIL</i> 10, 4391	1-100 AD	<i>Latium et Campania (Casilinum)</i>
SABBINIS	<i>CIL</i> 10, 4391	1-100 AD	<i>Latium et Campania (Casilinum)</i>
SABBINIS	<i>CIL</i> 10, 4391	1-100 AD	<i>Latium et Campania (Casilinum)</i>
HABBEBI(S)	<i>CIL</i> 10, 8067,5e	BC 199 - 79 AD	<i>Latium et Campania Pompei</i>
HABBEBI(S)	<i>CIL</i> 10, 8067,5f	BC 199 - 79 AD	<i>Latium et Campania (Pompei)</i>

HABBEBI(S)	<i>CIL</i> 10, 8067,5h	BC 199 - 79 AD	<i>Latium et Campania (Pompei)</i>
SABBVLS	<i>ICUR</i> -9, 25489	251-300 AD	<i>Roma</i>
SIBBI	<i>AE</i> 1989, 603	201-300 AD	<i>Dalmatia (Salona)</i>
TREBBONI[ANO]	<i>AE</i> 2000, 1362	251-253 AD	<i>Pontus et Bithynia (Kios)</i>
SIBBILV(S)	<i>ICUR</i> -9, 24162	291-325 AD	<i>Roma</i>
SABBINI	<i>CIL</i> 6, 28109	/	<i>Roma</i>
SABBINI	<i>CIL</i> 5, 3690	/	<i>Venetia et Histria (Verona)</i>
SIBBI	<i>CIL</i> 13, 6191	/	<i>Germania superior</i>
SIBBI	<i>CIL</i> 6, 27958	/	<i>Roma</i>
Σαββῖνος	<i>IG XIV</i> 2347	/	<i>Venetia et Histria (Aquileia)</i>
Τιββέρτου	<i>IGLSyr</i> 21,5.1 447	/	<i>Arabia (Haurana)</i>
SABBVLS	<i>ICUR</i> -03, 08558	301-500 AD	<i>Roma</i>
SVBBISCRIBENTIBVS	<i>t. alb.</i> 24	494 AD	<i>Mauretania Caes (Theveste)</i>
SVBBISCRITVRIS	<i>t. alb.</i> 24	494 AD	<i>Mauretania Caes (Theveste)</i>
Σαββίνης	<i>I.Pal. Tertia Ia</i> 247	494 AD	<i>Arabia (Zoora)</i>
Σαββινιδένος	<i>I.Pal. Tertia Ia</i> 91	405 AD	<i>Arabia (Zoora)</i>
Σαββίνος	<i>IGLSyr</i> 21,2 102	535 AD	<i>Arabia</i>
SEBBACIAR[IA]	<i>CIL</i> 6, 3028 (p 3380)	2 nd -4 th c. AD	<i>Roma</i>

TABLE 3.32 *Intervocalic [β] gemination*

We have also reported the Latin lexemes attested in Greek sources. However, in this case we have to take into consideration that Greek presents parallel processes affecting [β], even though lexical agreement supports the hypothesis that these spellings in Greek script account for phonological processes operating in Latin. If compared to the data concerning the gemination of [w] (<[b] / [w] / [w]), notably located in Central and Southern Italy, we may notice that in this case the attestations appear to be patchier. However, data show that the earliest forms are located in Central and Southern Italy as well and that the ethnonyms *Sabinus* / *Sabellius* are peculiarly affected by this treatment. As is known, Latin /b/ underwent fricativization in intervocalic environment, thus merging with [β] resulting from derounding of /w/ in the same context. The merger of /b/ and /w/ is evidenced by the B/V spelling confusion (i.e., betacism), which is documented as early as the 1st century BC. Instances of confusion between and <V> occurs also in other phonotactic environments, i.e., in initial position and after sonorant /l/ and /r/ (cf. Barbarino 1978; Adams 2007, pp. 626-666; 2013, pp. 189-190; Adamik 2017a, 2017b, *forth.*). Our guesswork is that the spelling <-BB-> may represent the fortition of [β], i.e., the restructuring of the phonological form of a word previously affected by lenition. This phenomenology would recall a parallel process of fortition characterizing nowadays fricatives in Southern Italo-Romance dialects (cf. Ledgeway 2009, pp. 92ff; Bafile 2014,).

3.6 Synopsis

We have analyzed different aspects related to Latin geminates, both of orthographic and phonological nature. The key element which clearly stands out is the role of the syllable (and of syllabic representation) for describing the phenomena discussed so far.

(1) Orthography: the *geminatio consonantium* arises as an iconic means to define syllable weight, consistently with other spellings, both on the line and above the line, in use in Latin orthography. The case of the gemination of preconsonantal <s> complies with this phenomenology, similarly to the orthographic gemination <CCT> for /kt/ which will be addressed in the next chapter. On the other hand, beyond the purely descriptive datum concerning the functionality of these types of spellings, we have also stressed the “socio-graphic” aspect of these devices, deriving from the continuous comparison with the Greek model.

(2) Then, we have dwelt on some phonological processes as evidenced by the examined documentary framework.

(2a) As far as the *littera* rule is concerned, we have sought to find new elements for ascertaining vowel quantity of some pairs already known to tradition. Then, we have proposed a tentative analysis concerning a new lexeme unnoticed so far. The collected data allowed to provide a fine-grained analysis of the change in progress, which shows the highest degree of variability during the 1st century BC. The main trigger of the gemination of the *littera*-type is to be considered the instability of the monophthongs resulting from *ei* and *ou*, with following inverse compensatory lengthening.

(3c) Finally, we have examined a series of phonological processes as evidenced by inscriptions and papyri, i.e., gemination before /j/, /r/ and in intervocalic environment. As far as the gemination before /j/ and /r/, the restructuration of syllable head is to be considered the main trigger of the process. Interestingly, Latin data show a quite widespread tendency to the gemination before /r/, which is only patchily continued among the Romance languages. As for the V_V gemination, an evident correlation with stress emerges; marginally, it could be noticed a tendency to the assignment of syllable weight via gemination.

3.7 Appendix: *sabbatum* ~ *sambatum*

If we analyze the general phonological patterning of geminated voiced stops as evidenced by non-literary texts, it clearly emerges that these geminates are rare as compared to geminated voiceless stops. Graur's (1929) and Giannini & Marotta's (1989) lexicon show that the occurrence of geminated voiced stops is limited to 8 lexical items, namely *gibbus* 'hump', *sabbatum* 'Saturday' (from Hebraic), *abbo* 'I kiss' (baby talk), *addax* 'a kind of African animal' (cfr. Plin. *nat.* 111.124, perhaps of Semitic origin, cf. *DELL* s.v.), *babbia* 'a kind of olive' (cfr. Plin. *nat.* 15.15., perhaps of Oscan origin, cf. *DELL* s.v.), *gabbares* 'mummy' (cfr. Aug. *serm.* 361.12.12, perhaps of Egyptian origin), *obba* 'cup, armor' (maybe related to the African town *Obba*, cfr. Liv. 30.7.10), *suggillo* 'I hit' (cf. Giannini & Marotta 1989, p. 235 and *passim* for glosses). It should be noted that most of these words are borrowings or belong to the expressive language. Similarly, geminated voiced stops as evidenced by inscriptions and papyri – except the forms that have been considered – mainly occur in words of Semitic origin (e.g. *abba(s)*, *-ātis* 'abbot', which is attested in later Christian inscriptions, cf. *IHC* 238; *sabbatum* 'Saturday', and proper names such as *Abba*, *Abbal*, *Abbaeus*, *Abbaluth*, *Abbir*, *Sabbatius*, *Sabbion*, *Iddibal*, *Thuggensis*, i.e. the inhabitants of *Thugga*).¹⁸⁶ Furthermore, it has been pointed out by several scholars (cf. e.g. Martinet 1952, p. 198; Graur 1929) that some Latin words showing

¹⁸⁶ A similar situation probably characterized also Ancient Greek, as is stressed by Martinet (1952, p. 198), where $\pi\pi$, $\tau\tau$, $\kappa\kappa$, $\pi\phi$, $\tau\theta$, $\kappa\chi$ are frequent (both as the reflexes of normal sound shifts and in hypocoristic formations as a result of some expressive processes), but $\beta\beta$, $\delta\delta$, $\gamma\gamma$ are so exceptional that nothing prevented the use of $\gamma\gamma$ for [ŋg]. The scarcity of geminated voiced stops is crosslinguistic. The analysis by Maddieson (1984, pp. 205 ff), cited by Giannini & Marotta (1989), referring to a sample of 196 languages belonging to different families, shows that geminated voiceless stops occurs to a greater extent as compared to voiced stops. In this respect, Thurgood (1993) has proposed the universal implicational according to which if, in a language, there are geminated voiced stops, then there should be also voiceless geminated stops (even though the analysis by Blevins showed different counter-examples: Somali, for instance, displays only geminated voiced stops and not geminated voiceless stops). This general picture finds an explanation on the acoustic and articulatory side, thoroughly discussed by Giannini & Marotta (1989, pp. 241-243): on the one hand, voiceless stops are more favored in processes of gemination, as is evidenced by the *littera*-rule, because voiceless stops are inherently longer than voiced stops; on the other, the lengthening of the hold phase of a voiced plosive implies an increase of the articulatory tension, hindering the vibration of vocal cords (Aerodynamic Voicing Constraint). For this reason, some processes, occurring in different languages, whereby a base with a voiced stop develops a geminated voiceless stops can be explained, e.g. *Sig-* > *Sicco*, *Audo* > *Otto*, OE *liccian*, OHG *lecchōn* as opposed to Goth. *bilaigon* (with regular *-g-* from **-ǵh-*; cf. Gk. $\lambda\epsilon\acute{\iota}\chi\omega$, OIr. *ligim* etc.) among the Germanic languages; and Lt. *suc(c)us* as opposed to the verb *sugo* (cf. Martinet 1937; Graur 1929 p. 117, Giannini & Marotta 1989); similarly, Japanese voiced geminates have a tendency to devoice (e.g. *baggu* > *bakku* 'bag') (Fujimoto and Funatsu 2018).

geminated voiced stops have Romance reflexes with the dissimilation of [bb], [dd] and [gg] (e.g. *redo* > *rendo*, cf. *REW* 7141; *agger* > It. *argine*, Venez. *árzara*, Ven. *Aldzaro*, Gen. *erze*, Piedm. *erzu*, Sp. *arcén*, *REW* 277; Lt. *sabbatum* / *sabbata* > Rum. *sâmbătă*, Fr. -234 -*ocius*). The dissimilation of [bb] into [mb] is already documented in Latin, as is stressed by Graur (1929), i.e., *bambiae*, a manuscript variant, and *gimbus* (cf. *gimberosus* in *CGL* III 620,74; *gembrosus*, Isid. *Quaest. Test.* 48, p. 206; cf. Neap. *gimme*, Calabr. *yimba*, Gen. *dzembu*, *REW* § 3755). However, it must be stressed that such forms do not derive from dynamic phonological processes, but rather from the surfacing of a submerged and parallel variant (this is the case of *arger* < **adger*, cf. Prisc. Gramm. II 35 7 ‘*arger*’ *quoque dicebant pro ‘agger’ antiquissimi*, cf. Prosodicimi 2000), or from analogy and overlapping (e.g., *rendo* via *prehendo*), or from the borrowing of forms which already presented the dissimilation in the source language (e.g. *sambat*- presenting the form [mb] also in Greek and probably also in Hebraic or Aramaic, since the Semitic languages show instances of dissimilation of [bb] into [mb] as well, cf. Lipinski 1997, p. 176).

With regards to the variants of *sabbatum*, the examined documentary framework offers interesting data. Inscriptional and papyraceous sources, both Latin and Greek, attest to the dissimilated variant, which is continued in a wide linguistic area, cf. Rum. *sâmbătă*, Fr. *samedi*, *samba* at Corigliano d'Otranto (*AIS* 334), Engad. *Samda*, OHG *sambaztag* (> Germ. *Samstag*), OCS *sqbota*, Ungh. *szombat*, Capp. *śambas*, Tsak. *Samba*. Meyer-Lübke (*REW* § 7479) points out that the dissimilated variant in Rumanian is of Eastern origin (via Middle Greek > Balkan Latin); on the other hand, French and Raeto-Romance would follow the Germanic form (Wexler 1987, p. 124, Rohlfs 1933, *FEW*). Interestingly, the papyraceous documentation shows, both as for Latin and Greek, some examples of the form with *-mb-*:

- ἐν Σαμβάθῳ (P. Oxy VI 903, 4th century AD): the interpretation of this passage is not certain, and this form could also be interpreted as a toponym. The presence of θ may be explained as due to the interference with Aramaic (cf. Youtie 1937; Roberts 1939).
- τῇ τρίτῃ τοῦ σάμβατος ‘on Tuesday (lit., “on the third day of the week)” in a Greek sepulchral inscription of 581 AD, from Abda in Palestine (cf. Youtie 1937)
- in a Christian letter on papyrus (*PUG* 1 38,¹⁸⁷ SB X 10471) we read (l. 9) ἐν τῷ σαμβατα[. The fact that this from hints at the name of the day, though the fragmentary context, may be evidenced by the fact that line 6 refers to ἐν τῇ [ῥ]μέρῃ τῷ σα[(cf. Gigante 1975).

¹⁸⁷ <http://www.pug.unige.net/pug:I:38>

- |*mandas*|*se propter* | *Sambatha* |*fac itaque* | *emas et* | *tradas*. (2nd century). The letter, presumably written by a Jew (*sabbata* is the correct form for the Jewish day, while *sabbatum* was introduced by the Christians), is written in an elegant cursive. This interpretation is accepted R. Taubenschlag (1952), H. Mihaescu (1978, p. 66) Campanile (1971) and Cugusi (1992-2002, II, *ad loc.*). However, as Cugusi points out, there is also the possibility that *sambatha* = $\sigma\alpha\mu\beta\alpha\theta\alpha$, from $\sigma\acute{\alpha}\mu\beta\alpha\theta\omicron\nu$, and Egyptian unit of measure (cf J. R. Rea, P. Oxy. XXIV 2728, n. 1). The context is too fragmentary to ascertain whether the form hints at the noun of the day or at a unit of measure. However, the use of *propter* before *sambatha* makes more plausible that it refers to a circumstance rather than to a unit of measure.
- Even by excluding the hypothesis of *sambatha*, hitherto considered the only case of *sabbat*- with *mb* in Latin, inscriptions present another case of the form with *mb* in a relatively recently discovered inscription from Bingium (Upper Germany) dating back to the 7th century AD (*FIM* p. 108 = Terrien 2007, p. 38). The presence of a similar variant in this geographical area and at this chronological height coincides with the Old High German *sambatztag* form, especially because the formula appearing in the inscription is *die Sambato*.

Chapter 4

Continuity and discontinuity in *-kt-* outcomes

The present chapter will discuss the treatment of intervocalic /kt/ in Substandard Latin. As is known, Substandard Latin shows several grapho-phonological variants of this cluster, which are worthy of both phonological and if possible, socio-linguistic analysis. The analysis will be based on direct data as evidenced by epigraphical and papyraceous sources and will be carried out by joining linguistic and extra-linguistic variables.

The first section (§ 4.1) is concerned with the state of the art. First of all, the various Romance outcomes of Latin intervocalic /kt/ will be presented, with a brief discussion on their possible phonetic paths. Then, the bibliography devoted to the treatment of /kt/ in Substandard Latin will be discussed, with particular reference to the *Sostrato* issue. Indeed, some spellings of /kt/ in Substandard Latin, notably <t>, have been put in relation to either Oscan or Celtic substratum, and therefore projected over Romance fragmentation. We shall stress, in particular, the main logical and factual aporias deriving from the application of the substratist model.

The second section (§ 4.2) focuses on the analysis of collected data. After having presented general data concerning the collected spellings and their potential phonological value, we shall stress the philological and etymological uncertainties of several forms which are supposed to undergo the *-kt- > -t-* treatment (§ 4.2.1). After having presented each form possibly showing non-standard spellings of intervocalic /kt/ (§ 4.2.2), we shall problematize the phonological value of <t>, by examining the use of the *geminatio consonantium* within those texts presenting the <t> spelling (§ 4.2.3.1). Then, the correlation of the *-kt- > -t-* treatment with syllable structure will be examined, to ascertain whether such an outcome mainly occurs in heavy (i.e. /Vk.t/) or superheavy (i.e. /V:k.t/) syllables (§ 4.2.3.2). Eventually, data will be analyzed according to their distribution across time (§ 4.2.3.3) and space (§ 4.2.3.4), with a final synopsis combining the aforementioned variables with text types for each synchronic cut (§ 4.2.4.5).

The *Appendix* (§ 4.3) presents a digression which, though not being directly connected to the treatment of intervocalic /kt/ in Substandard Latin, leapt out during data collection, i.e. the variants of *October*, whose isoglosses appear to be well-defined since Latin documentation.

4.1 *Status quaestionis*

4.1.1 Romance outcomes of -KT-

Latin intervocalic /kt/ undergoes different outcomes in the Romance languages, as it can be seen in the below summary:¹⁸⁸

1. Sardinian dialects:

-KT- > -tt- > -t-. Sardinian dialects show the outcome -KT- > -tt-. This type of total assimilation parallels the outcomes -PT- > -tt-, -KS- > -ss- (typical of Italo-Romance dialects of Central and Southern Italy as well) and -GN- > -nn- (characterizing also Italo-Romance dialects of Southern Italy). Both primary and secondary geminate stops underwent degemination since the Middle Ages, except for the Central-Eastern area, cf. TÖTTUM > *totu* (C1: 11), FACTAM > *fata* (C4: 15) (Blasco Ferrer, 2017, p. 130; for other examples, cf. Wagner, 1941, § 273, p. 170). Degemination affects Nuorese, Campidanese and Logudorese (cf. Viridis, 1978, § 32; Jones, 1988, pp. 320-321).¹⁸⁹

2. Eastern-Romance:

- a. **Italo-Romance dialects of Central and Southern Italy:** -KT- > -tt- (e.g., It. *notte* < NÖCTEM; It. *diritto* < DĪRECTUM; It. *fatto*, Sic. *fattu* < FACTUM; It. *latte*, Sic. *latti* < LACTEM; It. *detto*, Sic. *dittu* < DĪCTUM; It. [ˈpetto], Cors. [ˈpettu] < PĒCTUM; It. *delitto*, Nap. *dellitto* < DELICTUM).
- b. **Balkan-Romance dialects:** Romanian shows the peculiar outcome -KT- > -pt- (e.g. *cuptor* < *COCTŌRIUM; *fapt* < FACTUM; *noapte* < NÖCTEM; *lapte* < LACTEM; *drept* < DĪRECTUM, cf. Mallinson, 1988, p. 397), paralleling the outcomes -NKT- > -mt- (e.g. O. Rom. *sămt* < SANCTUM), -KS- > -ps- (e.g. *coapsă* < CŌXAM) and -GN- > -mn- (e.g. *lemn* < LĪGNUM). The bulk of the Balkan-Romance dialects shares this innovation, e.g., Dacorom. / Arom. *noapte*, Megleorum. *noapti* / *noafti*, Istrorum. *nopte* < NÖCTEM. Traces of this outcome can be found also in Albanian, Dalmatian and Greek, e.g., Alb. *troftë* < TROCTAM, *luftë* < LŪCTAM, *cofshë* < CŌXAM; Dalm. *guapto* < ŌCTO;¹⁹⁰ Calabrian Greek *ofto* < ŌCTO (cf. Tagliavini, 1972[1949], p.

¹⁸⁸ Data from Meyer-Lübke (1890, §§ 459-463, pp. 385-390), Lausberg (1971, §§ 430-438, pp. 321-323), Rohlfs (1966, § 258, pp. 365-367). Further bibliography on specific dialects will be provided during the discussion. For the sake of consistency, we have adopted the IPA transcription whenever quoting Meyer-Lübke, Lausberg, Rohlfs and other sources adopting the transcription in use among romanists.

¹⁸⁹ In Logudorese and Campidanese the lenition affecting intervocalic stops and voiced fricatives restructures the original opposition /tt/ ~ /t/ to /t/ ~ /ð/.

¹⁹⁰ However, the treatment -KT- > -pt- in Dalmatian is not certain. In fact, the form *guapto* < ŌCTO might have been influenced by *s[i]ápto* < SĒPTEM (cf. Tagliavini, 1972[1949], p. 366).

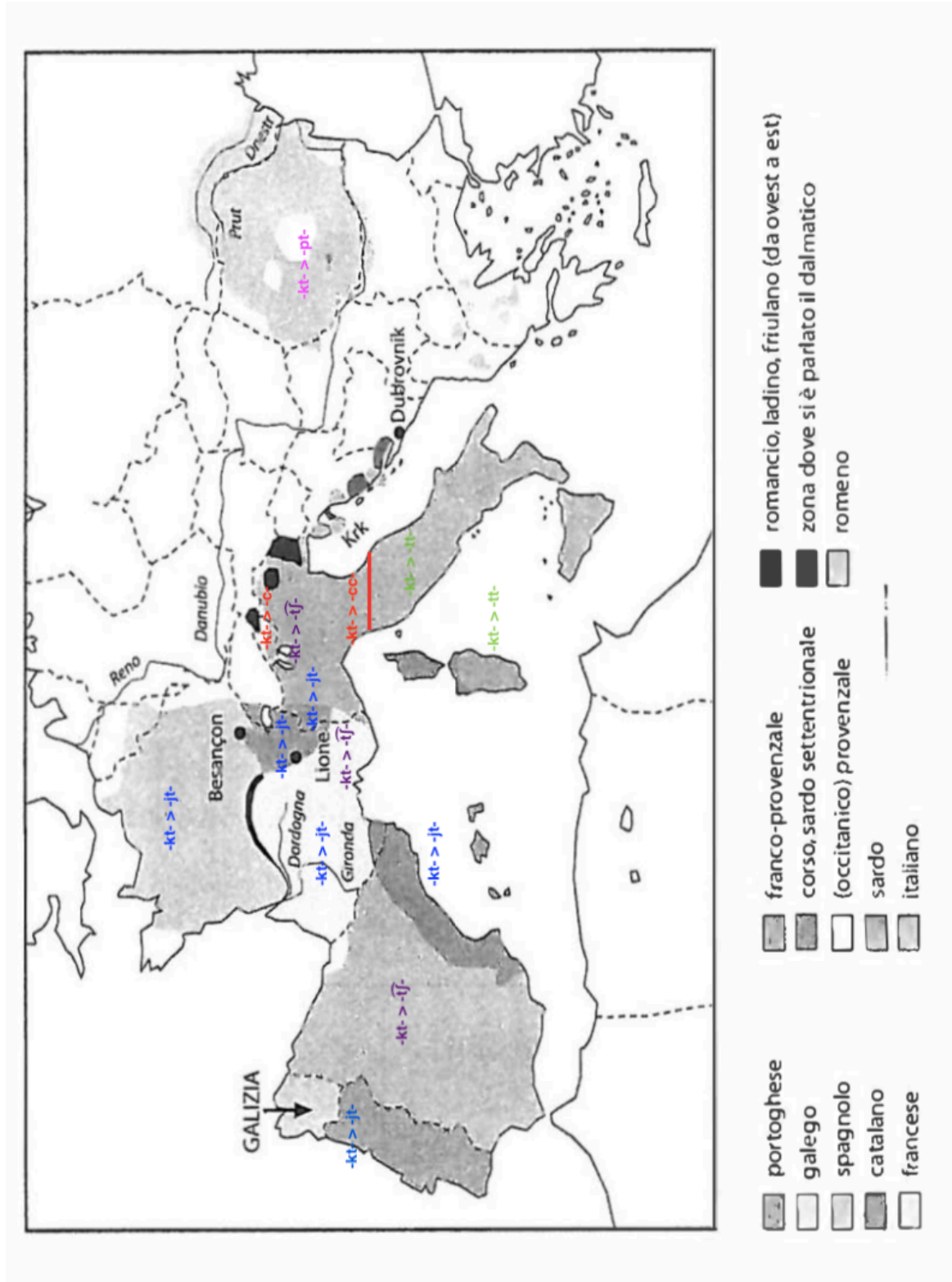
366; Di Giovine, 1982; Seigneur & Pagliaro, 2005). It is conceivable that this outcome occurred between the 3rd and 6th century: the *terminus a quo* is suggested by the fact that this treatment is not attested among the other Romance languages, the *terminus ante quem* by the fact that Slavic loanwords do not undergo this outcome (cf. Sala, 1976, p. 24; Seigneur & Pagliaro, 2005).

3. Western-Romance:

The Western area shows a more complex and stratified situation, and the phonetic path towards the main outcomes (i.e. (a) /jt/, (b) /c(c)/, (c) /tʃ/) is controversial.

- a. **-KT- > -jt-:** Oïl dialects (e.g., Fr. *toit* < TĒCTUM, *lit* < LĒCTUM, *lait* < LACTEM, *nuit* < NŌCTEM), Western Occitano-Romance (e.g., Cat. *llét* < LĒCTUM, *nít* < NŌCTEM), Galician-Portuguese (e.g., Port. *teit* < TĒCTUM, *leito* < LECTUM, *leite* < LACTEM, *noite* < NŌCTEM), Franco-Provençal (e.g., *huét* < OCTO, *nuet* < NOCTEM) and Gallo-Italic dialects (e.g., Piedm. *nöit* < NŌCTEM, *fait* < FACTUM, *tèit* < TĒCTUM, *lait* < LACTEM; O.Lig. *noite* < NŌCTEM, *faito* < FACTUM; Gallo-Italic language islands: *faitu* < FACTUM, *uoitu* < ŌCTO (Sperlinga, Sicily); *faito* < FACTUM, *pieito* < PĒCTUM (Nicosia, Sicily)). Northeast Italy shows the outcome /t/ (cf. Ven. *nòte* < NŌCTEM, *fato* < FACTUM, *peto* < PĒCTUM, *fruto* < FRŪCTUM; Emil. *nòta* < NŌCTEM). According to Rohlfs, /t/ is either due to the influence of Italian (i.e., /tt/ > /t/) or to an autonomous development with the drop of the glide in falling diphthongs (i.e., V₁.t > V.t). Since Venetian shows ancient attestations of -jt- < -KT-, Lausberg (1971, § 435) considers the second hypothesis more conceivable.
- b. **-KT- > -c(c)-:** some Retho-Romance and Gallo-Italic dialects (cf. Sursilv. *la[c]* < LACTEM, *le[c]* < LĒCTUM; Valses. *la[c]* < LACTE; *la[c]üca* < LACTŪCAM; Ticin. *nö[c]* < NŌCTEM; Tuscan Appennines dialects: *te[cc]o* (Massa Carrara), *te[c]o* < TĒCTUM (Lunigiana); Gallo-Italic language islands: *pie[c]əna* < PĒCTINEM (Potenza, Basilicata), *da[c]ua* < LACTŪCAM (San Fratello, Sicily)).
- c. **-KT- > -tʃ-:** some Retho-Romance and Gallo-Italic dialects (Lomb. *te[tʃ]* < TĒCTUM, *le[tʃ]* < LĒCTUM, *la[tʃ]* < LACTEM, *no[tʃ]* < NŌCTEM;¹⁹¹ Piedm. *nò[tʃ]* < NŌCTEM, *le[tʃ]* < LĒCTUM, *la[tʃ]* < LACTEM), Eastern Occitano-Romance dialects (e.g., Prov. *te[tʃ]* < TĒCTUM, *le[tʃ]* < LĒCTUM, *la[tʃ]* < LACTEM, *no[tʃ]* < NŌCTEM) and Castilian (Sp. *te[tʃ]o* < TĒCTUM, *le[tʃ]o* < LĒCTUM, *le[tʃ]e* < LACTEM, *no[tʃ]e* < NŌCTEM).

¹⁹¹ The modern dialect of Milan shows, besides the forms with the affricate, some instances of /kt/ > /tt/ > /t/ (e.g. *lat*, *let*, *pet*, *not*), due to the influx of Italian (cf. Rohlfs 1966, § 258, p. 367).



MAP 3.7 Distribution of -KT- outcomes (adapted map from Renzi & Andreose 2009[2003], p. 297)

Lausberg (1971, § 430) assumes that Latin /kt/ underwent a generalized fricativization of the coda, with a contextually conditioned realization, i.e. [xt] after back-vowel ([noخته]), and [çt] after front-vowel ([teçtu]), as Albanian would suggest (e.g., LÛCTAM > *[luxta] > *l'ufte*; DIRECTU > [*direçtu] > *dreit*). The different varieties of Spoken Latin would have generalized either [xt] (Eastern Romance and Sardinian, with [xt] > [tt] in Central and Southern Italy and Sardinia, or [xt] > [φt] > [pt] in the Balkans) or [çt] (Western Romance, with either [çt] > [c(c)] > [tʃ] or [çt] > [jt]). Rohlfs (1966, § 258), on the contrary, assumes that Latin intervocalic /kt/ underwent fricativization only in the Western area, through the path [ht] > [çt] > [jt] (> [c(c)] > [tʃ]). Incidentally, it is worth noticing an aspect that will be examined in detail in § 4.1.2: these two accounts on the distribution of the weakening of /k/ are based on different assumptions about the influence of substratum languages: Lausberg states that the weakening is due to the Oscan substratum,¹⁹² whereas Rohlfs circumscribes the fricativization to the Western area, possibly influenced by the Celtic substratum.¹⁹³ The Balkan-Romance outcome /pt/ was attributed to the influence of the substratum as well, notably Illyrian (cf. Nandris 1963, pp. 259-265; Rosetti 1965, p. 232).

On the phonetic side, the path towards these outcomes, notably the Western-Romance ones, is not clear-cut and it is at the center of an age-old debate among Romanists. We shall go through the main hypotheses:

- i. The most accredited hypothesis among Romanists is the so-called yod-based approach, followed, for example, by Rohlfs (1966), Lapesa (1980) and Penny (2002). Basically, it is assumed that the outcomes (3b) and (3c) develop from [jt], which is preserved in French and Galician-Portuguese. The glide, resulting from the weakening of /k/ (possibly via [ç]), would have triggered in some dialects a further process of palatalization (i.e. [jt] > [jc] > [jʧ]), paralleling the outcome of -KS- (i.e. [ks] > [xs] > [çs] > [js] > [jʃ] > [ʃ]). This approach has the merit of explaining the presence of the glide in some dialects (e.g., Ptg. *deixar* < LAXARE). Thus, the forms showing the glide would be more conservative and would

¹⁹² «La -K- del latino seguita da consonante veniva pronunciata come fricativa (in ciò bisogna senz'altro vedere un influsso di abitudini linguistiche osco-umbre)» (p. 321).

¹⁹³ «È assai probabile che l'ultimo impulso verso un tale sviluppo sia da ricercare nella pronuncia gallica del latino. In ogni caso, lo sviluppo di *k* in fricativa è già attestato nelle antiche monete ed iscrizioni galliche, per esempio *Pixtilos* a fianco di *Pictilos*, *Rextugenos* a fianco di *Rectugenos* (Dottin, [1906, p.] 64), cfr. anche l'antico irlandese *nocht* < *noctem* e, inoltre cfr. Wartburg [1936], ZRPh 56, 9» (p. 366, ft. 2).

have undergone a further process of monophthongization in other dialects (i.e. [Vjtʃ] > [Vtʃ] and [Vjʃ] > [Vʃ]).

- ii. The consonant-based approach, followed, for example, by Meyer-Lübke (1890), and Lausberg (1971), assumes that palatalization was triggered by a process of blending between the articulatory gestures of the two plosives, with the realization of [c]. Two different accounts about the outcome [jt] have been proposed (cf. Recasens, 2014, pp. 130-131; 2018, p. 132):
 1. The outcomes [jt] and [tʃ] would derive in parallel from [c], as a consequence of the perceptual integration of either the VC transition or the stop burst.
 2. The outcomes [jt] and [c] would follow two different parallel paths directly from /kt/, i.e. /kt/ > [çt] > [jt] (gliding of [ç], see (i)) and [kt] > [c] (> [tʃ]) (blending between dorsal and front lingual gestures > perceptual integration of the burst of [c] as the frication phase of [tʃ]).

Crosslinguistically, there is evidence of palatalization triggered by [k] through a blending process. However, this approach does not explain the outcome of Latin /i:kt/ in Spanish. i.e. [it] (e.g. FRICTUM > *frito*), since we would expect [fritʃo] < [frico]. The yod-based account would best explain this exception, since the glide [j] may have been absorbed by the preceding homorganic vowel [i], thus losing its palatalizing effect. This counterargument would reveal, according to Wireback (2007, p. 27), an aporia of the yod-based approach, since if we assume that the offglide was absorbed by the preceding vowel, we should expect the sonorization of [t]. However, the glide could prevent, in some cases, sonorization (e.g. Sp. *pouco* < PAUCUM; *sepa* < **sajpa* < SAPIAT).

- iii. Wireback (2007) proposes a different explanation, by assuming that the various outcomes of -KT- were initially geminated consonants, which subsequently underwent degemination in Western-Romance. These geminated consonants would derive from a process of assimilation, whose outcomes vary depending on the influence of C2, i.e. either full regressive assimilation or reciprocal assimilation, realized with different points of articulation (mid-palatal and palatoalveolar). This hypothesis allows us to explain the outcome [cc] of transitional areas and it is consistent with the outcomes of Latin /pt/, /ks/, and /ps/, assuming they all underwent a first stage of gemination. The possible outcomes of -KT- are arranged according to the degree of influence of C2 on C1, proceeding from a maximum (i.e. [tt]) to a minimum (i.e. [cc]). Each outcome is split *ab origine* into two variants, i.e., with or without the glide, resulting from the vocalization of the first phase of [k]. Basically, this model projects Romance variation (with the exception of the Balkan domain) over Proto-Romance. Cf. Wireback, 2007, p. 27:

1. Retraction of C2 without vocalization of first phase of /k/ to yod: -KT- > [cc] > [ttʃ] and following degemination, e.g., LACTEM > Pied. Vals. *la[c]* 'milk'; FACTUM > Lomb. *fač*, Prov. *fach* 'done'; NOCTEM > Piedmont. *Noč*, Prov. *noch*, Sp. *noche* 'night'
2. Retraction of C2 with vocalization of first phase of /k/ to yod: -KT- > [jcc] > [jttʃ] and following degemination, e.g., FACTUM > *fajtʃo > OSp. *fecho*, Leon. *feych* 'done'; NOCTEM > *nojtʃe > Leon. *nueche*, Prov. *nuech* 'night'.
3. C2 not retracted, no vocalization of first phase of /k/ to yod: LACTEM > Ital. *latte*, Sicil. *latti* 'milk'; FACTUM > Ital. *fatto*; Sicil. *fattu*, Venet. *fato*.
3. C2 not retracted, with vocalization of first phase of /k/ to jod: LACTEM > *lajtte > Pied. *Lait*, Fr. *lait*, Ligur. *Lète*, Ptg. *leite*, Cat. *llet* 'milk'; NOCTEM > *nojtte > Old Ligur. *Noite*, M. Ligur. *Note*, Pied. (Turin) *nöit*, Fr. *nuit*, Ptg. *noite*, Cat. **nuoit* > *nit* 'night'

However, on the phonological side, we may notice that, whatever the phonetic evolutionary path may have been, all the Romance outcomes of /kt/ imply a process of weakening (cf. Marotta, 1993, p. 77), including assimilation in accordance with Hock's (1986, p. 84) account. If, on the one hand, the Western-Romance outcomes, by accepting the yod-based explanation, shape up to be the result of a common process of weakening (i.e., fricativization and gliding), the Balkan-Romance and Italo- and Sardo-Romance outcomes, on the other hand, arise as special cases of weakening, that, according to theoretical frameworks such as Government Phonology and Dependency Phonology, find an explanation assuming the underspecified nature of the coronal /t/. As is known, coronals are unlikely to assimilate other segments, especially labials and dorsals, and, more often, they are the assimilated consonants or the output of neutralization (cf. Rice 1996, pp. 494-495; Kiparsky 1985, pp. 97-98; Lombardi 2003; de Lacy 2002, p. 268). Thus, the /kt/ > /pt/ shift may be described, rather than as a case of assimilation, as a process of weakening due to coda position, involving the loss of a prime that is responsible for the place of articulation (cf. Seigneur & Pagliaro 2005, pp. 337-338); likewise, the /kt/ > /tt/ outcome may be described, rather than as a case of assimilation triggered by the coronal, as the spread of the melodic material of the C2 to an empty segmental spot (Szigetvári 1994).

In the next sections we shall see that the majority of the spelling variants of Latin /kt/ imply a process of lenition.

4.1.2 The treatment of intervocalic /kt/ in Substandard Latin and the substratum issue

The treatment of intervocalic /kt/ in Substandard Latin has been paid much attention. Since Mancini (2000a, 2000b) and Adams (2013, pp. 166-178) present a thorough examination of the bibliography devoted to this subject, we shall just focus on those issues relevant to the analysis of the collected data.

Inscriptions and papyri display several treatments of Latin intervocalic /kt/, i.e., in quantitative order, (1) <t>, (2) <tt>, (3) <ht> / <xt>, (4) <pt> and other variants which have not been paid much attention so far (for a detailed list of the variants of Latin /kt/ cf. § 4.2). The analysis of such spellings involves several issues, such as their phonological interpretation and the problems of language contact (notably with the Sabellian and the Celtic languages) and graphemic interference, which need to be evaluated case by case, provided an attentive philological examination of the texts has been carried out.

In general, the aforementioned spellings may be interpreted as follows:

- The spelling <pt> (4) suggests a merger of /kt/ and /pt/ into /tt/ as a consequence of regressive total assimilation. This outcome, as previously mentioned, is typical of those areas preserving phonological length. Accordingly, the spelling <pt> for etymological /kt/ results from hypercorrection. Cases of hypercorrection are attested also in manuscript tradition, cf. e.g., *laptuca* (CL *lactūca*) in SORAN. p. 70, 18 *cod. h*; DIOSC. 2, 45 p. 195, 11.4, 25 p. 20, 5. 4, 60 pp. 33, 12; CGL V 321, 12. 385, 36 (cf. TLL, vol. VII 2, p. 856, lin. 5 - p. 856, lin. 70). In some cases, the inverse spelling is further favored by processes of popular etymology, as in the case of *ruptatio*, *ruptus* for CL *ructatio*, *ructus* 'belch' in the translations of Oribarius and Dioscorides (cf. Ernout, 1946, pp. 229-230; FEW 10.539; Niedermann, 1912, p. 58; Adams, 2013, p. 169), merging with *ruptus* (ppp. of *rumpo*).¹⁹⁴ French *rot* and *roter* 'belch' may derive from *ructus*, *ructare* via RUPTUM, RUPTARE (cf. Bloch & Wartburg, 1968, p. 562; Adams, 2013, p. 169). However, the equivalence /tt/ < /kt/ = <pt> (via /tt/ < /pt/) must be evaluated carefully, since also Latin /pt/, even if more rarely than /kt/, is sometimes spelled <t>. Therefore, the spelling <pt> for /kt/ may also hint at another type of phonological process, i.e., /kt/ > /t/ and /pt/ > /t/ with subsequent hypercorrected spelling of /kt/ via <pt>. Hence, the interpretation of the inverse spelling of /kt/ via <pt> requires firstly the analysis of the phonological value of <t> (cf. below).

¹⁹⁴ cf. VITR. 3.5.15: *nives [...] liquatae [...] perveniunt ad infimas montium radices, ex quibus profluentes fontium erumpunt ructus*.

- The spellings <ht> / <xt> (3) (e.g., <OHTVBERES> for CL *Octubres*, in *CIL* 13, 8481) have been attributed to the grapho-phonological interference with the Celtic languages. Such spellings would suggest the fricativization of /k/. Indeed, the Celtic languages show a widespread tendency to the spirantization of the coda in the /kt/ cluster, cf. e.g., <ANEXTAO> (I G-268) and <INBRAX[TARI?]> (La Graufesenque, 6.10) (cf. Mullen & Ruiz Darasse, 2019; Adams 2003, pp. 438-440; 2013, pp. 169-170). However, we anticipate right away that the interpretation of the <HT> spelling as a result of Celtic interference is not exempt from doubts.
- The spelling <tt> (2) suggests the process of regressive total assimilation continued among the Italo-Romance dialects under the La Spezia-Rimini line and Sardo-Romance dialects. The first instance of <tt> is commonly acknowledged as <LATTVCAE> (EDICT. Imp. Diocl. III/IV 6, 7; 301 AD). However, the collected data allow backdating the first attestation as early as the end of the 1st century AD. Clues of total assimilation can be found also in inverse spellings of /tt/ via <ct>, which, however, are limited to the personal name *Vettius* and its derivatives.
- The spelling <t> for /kt/ (1), though being the most widespread variant, is also the most controversial one. Several questions concern the interpretation of this spelling, i.e., its phonological value (whether /t/ or /tt/), the potential influence of substratum languages (notably the Sabellic and the Celtic ones) and the philological uncertainties of some attestations. We shall schematically present the main issues, by stressing the implications each hypothesis leads to.

From the phonological point of view, the spelling <t> has been interpreted in two different ways:

A. <t> = /t/. If one interprets the spelling <t> as a phonetic spelling, this variant would hint at a process of coda reduction (/kt/ > /t/). Hence, this phenomenon would be parallel and independent if compared to the process of total assimilation /kt/ > /tt/ (cf. Väänänen 1981, p. 65; Mancini 2000a, 2000b). As for the processes triggering the drop of /k/, two different hypotheses have been advanced: on the one hand, this phenomenon has been interpreted as a process of syllable-weight reduction affecting superheavy syllables VCC / V:C (e.g. *auc.tor* > *autor*, cf. Kiss 1971, pp. 28s; Giannini & Marotta 1989, p. 264; Giannini 1995); on the other hand, Mancini (2000a, 2000b) stresses that /kt/ > /t/ affects not only superheavy syllables but also heavy ones (e.g. *Vic.toria* > *Vī.toria*), with subsequent compensatory lengthening of the preceding vowel. According to Mancini, tris treatment would be a feature of Dialectal Latin, shared along with the Sabellian languages (cf. below), without Romance continuity.

- B. <t> = /tt/. The spelling <t> would be an allograph of <tt> (cf. e.g., Lindsay 1894; Juret 1921; Baherens 1922; Ernout 1928[1909]; Niedermann 1953[1931]; Battisti 1949; Peruzzi 1964; Rohlf's 1966; Pisani 1964, 1978; Bonfante 1968, 1999; Leumann 1977; Sommer & Pfister, 1977; Devine & Stephens, 1977; Giacomelli, 1983; Adams 2013, pp. 166-178). Hence, the forms showing <t> would have undergone the phonological process /kt/ > /tt/. Scholars supporting this hypothesis tend to join together the treatments <t> and <tt> with the formula -kt- > -t(t)-. This hypothesis is based on the assumption – partially well-founded – that the *geminatio consonantium* is often employed inconsistently within epigraphic texts. However, this stance needs to be substantiated with the scrutiny of the use of the *geminatae* within those texts presenting <t>.

From a sociolinguistic perspective, the spelling <t> has been often put in relation with the Oscan substratum. This assumption leads to different interpretative frameworks of the path towards the Romance outcomes, depending on whether <t> is interpreted as A (i.e., /t/) or B (i.e., /tt/).

The Sabellian languages display the following data as for the treatment of intervocalic /kt/:

- As for primary *-kt-, the Sabellian languages show a process of spirantization of the coda, represented by means of the spelling <ht> (e.g., O. **ehtrad**, U. **ap-ehitre** < *ek-tro, cf. Lat. *extra*; **úhtavis**, cf. Lat. *Octāvius*; U. **rehte**, cf. Lat. *rēctē*; O. **saahtúm**, U. **sahta**, **satam**, **sahtam**, cf. L. *sānctus*; U. **uhtur**, cf. L. *auctor*). Umbrian shows also instances of the complete drop of the coda (U. **speture**, cf. L. *(in-)spector*) (cf. Buck 1904, p. 89).
- Secondary -kt-, resulting from syncope, is preserved in Oscan, whereas appears as <it> in Umbrian, with a treatment paralleling some outcomes of the Western-Romance languages (O. **factud**, cf. Lat. *facito*; U. **aitu**, **aitu**. O. **actud**, cf. Lat. *actum*; U. **teitu**, **deitu** 'dicito' < *deik(e)tōd; U. **feitū**, **feitux**, **fetu** *feetu* 'facito' < *fēk(e)tod; U. -**veitu** (**arveitu**, **arsueiuto** 'advehito') < *uektōd < *ueghetōd (cf. Buck 1904 §§ 142, 143, p. 89).

Mancini (2000a, pp. 46-49; 2000b, pp. 132-133) pinpoints three diachronic stages of the treatment of *-kt- among the Sabellian languages:

- I. **Vkt** > **Vxt**: This stage is not directly attested, and would be shared by Paleo-Umbrian, Pre-Samnite Oscan;
- II. **Vxt** > **Vht**: This stage is attested in Samnite Oscan and Umbrian;
- III. **Vht** > **Vt**: This stage is seldom attested in Umbrian and Paelignian. Mancini does not rule out the hypothesis that this outcome was widespread also among Oscan informal varieties, whereas official epigraphy continued using the conservative spelling <ht>.

The spirantization of the coda, up to the complete drop of /k/, responds to a general tendency, typical of the Sabellian languages, towards lenition, involving also the treatment of *-*pt*- and *-*ks*- (> /ft/, /hs/), as well as monophthongization.

Given the treatment of *-*kt*- among the Sabellian languages, the hypothesis that /kt/ > /t/ as evidenced by Latin inscriptions (according to the phonological interpretation A) could be triggered by the Oscan substratum cannot be ruled out in principle, especially since this spelling appears to be particularly attested in Latin inscriptions from Mid-Southern Italy. In fact, in case evident onomastic, prosopographic, chorographic, and chronological clues refer to a *milieu* of Italics at a first stage of latinization, there is no reason to exclude this hypothesis.¹⁹⁵

However, some caveats are needed in this respect:

- i. First, as Mancini (2000a, pp. 47-48; 2000b, p. 124) observes, Latin loanwords in Oscan seem to show the preservation of /kt/, e.g., **vikturrai** (Po 16), **victurei** (Ve 217). This would suggest that Latin-Oscan bilingual communities did not pronounce Latin /kt/ as [ht] or [t].
- ii. Second, the actual higher concentration of the spelling <t> among inscriptions from Mid-Central Italy has not been clearly ascertained. Indeed, the mere fact that Rome and *Latium et Campania / Regio I* show the highest epigraphic density may lead to overestimating the geographic spread of this phenomenon.
- iii. Eventually, the spelling <t> is attested continuously among epigraphic and papyraceous texts from the end of the Republican era till the 8th century AD. Hence, the substratum hypothesis seems to be the most onerous assumption, since the Sabellian languages were no more spoken from the 2nd century AD at the latest. Rather, it would be more conceivable that Latin and the Sabellian languages presented two parallel tendencies towards lenition, i.e. a common innovation shared by the Italic languages. In this respect, Mancini (2000a, 2000b) refers to a *Sprachbund* feature. Possibly, also Faliscan may have shared this innovation (cf. below).

In case the phonological interpretation B underlies the substratum hypothesis, a direct link between the Oscan substratum and the outcomes of the Italo-Romance dialects of Central and Southern Italy and Sardo-Romance is traced (along with the assimilations /ps/ > /ss/, /ks/ > /ss/, /pt/ > /tt/). This is the

¹⁹⁵ cf. Väänänen (1981a, p. xx): *à Pompeii une prononciation osquise n'est pas exclue dans O(c)tavs*; Adams (2013, p. 175): *there is no reason in principle why the t-spelling that is quite common in Latin inscriptions and the like, and rather more common than tt, should not correspond to Italic ht or t.*

traditional hypothesis assumed by Baherens (1922), Peruzzi (1964), Pisani (1964, 1978), Bonfante (1968, 1999), Lausberg (1971), Devine & Stephens (1977).

In this case, three caveats need to be taken into consideration:

- i. Given the inconsistency of the notation of the *geminatae* in Latin inscriptions, one cannot exclude in principle that <t> is employed as an allograph of <tt> (cf. Adams, 2013, pp. 176-177). Nonetheless, as is shown in CHAPTER 3, the *geminatio consonantium* is generalized since the end of the Republican age. If, on the one hand, spellings with singleton consonants could also refer to long consonants, on the other hand the high number of the <t> spellings makes it unlikely that such mistakes occurs so frequently. Therefore, this hypothesis needs to be evaluated by checking the actual use of the *geminatae* within those texts showing <t>.
- ii. Secondly, a direct link between the spellings <t> and <tt>, and, therefore, between the treatment of /kt/ in Oscan (i.e., /kt/ > /ht/ > /t/) and in the Spoken Latin varieties continued by Italo-Romance and Sardo-Romance (i.e., /kt/ > /tt/) is problematic from the phonological point of view, since the former implies a weakening of the articulatory tension, whereas the latter an increase.
- iii. Even without the questions illustrated in (i) and (ii), it is rather onerous to hypothesize that the weakening of the coda, which would be the basis of all the Romance outcomes according to Lausberg's reconstruction, has been triggered by the Sabellian languages. Indeed, this stance would single out that the variety of Spoken Latin exported to all the provinces of the Empire was the Italics' one. For the reasons discussed in CHAPTER 1, this assumption is hardly plausible.

Furthermore, as a consequence of the equivalence <t> = <tt> and the assumption that the outcome /kt/ > /tt/ was triggered by the Oscan substratum, there have been many attempts to backdate the early attestations of total assimilation to the Republican period, as well as, in some cases, to find this outcome also in the Sabellian languages. The bulk of these alleged attestations of /kt/ > /tt/ is controversial from the etymological and philological point of view. We shall present a brief list of these problematical lemmata, referring to Mancini (2000a, 2000b) and Adams (2013, pp. 167-169) for more detailed analysis:

- *blatta* 'cockroach' is attested in Laberius (94 Ribbeck). This form is supposed to be derived from **blacta* by Ernout (1928, p. 123) and Bonfante (1987, pp. 543-544), due to the parallel with Lett. *blakt-d*, *blākē* 'cimicid'. The etymology is too uncertain to provide evidence of /kt/ > /tt/.
- *brattea* 'a thin plate of metal' is supposed to be derived from *bractea* (Ernout, 1928, pp. 125-126), which is attested in Apuleius (*Met.* 10.30, 11.16), whereas the form *brattea* is more common. The etymology is too uncertain to provide evidence of /kt/ > /tt/.

- *coturnix* 'quail' is spelled both *coturnix* and *cocturnix* (cf. the manuscript tradition of Lucr. 4.641). The grammarian Caper states that the correct spelling is *coturnix* (*coturnices non cocturnices*, K 7.108.17). *Cocturnix* is commonly acknowledged to be the etymological form, cf. the parallel with OHG *Wahtala* 'quail' (*LEW* s.v.; Mancini, 2000b, p. 131; on the contrary, the *DELL* s.v. and Adams, 2013, p. 167 are more skeptical about this etymology). The first vowel is scanned long in Plautus (*Asin.* 666, *Capt.* 1003), whereas in later poetry is scanned short. Mancini (2000b: 131-132) supposes a dialectal development *cocturnix* > *coturnix* ([ko:turni:ks], with [Vkt] > [V:t]) accounting for Plautine scansion.
- <VITORIA> (CIL I², 550 = Ve 366c), Praeneste, 3rd century BC. This would be the first attestation of the outcome *-kt-* > *-t(t)-* in Latin epigraphy. However, this form is controversial: Wachter (1987, p. 146) considers it a mere error, with the omission of <C>; according to Mancini (2000a, p. 49; 2000b, p. 126) it would be an ephemeral instance of graphemic interference between Etruscan and Latin. Cippi from Praeneste display also the form <VETTEIAI>, which is supposed to be derive fromd *Vect-* by Ernout (1928[1909]) and Franchi De Bellis (1997). Yet, as Mancini (2000a, p. 49; 2000b, p. 132) points out, the *nomen gentile* *Vettius* does not derive from *vecti-* but rather from *veti-*, and is possibly of Etruscan origin.
- **tettom-e** (*Tab.Eugub.* VIa 13, 14) would correspond to Lat. *in tecto* (cf. Pisani, 1964, p. 139). This juxtaposition would hint at a process of total assimilation /kt/ > /tt/ also in Umbrian, which, paradoxically, is the language showing the complete drop of /k/. Mancini stresses that the semantic inconsistency in translating this from 'to the roof' allows concluding that U. **tettom-e** and Lat. *tectum* do not have the same etymology, and that the Umbrian form is more likely a pre-Indoeuropean toponymic relic.

The present initial framework allows concluding that it is necessary firstly to ascertain, if possible, the relation between the spellings <t> and <tt>. Preliminarily, we shall assume the hypothesis by Mancini (2000a, 2000b) of two different outcomes of *-kt-* in Latin, i.e., a dialectal one *-kt-* > *-t-*, without Romance continuity, and a "vulgar" one *-kt-* > *-tt-*, which is continued in some Romance languages. The hypothesis of the Oscan substratum for the *-kt-* > *-t-* outcome cannot be ruled out in principle. Nonetheless, the geographic diffusion and the chronological extent of the <t> spelling is such to make this assumption hardly plausible. Instead, the hypothesis of the Oscan substratum for the *-kt-* > *-tt-* outcome is unlikely, not only for historical reasons, but also for phonological ones.

Let us turn now to the potential influence of the Celtic substratum in triggering the outcomes of *-kt-* in Western-Romance. As previously mentioned, the phonetic evolutionary path of these

outcomes is highly debated, but, according to a widely established hypothesis, they may have been influenced by the Celtic substratum (cf. e.g., Wartburg 1936; Rohlfs 1966, § 258; Tovar 1961, p. 81; Lapesa 1981 p. 43; Lambert 2003, pp. 46-47; Adams 2003 pp. 438-439; Kerkhof 2018, pp. 145-146).

- It is conceivable that in **Common Celtic** the clusters **-ks*, **-kt*, **-ps*, **-pt* have undergone the weakening, via fricativization, of C₁, with the outcome /x/. Hence, **-kt* and **-pt* merge into *-xt*, whereas **-ks* and **-ps* merge into *-xs*. As for the clusters **-ps* and **-pt*, we must assume that this phonological process has occurred before (**p* > **φ* > *Ø* (cf. Stifter 2017, pp. 1191-1192).
- **Gaulish** provides the most remarkable examples in this regard. The velar fricative /x/ was spelled, respectively, either <χ> or <x> in Greek and Latin script (cf. Lejeune, 1985, p. 445; Delamarre, 2003, p. 112; Lambert 2005, pp. 46-47; Russel 2013[1995], p. 368; Mullen & Ruiz Darasse, 2019). See, for instance: ANEXTAO (I G-268); *brixtia* ‘magical formula’ (Cham.), cf. OIr. *bricht*, MW *-brith* in *lled-frith* ‘magical charm’, OBret. *brith* (Matasović 2009, p. 79); *Dexsiva* / *Dexsiva* (ILN 3, 220, 221);¹⁹⁶ *sextan-* (*sextamentos* ‘seventh’, La Graufesenque 19.1) < PIE **septm*, cf. OIr. *sechtmad*, MW *seithfed*, MBret. *seizvet*, MoBret. *seizhved*, Co. *seythves*, *seythes*; **owxselo* ‘high, elevate’ (cf. the toponyms *Uxello-dunum*, *Uxama*), cf. Gk. ὑψηλός; *inbrax*[*tari*?] (La Graufesenque, 6.10), if it is to be related to *bractea*; *Atrexstus* for *Atrectus* (CIL 13, 06140); *Rextugenos* (CIL 13, 10015, 85a) < **reġ-to-*, cf. OIr. *recht*, MW *reyth*. Furthermore, there would be evidence of the outcome *-jt-* in Pannonian Celtic (cf. *Reitugenos*, CIL 3, 4368, Brigetium, 70-100 AD), possibly paralleling the outcomes of French / Galician-Portuguese and Umbrian (cf. Lazzeroni, 1961)
- **Celtiberian** possibly provides pieces of evidence of the complete drop of C₁, whereas instances about the treatment of **-pt-* are lacking (Wodtko, 2003, p. 10), see *retugeno* (MLH K1.3, 2nd BC) < **reġ-to-* (cf. *Rextugenos* in Gaulish). Other potential attestations are etymologically problematical.¹⁹⁷ Due to the use of the Paleohispanic semi-syllabary, not allowing the spelling of stop+stop sequences (cf. Beltrán Lloris & Jordán Cólara, 2017, pp. 15-16), it is not clear whether r.e.Tu.Ke.n.o points at *-kt-* > *-t-* or *-kt-* > *-xt-*. However, this name is spelled in Latin inscriptions from the Iberian Peninsula both *Ret-* and *Rect-*, and the *Re(c)tugenos* mentioned in the Botorrita plaque is perhaps to be identified with the Πητογέννης cited by Appian (*Iber.*, 49). Therefore, it is conceivable that in Celtiberian **-kt-* had undergone a further stage of fricativization of C₁, via *-xt-* > *-ht-* (> *-t-*), with spellings oscillating between <ct> and <t> in Latin script. Further

¹⁹⁶ *Dexsiva* is a theonym, deriving from **dexsiwo-* ‘right, south’ < PIE **deksiwo-* (cf. Gk. δεξιός).

¹⁹⁷ See *ata* (SP.T.14) < **akta* (?), *litom* (BBBI, A1, A2) < **leik^wtonr* (?), *teitiakos* (SP.M. 39) < **teiktiakos* (?), cf. *WKI* s.v. for discussion.

evidence of the complete drop of C₁, at a later stage, is provided by the variant *Ambadus* (CIL 2, 5702, 2nd AD), implying a further development towards lenition of an underlying *Amba[t]us*, rather than *Amba[ht]us* or even *Amba[xt]us*.

Given the above, the Celtic languages seem to widely attest to a process of fricativization of all non-dental obstruents whenever followed by /t/ and /s/. As for *-kt-*, Celtiberian would show a further stage of weakening, up to the complete drop of C₁ (*-xt-* > *-ht-* > *-t-*), whereas in Eastern Europe there would be slight evidence of the vocalization of the fricative (possibly via *-xt-* > *-çt-* > *-jt-*).

Though these data are mostly concerned with onomastic material and lemmata of Celtic origin, there may be evidence of the application of the Gaulish phonotactic rule $T_{[-\text{dent}]} > x_{-} \{t/s\}$ to Latin words showing /kt/, /pt/, /ks/ and /ps/. The forms *inbrax[tari?]* (La Graufesenque, 6.10) and *souxtom* (Tab. Vind. 11.1301) should be kept out of the discussion, since their relation with *bractea* and *su(m)ptum* is uncertain, but the adaptations *paraxidi* (< Lt. *paropsidi* < Gk. *παροψίδες*) and *caxtos* (< Lt. *captus*) may hint at a “Celticizing” accent of Latin words. Further evidence, for a much later period, is provided by Kerkhof (2018, pp. 92, 145-146), maintaining that the verse correspondence of Frodebert and Importun (ca. 665 AD) would hint at a Gallo-Latin → Pre-French merger of /pt/ and /kt/ in /çt/, because the word *acta* and *apta* rhyme together. Nonetheless, this is not a compelling clue, since the rhyme could also hint at the merger of /kt/ and /pt/ in /tt/.

However, the possible existence of a Celticizing Latin around, say, the 1st-2nd c. AD, does not allow to trace a direct link with Gallo-Romance. Indeed, from a mere logic and structural perspective:

- If Celtiberian shows a *-kt-* > *-t-* outcome, we should expect that the result of *-KT-* is [d] (via *-kt-* > *-t-* > *-d-*) rather than [tʃ] (Spanish) and [jt] (Galician-Portuguese). One may reply that Celtiberian ceased to be spoken much earlier than Gaulish. Therefore, it would be plausible that the Gaulish substratum had a greater influence on the local variety of Spoken Latin continued in Gallo-Romance. But how to explain, then, that the outcomes [jt] and [tʃ] are scattered in all the Gallo-Hispanic domain, and, especially, how to explain that both French and Galician-Portuguese share the outcome [jt]?
- If in Common Celtic **-pt-* and **-kt* merge into *-xt-* (Gallo-Latin texts provide compelling pieces of evidence in this regard) and if we assume that a Celticizing Latin applying this rule flowed into Gallo-Romance, then we should expect a common outcome of *-PT-* and *-KT* (instead of /t/ ~ /jt/ ~ /tʃ/).

If we extend our gaze to other *Restsprachen*, we can trace phenomena similar to those examined so far:

- **Faliscan** possibly shows instances, though controversial, of *-kt-* > *-t-*, i.e. **lete** (MLF 285), if it is to be related to Lt. *lecti*, and **fita** (EF 1), if it is to be related to Lt. *ficta* (cf. Bakum 2009, p. 92, with discussion and references).
- The **Venetic** theonym *Reitia* (Es 27) (by accepting the transcription **re.i.tia.i**,¹⁹⁸ cf. Untermann 1961, p. 18; Lejeune 1974, p. 328; Prosdocimi 1978, p. 285) may hint at **-kt-* > *-jt-*, assuming it is comparable to Lat. *rect-* (cf. Lazzeroni 1961, p. 296).

That said, though the Faliscan and Venetic testimonies should be more safely kept out of the discussion, we may note, even by only considering the Celtic and the Sabellian languages, that a wide linguistic area shares a common tendency towards the weakening of C₁. On this purpose, Prósper (2018, p. 46) maintains that the whole of western-IE shared an evolution *-Vkt-* > *-Vxt-*. Several scholars were inclined to consider this isogloss, and notably the outcome *-kt-* > *-jt-*, as the result of a Celtic irradiation moving southwards, affecting previously Venetic and ultimately, Umbrian, wherein the outcome *-jt-* affects only secondary *-kt-*. Leaving aside this specific issue, for which we refer to Lazzeroni (1961), it is important for our purposes to stress, rather than a common affiliation, the crosslinguistic nature of such a process of fricativization, proceeding along autonomous rivulets with a similar pattern. Indeed, in a stop+stop cluster it is rather common, from an articulatory perspective, that the C₁ is realized allophonically with a flawed hold phase and a weak burst, whereas the C₂ is articulated more clearly. Hence, the C₁ turbulence may be phonemicized as velar fricative [x], with the same place of articulation as [k], or as palatal fricative [ç], with fronting triggered by the anticipation of the alveolar articulation. Accordingly, at a further stage of weakening, the velar fricative [x] may be phonemicized as [h] and, subsequently, as vowel homorganic to the preceding one, whereas [ç] may be phonemicized as [j].

Therefore, the hypothesis that also Latin may have shared a similar evolutionary path of *-kt-* and that the <t> spelling may hint at this process seems plausible. At this point, we may add another counterargument against the substratist hypothesis: if the only argument in favor of a potential Oscan or Celtic substratum in triggering the Romance outcomes is the evidence of the spirantization

¹⁹⁸ Previously **reh.tii.ai**, cf. e.g. Whatmough (1934).

/ drop of C₁, then, by assuming that also Latin displayed, independently, this phonological process, the recourse to the substratist explanation results to be unnecessary.

4.2. Data analysis

The scrutiny of Latin primary sources revealed a significant number of non-classical spellings of /kt/, as is evidenced in TABLE 4.1 (showing, for the sake of completeness, also the spelling variants of /nkt/). In the first instance, we will just present the general data concerning the collected spellings. However, we anticipate that these data, especially as far as those pertaining to the spelling <t> are concerned, should be kept with the benefit of inventory. In fact, the general estimates marked with the asterisk may considerably vary because of the philological and etymological uncertainties affecting the bulk of them. Rather, this table aims to present an initial overview of the spelling variants of -kt- and to provide a preliminary linguistic analysis. The collected data have been arranged by distinguishing: (1) spelling variants of intervocalic /kt/, (2) inverse spellings of /t/ via <ct>, (3) inverse spellings of /tt/ via <ct>, (4) spellings variants of /ktjV/ < /ktiV/, (5) spelling variants of /nkt/.

Underlying segments			Spelling	Occurrences
(1)	/kt/			
		(a)	<t>	256*
		(b)	<tt>	28*
		(c)	<pt>	2
		(d)	<gt>	7
		(e)	<cit> / <cet>	10*
		(f)	<ht> / <xt>	6
		(g)	scribal errors ?	41
		(h)	orthographical gemination	13
(2)	/t/			

		(a)	<ct>	11
(3)	/tt/			
		(a)	<ct>	3
(4)	/ktjV/ < /ktiV/			
		(a)	<ti>	15
		(b)	<ci>	4
		(c)	<cci>	8
		(d)	<cxi>	2
		(e)	<xi>	10
		(f)	<xsi>	1
(5)	/nkt/			
		(a)	<ct>	90
		(b)	<nct> <i>pro</i> /kt/	6
		(c)	<gt>	2
		(d)	<ngt>	8
		(e)	<nt>	384
		(f)	<nct> <i>pro</i> /nt/	3
		(g)	<nuct>	1
		(h)	<t>	7*

TABLE 4. 33 *Spelling variants of the clusters /kt/, /ktj/, /Nkt/*

At the outset, we may interpret the forms collected in TABLE 4.1 as follows:

- (1a) The spelling <t> of intervocalic /kt/ is the most attested variant. In fact, there are possibly 256 occurrences, to which the 11 occurrences of *scriptio inversa* of /t/ via <ct> (2a) can be added, for a total of 267 occurrences. This spelling, whose phonological value will be examined later in § 4.2.3.1, would represent the 81% of the misspellings of /kt/ (by considering intervocalic /kt/ and excluding the forms collected in (1g)). The remarkable frequency of this misspelling, if compared to the other ones, can be confirmed by the well-known passage of the *Appendix Probi*, wherein the forms *autores* and *autoritas* are stigmatized.
- (1b) On the other hand, it is surprising that the spelling <tt>, certainly showing Romance continuity and being attested also in official texts (see <LATTVCA> in Diocletian's *Edictum de pretiis*), presents a small number of attestations, amounting to the 8% of the misspellings of /kt/. To the 28 collected forms, we may add the inverse spellings of /kt/ via <pt> (1c) and of /tt/ via <ct> (3a). As for the hypercorrected spellings of /kt/ via <pt>, as previously mentioned, we must assume a merger of /kt/ and /pt/ in /tt/, with following inverse writing of /kt/ via <pt>, as well as, more rarely, of /pt/ via <ct> (<SAECTO> for *saepto* in *Hep* 201, 73; 1st-2nd c. AD; *Hispania Citerior*). Nonetheless, as anticipated, a more plausible interpretation of the phonological value of such inverse spellings will be provided only in the light of a more detailed analysis of the spelling <t>, since also underlying /pt/, even if more rarely than /kt/, shows the <t> spelling (<OTAMVS> for *optamus*, *AE* 2000, 1611; <OTABILIS> for *Optabilis*, *CIL* 8, 11458; <OTATVS> for *Optatus*, *CIL* 8, 6504; all coming from *Africa proconsularis*). Therefore, the inverse spelling (1c) may also hint at another phonological process, i.e. -kt- > -t- and -pt- > -t- merging together. As for the forms collected in (3a), they are limited to the *gentilicium* *Vet(t)ius* and its derivatives.

Besides these two grapho-phonological variants, possibly hinting at two opposite tendencies, i.e., as a consequence of the weakening of C1, its complete drop or its realization as C2 (with the anticipation of the hold phase of C2), we may note other spellings which, though marginal, deserve attention:

- (1g) The spelling <gt> (7 occurrences total) may suggest a process of sonorization, therefore proceeding towards lenition / weakening of the syllabic coda.
- (1e) The spelling <cit> / <cet> would point at vowel insertion within the heterosyllabic cluster, though the interpretation of some of these forms, as we shall see, is problematical, since some of them could also be explained as morphological variants or simply mechanical errors.
- (1h) The spellings <ht> and <x(t)> may hint at a spirantization of C₁. They are peculiarly attested in *Germania superior* and *Germania inferior*, and have been traditionally interpreted as pieces of evidence of graphemic interference with the Celtic languages (see Adams 2003, p. 439; Adams 2013, p. 175).
- (1g) Under the item “scribal errors” we have considered a series of misspellings that can be best explained as due to mere editorial mistakes. In particular, the forms showing <CI> are due to the partial realization of the horizontal trait of T.
- (1f) This misspelling, classified as “orthographical gemination” is worthy of attention. In fact, spellings such as <CCT> and <CTT> of /kt/ may hint at two different processes. The first one may suggest a tendency to contrast the weakening of the coda, by geminating the C₁. The second spelling may suggest the total assimilation -kt- > -tt-, with the C₁ added due to hypercorrection.
- (4a-f) As it can be noted, we have classified separately the spellings of /kt/ followed by antevocalic /i/. As is known, from the 1st c. BC antevocalic /i/ underwent a process of gliding (cf. CHAPTER 3 as for the gemination triggered by /j/). The analysis of the spelling variants of /ktjV/ (4a-f), exemplified in TABLE 4.2, involves also the consideration of the treatment of the clusters /tjV/ and /kjV/.

	<TI>	<(C)X(S)>	<C(C)I>	<CTI>
(i) /ktj/	AVTIO / INDITIO	INDI(C)X(S)IO	INDICCIO	<i>regular spelling</i>
(ii) /kjV/	BRATIVM		<i>regular spelling</i>	
(iii) /tjV/	<i>regular spelling</i>		TRADICIO	TRADICTIO

TABLE 4..34 *Spelling variants of /ktj/ and inverse spellings of /kjV/ and /tjV/*

From the 1st century AD, a process of affrication / assibilation of the cluster /tj/ is documented (cf. Loporcaro 2011b), which is suggested by spellings with <z>, <tz>, <ts>, <tʒ>, <s> (cf. Adams 2013, pp. 121-123). After the affrication / assibilation of /tj/, it is conceivable that also /kj/ underwent this process, which, in some Romance areas, led to the merger of the outcomes of /kj/ and /tj/. This merger is shown by the inverse spellings (ii) and (iii), common in the manuscript tradition and Medieval Latin as well. Also /ktj/ underwent affrication / assibilation with analogous treatment as primary /tj/, as is suggested by spellings such as <INDITIO> (inverse spelling suggesting the merger of /ktj/ and /tj/ in the sibilant / affricate outcome), <INDIXIO> (with <X>, variously combined with <C> and <S>, hinting at affrication / assibilation, i.e., <X> = /s(s)/ due to /ks/ > /ss/) and <INDIC(C)IO> (hinting at the merger of /tj/ and /kj/ in the sibilant / affricate outcome). Such hypercorrected spellings, which are found in inscriptions of the 6th – 7th century AD, mainly from *Gallia Narbonensis*, are typical also of Merovingian Latin. However, the spelling <AVTIO>, which is found in much earlier inscriptions (1st century AD), is likely to hint at the previously described -kt- > -t- process, consistently with the high frequency of the <t> spelling in related words such as *autor* and *autoritas*, as well as personal names such as *Adautus*, *Autus*.

- (5) The /nkt/ cluster, as is known, undergoes two main treatments in Substandard Latin, i.e., /kt/ (5a-b), with the drop of C₁ (which is traditionally considered a “rustic” feature, cf. Mancini 1998; De Angelis, 2016) and /nt/ (5e-f), with the drop of C₂ (*sanctus* > *santus*), which is the form quantitatively most represented and is a Pan-Romance development. This phonological process can be traced back since the reconstructed phase (e.g., **quinctus* > *quintus*), with following restoration of the nasal. In parallel to these main outcomes, we can find also some marginal phenomena, partially comparable to the treatment of /kt/, i.e. sonorization <ngt> (5d), proceeding towards lenition (and therefore the /nt/ outcomes), and

epenthesis (5g). Moreover, the outcome /nkt/ > /kt/ undergoes the same processes as primary /kt/, i.e., sonorization (5c) and drop of /k/ (1h), possibly suggesting the evolutionary path /nkt/ > /kt/ > /t/. However, it is also conceivable that forms such as <SATO>, instead of hinting at /nkt/ > /kt/ > /t/, are to be interpreted as particular spellings with the nasal left unmarked.

In the first instance, we may note that the treatment of intervocalic /kt/ seems to follow two main directrices, which run almost simultaneously:

Lenition: -kt- > -t- (BC 1st + ?)

-kt- > -tt- (1st AD +) (<CTT> ? 1st AD +)

-kt- > -gt- (1st AD +)

-kt- > -xt- / -ht- (5th AD+; Celtic interference?)

Fortition: -kt- > -kVt- (1st AD +)

<CCT>? (1st AD +)

We shall return to the phonological analysis in § 4.2.3, after having discussed the collected forms.

4.2.1 Some problematical lemmata

We shall examine some problematical lemmata showing the -kt- > -t- treatment. Some of them present uncertain etymologies and for this reason, it is not possible to ascertain which phonological process is likely to be involved to explain the attested variants. In other cases, many elements point at a -kt- > -t- treatment that, though superficially identical to the examined Latin phenomenon, is rather related to analogous processes among the Celtic languages.

4.2.1.1 Celtic phonology ?

The forms hereby discussed have been programmatically excluded from the estimates presented in TABLE 4.1 (limited to the <t> spelling). However, for the sake of completeness, it is worth presenting such data, partly because they complete the previously discussed treatment of *-kt- among the Celtic languages (notably Celtiberian), and partly because these onomastic formations show also spelling variants that hint at Latin phonological processes (i.e. -kt- > -tt-).

- The onomastic type *Ambactus* is widely attested among Latin inscriptions. We can find different variants of this name, i.e., with the drop of /k/ (*Ambatus*), with total assimilation (*Ambattus*), and with fricativization (*Ambaxtus*). In TABLE 4.3 the quantitative projections of the attested variants with reference also to their distribution across time and space, are presented.

<i>Ambactus</i> (and derivatives)			
AMBACT-	AMBAT-	AMBATT-	AMBAX-
5	111	2	2
I AD +	II BC +	II AD	II-III AD
1 <i>Belgica</i>	80 <i>Hispania Citerior</i>	2 <i>Roma</i>	2 <i>Germania superior</i>
1 <i>Latium et Campania / Regio I</i>	26 <i>Lusitania</i>		
1 <i>Dalmatia</i>	2 <i>Pannonia superior</i>		
1 <i>Germania Inferior</i>	1 <i>Germania superior</i>		
1 <i>Roma</i>	1 <i>Latium et Campania / Regio I</i>		
	1 <i>Roma</i>		

TABLE 4.35 *Spelling variants of Ambactus*

This personal name is probably to be related to Gaulish *ambactus*, which is attested in Latin since Ennius (A. 605) with the meaning ‘servant’ (*ambactus* < **amb(i)-akto-s*, cf. *amaeth* ‘servant’), comparable, as for the first element of the compound and semantics, to Latin *anculus* (< **ambi-k^(w)olo-s*) and to the rare verb *ampruō* (< *ambi-drewo-* ‘to execute a figure or movement’). The

form *ambactus* is defined as *vox gallica* among numerous sources (cf. P. FEST. 4,13) and Latin probably borrowed it around the early mid-Republican age.

The variant *Ambactus* is attested only 5 times, since the 1st century AD, in different provinces of the Empire. The form with total assimilation *Ambattus* is attested only 2 times, exclusively at Rome, around the 2nd century AD. The form with <XT>, suggesting a process of fricativization, is attested between the 2nd and 3rd century AD in *Germania superior*. Another form, i.e., <AMBAXIVS> may hint at either a process of fricativization (/ambaxtjus/) or to the assibilation of /ktj/ (/ktj/ > /tj/ > /sj/, with <X> = /s/).

The variant *Ambatus* is widely attested among inscriptions from the Iberian Peninsula, wherein it can be found also the form *Ambadus* (*CIL* 2, 5709; *AE* 1998, 772), hinting at a further process of lenition (-kt- > -t- > -d-). The earliest attestations date back to the 2nd century BC. Notably, this name is also attested in the Latin sentence introducing one of the few available Lusitanian texts (*MLH* IV L.2.1 = *CIL* II, 738-739). An early attestation (1st century BC) is found also in *Latium et Campania / Regio I (Minturnae)*. Other attestations are found in Eastern Europe (inscriptions recorded on *EDCS* display only three instances of *Ambatus* from *Pannonia superior* and *Germania superior*. Yet, the *OPEL* s.v. shows even 17 forms of *Ambatus* from these areas). Given the peculiar geographical distribution of the form *Ambatus*, it is conceivable that the -kt- > -t- treatment reflects Celtiberian phonology (cf. Palomar Lapesa, 1957; Sevilla, 1978). For this reason, we have decided to consider the form *Ambatus* apart from the examined spelling variant <t> for /kt/.

- The personal name of Celtic origin *Rectugenus* (cf. above § 4.1.2) is attested in Latin inscriptions both with <CT> (2 attestations: *CIL* 2, 6294 and *CIL* 2, 2907) and with the omission of <C> (7 attestations).¹⁹⁹ These two variants are attested in the Iberian Peninsula. Gallo-Latin texts, as is known, widely attest the variant <REXTVGENOS> (e.g. *CIL* 13, 10015, 85b = *CAG*-44, p 14), whereas in *Pannonia superior* we can find the unique attestation <REITVGENOS> (*CIL* 3, 4368). Similar to the form *Ambatus*, we may suppose that the form *Retugenos* from the Iberian Peninsula hint a Celtiberian phonological process, i.e. -kt- > -t-. For this reason, we have decided to consider the form *Retugenus* apart from the examined spelling variant <t> for /kt/.

¹⁹⁹ *CIL* 2, 02324; *CIL* 2-13, 123; *CIL* 2-13, 829c; *Lucentum*-2009-175,3; *Lucentum*-2009-175,4; *Lucentum*-2009-175,5; *Lucentum*-2009-176,5.

4.2.1.2 Uncertain etymologies

We shall discuss a series of onomastic types potentially or seemingly showing the *-kt-* > *-t-* treatment. Some of these forms have been included in the previously introduced general estimates of the <t> spelling.

- The *nomen gentile* *Otacilius*, assuming it is not related to *octo*, is the original and most widespread form (ca. 259 occurrences, from the 2nd c. BC; cf. Schulze 1904, p. 131; Solin & Salomies 1994, p. 134). Since the 3rd century AD, we may note both the variants *Octacilius* (5 attestations) and *Ottacilius* (5 attestations). Therefore, we may suppose that, before the 3rd century AD, Latin speakers had reanalyzed *Otacilius* as *Octacilius*, due to hypercorrection of the *-kt-* > *-t-* process, and that subsequently *Octacilius* had undergone a further process of total assimilation *-kt-* > *-tt-*. Manuscript tradition shows further evidence of the alternation *Otacilius* / *Octacilius*. Our data include the variants *Octacilius* and *Ottacilius*.
- Inscriptions from *Venetia et Histria/Regio IX*, mostly from Aquileia, show 9 attestations of the *gentilicium* *Fruticius*. The *gens* *Fruticia* belonged to the upper-class of Aquileia of the late Republican period, after the social war, and *Marcus Fruticius*, mentioned in *CIL* 5, 3339 and *CIL* 5, 989 (50-26 BC), became also a member of the Senate (cf. Bandelli 1983; Bispham 2007, p. 294). Hypothetically, the form *Fruticius* may be a patronymic from *Fructus* / *Fructius*, which is widely attested among Latin inscriptions, including inscriptions from *Venetia et Histria / Regio IX*. Also, it is worth noticing that the name *Fruti* GEN.SG. (< *Fructi* ?) is found in one inscription from *Carnuntum* (*CIL* 3,11220), referring to a man from *Patavium*. The guesswork that *Fruticius* implies a **Fruticius* may be further corroborated by the several instances of <t> spellings involving the lexeme FRUCT- from the 1st century AD. However, we must admit that the hypothetical **Fruticius* is never attested. Moreover, the fact that this name is peculiar of Aquileia and that the onomastic form *vrutana.i* DAT.SG. (Es 86) is documented in Venetic (cf. Untermann 1961, pp. 135-136; Pellegrini & Prosdocimi 1967, p. 97) makes it plausible that the starting productive basis was *frut-* rather than *fruct-*, unless one attempts to attribute this alleged *-kt-* > *-t-* treatment to a not further assertable Venetic substratum. These forms have been included in the collected data, with the caveats presented so far.
- That the forms *Vitor*, *Vitorius*, and the like imply a development from *Victor*, *Victorius* is not that straightforward. This problem, which has not been paid much attention so far, is widely debated among epigraphists and scholars of onomastics (cf. Roscini 2012, pp. 252-255). Schulze (1904 pp.

334-336) had already stressed that the *gentilicium* *Vitorius*, notably widespread in *Umbria* / *Regio VI*, as well as the *cognomen* *Vitor* (typical of late Republican inscriptions) had been erroneously interpreted as variants of *Victorius* and *Victor*. Rather, they should be connected to *vītor* ‘wicker-worker’ (cf. *vīcō* ‘to plait, weave’). Examples of *vītor* are certainly attested at least in two inscriptions, wherein the deceased is unequivocally commemorated with engravings representing the tools of the trade, as is shown in FIGURE 4.1 and 4.2.



FIGURE 4.20 SUPIT-18-A, 26; Amelia (BC 27 – 14 AD)



FIGURE 4.21 AE 1940, 8; Vicetia (31-70 AD)

At this point, a knot difficult to unravel clearly emerges. By accepting the existence of a *gens Vitoria* and the trade *cognomen Vitor*, to what extent is it possible to distinguish these forms from those potentially attesting to variants of *Victoria* and *Victor*, equally representing a *gentilicium* and a *cognomen* (though fairly much more attested)? The first problem concerns the criteria adopted by the editors and the annotators of online sources. As a matter of fact, forms such as <VITOR(-)> are edited either *Vitor*- as such of *Vi(c)tor*-, with no further remarks about the criteria for distinguishing the *gentilicia* *Vitorius* and *Victorius*. A possible way is a thorough scrutiny of the inscriptions showing <VITOR(-)>, combining contextual, onomastic and prosopographic clues, though in most cases such a distinction is hardly feasible. However, a mere probabilistic and statistical method could be followed, in case the text does not provide compelling evidence: personal names formed via VICTOR(-) are very numerous, especially during the Imperial age, therefore, it is more conceivable that, at least from the 1st-2nd century AD, the forms <VITOR(-)> imply a development from *Victor*-. Conversely, attestations dating back the late republican age are less clear, since the *gentilicium* *Vitorius* and the *cognomen* *Vitor* are attested just in those areas wherein the designation *vītor* is found.

We have decided to include in the collected data all the instances of *Vitor*(-), with the exception of those forms clearly hinting at *vītor* ‘wicker-worker’. In the next section the list of the collected forms is presented, with some remarks following whenever necessary. The linguistic analysis will be presented in § 4.2.4.

4.2.2 Potentially relevant forms

In this section the potentially relevant forms showing spelling variants of *-kt-* will be presented. Such forms have been arranged in chronological order and each synchronic cut distinguishes the spellings according to the order shown in TABLE 4.1. (limiting the list to the cases (1a-h), with the exception of (1g), (2a), (3a), (4a) if hinting at *-kt-* > *-t-* (e.g. *auctio* > *autio*). Each problematical form is marked with an asterisk, with a brief discussion, whenever necessary.

4.2.2.1. 1st century BC

(1a) <t> *pro* /kt/

1. VITORIVS* (CL *Victorius?*), CIL 10, 5916 = CIL 1, 1520 (p 1002) = D 6257 = ILLRP 534; 100-51 BC; Latium et Campania / Regio I: Anagnia; material: *marmor*; *titulus insculptus*. *Vitorius* is a *nomen gentile* of Anagni upper-class. This name is recorded as such (i.e. with no further proposal of amendment) on EDCS, EDR.
2. CONDVTA* (CL *conducta*), CIL 1, 593 (p 724, 739, 833, 916) = D 6085 (p 186);²⁰⁰ 45 BC; Bruttium et Lucania / Regio III: Heraclea; *leges*; *ordo decurionum*; *ordo senatorius*; *sacerdotes pagani*; material: *aes*. The reading <CONDVTA> in the *Lex Iulia Municipalis* is uncertain, and could be due to a mere scribal error. Note, moreover, that printed as well as on-line editions disagree as for the notation of the form. EDCS-20000229 shows <CONDV(C)TA>; similarly, Crawford (1996, II, p. 355) reports <CONDV<C>TA>, both implying the omission of <C>; EDR165681 shows <CONDVITA> but probably this is a mere error, since the edition the annotator refers to is Crawford (1996).
3. VITOR* (CL *Victor?*), CIL 10, 2911; 40-1 BC; Latium et Campania / Regio I: Puteoli; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*. <VITOR> is added to the name of the freedman C RAVIVS MENANDER. The appointment *vītor* is more conceivable.
4. VITOR* (CL *Victor?*), ERAssisi 10 = SupIt-23-A, 19 = AE 1989, 290; 7 BC; Umbria Regio VI: Asisium; *seviri Augustales*; *tituli operum*; N.B.: <VITOR>. *Vitor* is a *cognomen* (T VISTINIVS VITOR). *Vitor* trade *cognomen* (cf. Roscini, 2012, pp. 252-255).

²⁰⁰ Further bibliography: Freis 41 = EAOR-3, 1 = Campedelli 79 = Historika-2016-83 = Chiron-2004-187 = Chiron-2008-47 = AE 1991, 522 = AE 1994, 540 = AE 1995, +34 = AE 1997, 418 = AE 2003, +15 = AE 2004, +126 = AE 2008, +43.

5. FRVTICIVS* (CL **Fructicius?*), CIL 5, 3339 (p 1095) = CIL 1, 826 (p 956) = InscrAqu-01, 30 = ILLRP, 440; 50-26 BC; Venetia et Histria / Regio X: Aquileia; *ordo senatorius*; *tituli sepulcrales*; material: stone; *titulus insculptus*. Cf. the above discussion in § 4.2.1.2.
6. FRVTICIVS* (CL **Fructicius?*), CIL 5, 3339 (p 1095) = CIL 1, 826 (p 956) = InscrAqu-01, 30 = ILLRP, 440; 50-26 BC; Venetia et Histria / Regio X: Aquileia; *ordo senatorius*; *tituli sepulcrales*; material: stone; *titulus insculptus*. Cf. the above discussion in § 4.2.1.2.
7. FRVTICIVS* (CL **Fructicius?*), CIL 5, 989; 50-31 BC; Venetia et Histria / Regio X: Aquileia; *ordo decurionum*; *tituli sepulcrales*; material: stone; *titulus insculptus*; missing inscription. Cf. the above discussion in § 4.2.1.2.

(1e) <cit> / <cet> *pro* /kt/

1. FACITO* (CL *facta?*), CIL II-5, 1022 = CIL II, 5439 (p 1038) = CIL II, 5439a = CIL I, 594 (p 724, 833, 916) = CILA-2-2, 611 = D 6087 = Freis 42 = Hiberia p 199 = Crawford-1996, 25 = EAOR-7, 1 = AE 1946, 123 = AE 1946, +163 = AE 1950,50 = AE 1951,32 = AE 1951, +48 = AE 1952, +120 = AE 1997, 826 = AE 1998, 742 = AE 2006, +463 = AE 2016, +35 = Tyche-2018-145, 44 BC; Baetica: Urso; *tituli sacri*, *tituli sepulcrales*; material: *aes*.
2. FACITA* (CL *facta?*) [same inscription as 1]

Lex coloniae Genetivae Iuliae Ursonensis: the phrase *sententia per tabella facta* occurs two times, i.e. <SENTEN[T] PER TABELLAM FACITO> and <SENTENTIA PER TABELLAM FACITA>. Syntactically, the ppp. *facta* is expected. For the explanation of such deviations, it is not necessary assuming a phonological process (i.e. insertion). In the first case, <FACITO> may be explained as a mechanical error, since the imperative form *facito* occurs 27 times; likewise, the form <FACITA> could be explained as the result of a confusion between *facito* and *facta*.

4.2.2.2. BC 1st – 1st century AD

(1a) <t> *pro* /kt/

1. FATA* (CL *facta?*), CIL 4, 1397; BC 199 - AD 79?; Latium et Campania / Regio I; Pompei; material: stone; missing inscription.

This form is traditionally acknowledged as an example of the treatment *-kt-* > *-t-*. Nonetheless, in my view, the context is too fragmentary, nor there is metrical evidence, to ascertain that the underlying form is actually *facta*. Indeed, this is possibly a sepulchral inscription, and that *fatum*, especially in a phrase such as PER OMNIA FATA, stands for *fata* is plausible.

8. VITORIAE* (CL *Victoriae*?), CIL VI, 7671 (p 3432); 199 BC - 79 AD; Roma; missing inscription? *Gentilicium* of a freedwoman: VITORIAE EROTARIO (DAT.SG.). If *Vitoria* was the original name of the slave, we may guess *Victoria* (e.g. as a calque of a Greek name formed from *νικη-*), but *Vitoria* refers to the *gens* of the previous owners, therefore every hypothesis is unfeasible. This name is recorded as such (i.e. with no further proposal of amendment) on EDCS, EDR.
9. VITORIH* (CL *Victoriae*?), CIL 9, 2579 (p 1038) = ILBovianum 44; 50 BC - 30 AD; Samnium /Regio IV: Undecimanorum; *liberti*; *tituli sepulcrales*; missing inscription. <H> = <ae> ([e/ε]). <VITORIH> with *I longa*. Same remarks as 8. This name is recorded as such (i.e. with no further proposal of amendment) on EDCS, EDR.
10. VITORIVS* (CL *Victorius*?), CIL 10, 1277 = D 6346; BC 40 - 20 AD; Latium et Campania / Regio I: Nola; missing inscription. *Gentilicium* (T VITORIVS). This name is recorded as such (i.e. with no further proposal of amendment) on EDCS, EDR.
11. VITOR* (*vitor!*), SupIt-18-A, 26 = AE 1996, 646 = AE 1999, +607; 27 BC - 14 AD; Umbria / Regio VI: Ameria; *tituli sepulcrales*; material: stone; *titulus insculptus*. See PICTURE 4.1.
12. VITOR[IO* (CL *Victorio*?), CIL 5, 1844a = IulCarnicum-1, 18 = SupIt-12-IC, 15 = IulCarnicum-2, 52 = AE 1994,683; 25 BC - 25 AD; Venetia et Histria / Regio X: Carnicum; material: stone; *titulus insculptus*. *Gentilicium* (C VITORIO). This name is recorded as such (i.e. with no further proposal of amendment) on EDCS, EDR.

4.2.2.3. 1st century AD

(1a) <t> *pro* /kt/

1. AVTORIT (CL *auctoritate*), EConfines 68 = AE 1969/70; 696; 69-79 AD; Numidia: Ain Abid; *miliaria*; material: stone.
2. CONVITORES (CL *convictores*), CIL 4, 10520; 1-79 AD; Latium et Campania Regio: Herculaneum; material: *tectorium*, graffito.

13. EPITETVS (CL *Epictetus*), NSA-1923-390; 51-100 AD; Roma; *tituli sepulcrales*; material: stone; *titulus insculptus*.
3. FATA (CL *facta*), CIL 4, 3340,38; 52-62 AD; Latium et Campania / Regio I: Pompei; business tablet; material: wax tablet. <FATA> occurs in the phrase, though fragmentary, *auctione fata* (<[A]V[C]T(I)O[NE] FATA>). Therefore, it is conceivable that <FATA> is *facta*.
4. FRVTIC[I]* (CL **Fructici*), CIL 5, 1219 = Pais 1119e = AE 2013, +541; 31-70 AD; Venetia et Histria / Regio X: Aquileia; *libertilibertae*; *tituli operum*; *tituli sepulcrales*; material: stone; *titulus insculptus*. Cf. the above discussion in § 4.2.1.2.
5. FRVTIC[I]* (CL **Fructici*), CIL 5, 8285 = InscrAqu-2,2869; 31-70 AD; Venetia et Histria / Regio X: Aquileia; *libertilibertae*; *tituli sepulcrales*; material: stone; missing inscription. Cf. the above discussion in § 4.2.1.2.
6. OTAVS (CL *Octavius*), CIL 4, 4870 (p 705); 1-79 AD; Latium et Campania / Regio I: Pompei; *liberti*; *tituli possessionis*; material: *tectorium*.
7. OTOGE[NTOS] (CL *octogentos*), CIL 4, 3340,26 (p 454), 52-62 AD; Latium et Campania / Regio I: Pompei, material: *lignum*.
8. V]ITRIC[IS(?) (CL *Victricis*), Estremadure 1 = AE 2014, 587; 71-79 AD; Lusitania: Emerita; *ordo senatorius*; *tituli honorarii*; material: stone; *titulus insculptus*.
14. VITOR* (*vitor!*), AE 1940, 8 = AE 1947, +40; 31-70 AD; Venetia et Histria / Regio X: Vicetia; *tituli sepulcrales*; material: stone; *titulus insculptus*. Cf. PICTURE 4.3
9. VITORES* (CL *vitor!*), CIL 14, 244 (p 481, 773) [Ces] = CIL 14, 245 [Fad, Fas] = CIL 14, 4531 [A] = CIL 14, 4532 [Ba] = CIL 14, 4532a [Bb] = CIL 14, 4533 [Cbd, Cbs];²⁰¹ BC 49 – 175 AD; Latium et Campania / Regio I: Ostia Antica; *leges*, *ordo decurionum*; *ordo senatorius*; *tituli operum*; *tituli sacri*; material: stone. *Fasti Ostienses*: *pars circi inter vitore arsis* (referring to the fire of 36 AD; cf. Mingaud, 1992).
10. VITORI* (CL *Victori?*), InscrAqu-2, 2545; 1-50 AD; Venetia et Histria / Regio X: Aquileia; *tituli operum*; *tituli sepulcrales*; material: stone; *titulus insculptus*. *Nome gentile Vitorius?* This name is recorded as such (i.e. with no further proposal of amendment) on *EDCS*, *EDR*.
11. VITORI (CL *Victori*), Libitina-2004, 18 = AE 2004, 223; 69-100 AD; Roma; *titulus sepulcralis*; material: *marmor*; *titulus insculptus*. Name of a freedman. Though this name is recorded as such (i.e. with no further proposal of amendment) on *EDCS*, *EDR*, it is conceivable that <VITORI> stands for *Victori*, since the other freedmen mentioned in the epitaph bear names such as *Nicephorus* and *Nicenis*.

²⁰¹ Cf. *EDCS* code EDCS-20200012 for further bibliography.

15. VITORIA* (CL *Victoria*), CIL 2-14, 106 = CIL 2,3658 (p LXXIX) = CIL 2-14, p 994 = IREdeta-1, 92 = IREdeta-2, 126; 1-100 AD; Hispania citerior: Valentia; *tituli sepulcrales*; material: stone. *Nome gentile*. This name is recorded as such (i.e. with no further proposal of amendment) on *EDCS*, *EDH*, *HEP*.
16. VITORIAE* (CL *Victoriae*); GIF-1960-109; 71-100 AD; Latium et Campania / Regio I: Sublaqueum; *tituli sepulcrales*; material: stone; *titulus insculptus*. *Nome gentile*. This name is recorded as such (i.e. with no further proposal of amendment) on *EDCS*, *EDR*.
12. VITORIO* (CL *Victorio*), ILB 60; 69-96 AD; Belgica: Treveri; *tituli sepulcrales*; material: stone. *Nomen gentile*. This name is recorded as such (i.e. with no further proposal of amendment) on *EDCS*, *EDR*.
17. VITORIO* (CL *Victorio*), Vivo 44; 1-30 AD; Roma; material: *marmor*; *titulus insculptus*. *Nomen gentile* (freedman). This name is recorded as such (i.e. with no further proposal of amendment) on *EDCS*, *EDR*.
18. VITORIVS* (CL *Victorius*), CIL 6, 8104 (p 3454); 51-100 AD; Roma; *tituli sepulcrales*; material: stone; *titulus insculptus*. *Nomen gentile* (freedman). This name is recorded as such (i.e. with no further proposal of amendment) on *EDCS*, *EDR*.
13. VITORIVS* (CL *Victorius*), same inscription as 9. This name is recorded as such (i.e. with no further proposal of amendment) on *EDCS*, *EDR*.

(1b) <tt> pro /kt/

1. OTTIA* (CL *Octia?*), SupIt-18-R, 45 = AE 2000, 440; 31-70 AD; Samnium / Regio IV: Reate; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*; missing inscription. *Nome gentile* (of a freedwoman). *Ottia* < *Octia* (cf. *Octius* CIL 8, 6479) or *Ottia* < *Otia* [ot.ja]? (cf. *Otius* CIL 11, 3613) (unless *Otius* itself implies *Otius* < *Octius*, i.e. -kt- > -t-).

2.

(1e) <cit> / <cet> pro /kt/

1. RECETE (CL *recte*), TPSulp 52 = TPN 44 = AE 1972, 87 = AE 1980, +47 = AE 1992, +272 = AE 1999, +446c = Camodeca-2018, p 191; 37 AD; Latium et Campania / Regio I: Pompei; *leges*; *tituli operum*; material: *lignum*. For anaptyxis in *Novius Eunus*, cf. Adams (1990, p. 232; 2003, p. 157).

(1h) orthographical geminations: <cct>, <ctt> pro /kt/

1. CONLACCTIO (CL *collacteo*), Tellenae p 149 = AE 1967, 59; 1-100 AD; Latium et Campania / Regio I: Tellenae. Cf. PICTURE 4.3

(2a) <ct> pro /t/ (inverse spelling)

1. FACTO (CL *fato*), CIL 5, 3415 = CLE 1095 = D 6699 = Grabalt 171 = AE 2002, +563; 51-100 AD; Venetia et Histria / Regio X: Verona; *carmina*; *sacerdotes pagani*; *tituli sacri*; *tituli sepulcrales*; material: stone; *titulus insculptus*. Hexameter: <PARVA TAMEN NOSTRO REMANENT SOLACIA FACTO>: *facto* = ~~facto~~ ^f ~~x~~ (*fātum* V: = *fāctum* VC).
2. MAGISTRACTVS* (CL *magistratus*), SupIt-13-V, 1 = Freis 68 = AE 1947, 44 = AE 1949, 24 = AE 1981, 390 = AE 2000, 586; 1-100 AD; Liguria / Regio IX: Vardacate; *leges*; *ordo decurionum*; material: *aes*. Mechanical error? (note *magistratibus* within the same inscription), analogy with *praefectus*?

(4d) <ti> pro /ktj/

1. AVTION (CL *auctionem*), CIL 4, 3340,65; 52-62 AD; Latium et Campania / Regio I: Pompei.
2. AVTION[E] (CL *auctione*), CIL 4, 3340,33; 52-62 AD; Latium et Campania / Regio I: Pompei.
3. AVTIONE (CL *auctionem*), CIL 4, 3340,26 (p 454) 52-62 AD, Latium et Campania / Regio I: Pompei
4. AVTIONUM (CL *auctionum*), CIL 6, 9035a; Roma; *officium professio*; *tituli sepulcrales*.

4.2.2.3. 1st – 2nd century AD

(1a) <t> pro /kt/

1. FRVTI* (CL *Fructi*?), CIL 3, 11220 = CSIR-Oe-1-4, 477 = Legio-XV-Apo 93 = MaCarnuntum 229 = AEA 2003, +2; 98-117 AD; Pannonia superior: Carnuntum; milites; *tituli sepulcrales*; material: stone; *titulus insculptus*. Cf. the above discussion in § 4.2.1.2.
2. FRVTICIA* (CL **Fructicia*), CIL 5, 796 (p 1025, 1070) = InscrAqu-1, 291 = D 4101 = CCCA-4, 220 = Epigrafia-2, p 751 = RSH 61; 76-125 AD; Venetia et Histria / Regio X: Aquileia; mulieres; *tituli sacri*; *tria nomina*; *vir*. Cf. the above discussion in § 4.2.1.2.

3. FRVTICIAE (CL **Fructiciae*), CIL 5, 794 (p 1024) = InscrAqu-1, 278 = D 3947 = IEAquil 244 = RSH59; 76-125 AD; Venetia et Histria Regio X: Aquileia; *tituli sacri*; material: stone. Cf. the above discussion in § 4.2.1.2.
4. FRVTOSA (CL *Fructuosa*), CIL 8, 387 = ILTun 419 = MEFR-1912-166 = Haidra-5, 57 = AntAfr-1973-13; 1-130 AD; Africa proconsularis: Ammaedara; *tituli sepulcrales*; missing inscription.
5. NVTVRNA (CL *Nocturna*), AE, 1969/70, 430 = ILingons, 525; 71-130 AD; Belgica: Andemantunnum; *tituli sepulcrales*; material: stone.
6. PROTOTETVS* (CL *Proctotetus*), CIL 6, 20238 (p 3524) = CIL 11, *101,091; 51-150 AD; Roma; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*. N.B. <VICTORIA> within the same inscription. Morphological variant?
7. TRATA (CL *tracta*), ZPE-101-283 = HEp 1995, 82;²⁰² 1-200 AD; Hispania citerior: Saguntum; *defixiones*, *tituli operum*; material: *plumbum*.
8. VITORIA* (CL *Victoria?*), CIL 11, 4372; 1-200 AD; Umbria / Regio VI: Ameria; *tituli sepulcrales*; material: stone; *titulus insculptus*. *Gens Vitoria?* This name is recorded as such (i.e. with no further proposal of amendment) on EDCS, EDR.
9. VITORIA* (CL *Victoria?*), CIL 3, 2429; 1-150 AD; Dalmatia: Salona; *liberti*; *tituli sepulcrales*. This name is recorded as such (i.e. with no further proposal of amendment) on EDCS, EDH.
10. VITORIA* (CL *Victoria?*), CIL 9, 5108; 51-200 AD; Picenum Regio V: Interamnina Praetuttiorum; *liberti*; *tituli sepulcrales*; material: stone; *titulus insculptus*. *Gentilium* of a freedwoman. This name is recorded as such (i.e. with no further proposal of amendment) on EDCS, EDH.
11. VITORIA* (CL *Victoria*), CIL 9, 899 = Luceria 33 = AE 2001, +876; 71-130 AD; Apulia et Calabria Regio II: Luceria; *tituli sepulcrales*; material: stone; *titulus insculptus*. This name is recorded as such (i.e. with no further proposal of amendment) on EDCS, EDH.
12. VITORIAE* (CL *Victoriae?*); ILLPRON 1048 = Gerstl 301 = AGN-1, 154 = AEA 1993/98, 130 = AEA 1999/00, +24 = AEA 199900, +85 = AEA 2001/02, +27 = AEA 2006, +5 = AEA 2007, +69 = AEA 2008, +40 = AEA 2008, +54 = AEA 201314, +12 = AE 1989, 587 = AE 1996, 1190; 71-130 AD; Noricum: Aguntum; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*. This name is recorded as such on EDCS, EDH.
13. VITORIAE* (CL *Victoriae?*), CIL 6, 29099 (p 3536) = AnalEpi p 19; 51-200 AD; Roma; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*. *Gentilium* of a freedwoman. This name is recorded as such on EDCS, EDR.

²⁰² Further bibliography: CIL 2-14, 757b = CIL 2-14, p 1037 = IRSAT 15 = Kropp-2-1-3-2 = HEp 1995, 823 = HEp 2002, 469 = AE 1994, 1073 = AE 2010, +108.

14. VITORIAE* (CL *Victoriae*?). Same inscription as 13.
15. VITORIAE* (CL *Victoriae*), SEBarc-13, p 62 = AE 1978, 106 = AE 2015, 310 = EpRom 2015_01_021; 1-150 AD; Latium et Campania / Regio I: Aquinum; *seviri Augustales*; *tituli sepulcrales*; material: stone; *titulus insculptus*. This name is recorded as such on EDCS, EDR
16. VITORIO* (CL *Victorio*?). Same inscription as 8.
17. VITORIO* (CL *Victorio*?). Same inscription as 9.
18. VITORIO* (CL *Victorio*?). Same inscription as 12.
19. VITORIVS* (CL *Victorius*?). Same inscription as 18. *Gentilicium*. This name is recorded as such on EDCS, EDR.
20. VITORIVS* (CL *Victorius*?). Same inscription as 15.

(1b) <tt> *pro* /kt/

1. AEPITTETUS (CL *Epictetus*), CIL 6, 17213 (p 3914); 1-200 AD; Roma; *tituli sepulcrales*. This is the earliest instance of *-kt-* > *-tt-*. Cf. PICTURE 4.4

(1e) <cit> / <cet> *pro* /kt/

1. INVICITI (CL *invicti*), ILAlg-2-2, 4400; Africa proconsularis: Thignica; *servi*; material: stone; missing inscription?
2. SPECETATVS, CIL III, 14367,2 = ILLPRON 1855 = RICEleia 334; 51-200 AD; Noricum: Celeia; *tituli sepulcrales*; material: stone.
3. VICITOR, IAM-2-2, 647; Mauretania: Volubilis; *tituli sepulcrales*; missing inscription?

(1h) Orthographical geminations: <cct>, <ctt> *pro* /kt/

1. RESPECCTO (CL *Respecto*), CIL 6, 39078; 51-200 AD; Roma; *tituli sepulcrales*. *Cognomen*.
2. RESPECCTO (CL *Respecto*). Same inscription as 1.

3. VICTORIAM (CL *Victoriam*), ZPE-149-261 = SEG-54, 1011 = AE 2004, 853 = BritRom-12, 4; 75-125 AD; Britannia: Billingford; *tituli possessionis*. Greek script (<YIKTΘΩPIAM>).

4.2.2.4. 2nd century AD

(1a) <t> *pro* /kt/

1. ADAVTAE (CL *Adauctae*), CIL 9, 3252 (p 1427); 101-200 AD; Samnium/Regio IV: Corfinium; *tituli sepulcrales*; material: stone; missing inscription.
2. ADAVTVS (CL *Adauctus*), CIL 14, 4569 = NSA-1927-381 = Ostia 17 = AE 1928, 123; 198 AD; Latium et Campania / Regio I: Ostia Antica; material: marmor.
3. AVTORITATE (CL *auctoritate*), CIL 6, 31553 (p 3796, 4362) = D 05932; 160-161 AD; Roma; *tituli operum*; material: stone.
4. CONVITRICI (CL *convictrici*), CECapitol 50 = AE 1990, 91; 161-200 AD; Roma; *liberti; servi; tituli sepulcrales*; material: marmor, *titulus insculptus*.
5. EXATI (CL *Exacti*), ISIS 35; 161-170 AD; Latium et Campania / Regio I: Portus; *tituli sepulcrales*; missing inscription
6. FATVS (CL *factus*), Philippi 522 = IDRE-2, 363 = CIPh-2-01, 94 = Afrique p 725 = ZPE-80-165 = AE 196970, 583 = AE 1974, 589 = AE 1985, +721; 118-150 AD; Macedonia: Philippi; *milites; ordo senatorius; tituli sepulcrales*; material: stone; *titulus insculptus*; N.B. FACTVS DVPLI(CARIVS) [...] ET FATVS EXPLORATOR [...] FACTVS DECVRIO..
7. NOTVRIN[V]S (CL *Nocturninus*), CIL 13, 5841 = CIL 13, 11588 = ILingons 528 = CAG-52-02, p 118; 101-200 AD; Belgica | Germania superior: Andematunum; *tituli sepulcrales*; material: stone.
8. OTAVI (CL *Octavi*), CIRPZamora,199; HEp 1993, 413; 101-200 AD; Hispania citerior: Torregamones; *tituli sepulcrales*; material: stone.
9. OTAVIO (CL *Octavio*), CIL 9, 154; 101-200 AD; Apulia et Calabria / Regio II: Brundisium; *tituli sepulcrales*; material: stone; missing inscription.
10. OTAVS (CL *Octavius*), CPL 110 = ChLA 43 1242 = Rom.Mil.Rec. 34; 98-127 AD; Egypt; material: papyrus; list of soldiers.
11. REDVTA (CL *Reducta*), ILAlg-2-1, 3166; 101-200 AD; Numidia: Celtianis; *tituli sepulcrales*; material: stone; *titulus insculptus*.

12. TRATORIA (CL *Tractoria*), CIL 5, 3937; 101-200 AD; Venetia et Histria / Regio X: San Giorgio di Valpolicella, Arusnates; *tituli sepulcrales*; missing inscription; N.B. <OCTAVIO>, <OCTAVIVS> within the same inscription.
13. VETVRAE (CL *vecturae*), *Tab. Vindol.* 600; 120-130 AD; material: *lignum*; account and lists.
14. VITO[RI]* (CL *Victori?*), CIL 6, 2080 (p 864, 3261) = CIL 6, 32375 = CFA 69 = D 5031; 119 AD; Roma; *ordo senatorius*; *sacerdotes pagani*; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*. *Gentilicium Vitorius* ? This name is recorded as such on *EDCS*, *EDR*
15. VITO[RIAE]* (CL *Victoriae?*); ILLPRON 353 = Leber 312 = Gerstl 281 = AEA 2005, +15 = AEA 201314, +12; 101-200 AD; Noricum: Pockhorn; *tituli sepulcrales*. *Gentilicium Vitorius* ? This name is recorded as such on *EDCS*, *EDH*.
16. VITOR (CL *Victor*), CIL 6, 3899 (p 3370) = CIL 6, 32709; 101-200 AD; Roma; *liberti*; *tituli sepulcrales*; material: stone; *titulus insculptus*; missing inscription. *Cognomen*.
17. VITOR (CL *Victor*), CIL 8, 18419 = Luciani-2, 12; 101-200 AD; Numidia: Lambaesis; *tituli sepulcrales*; missing inscription(?). *Cognomen*.
18. VITORI* (CL *Victori?*). Same inscription as 14.
19. VITORI* (CL *Victori?*). Same inscription as 14
20. VITORI* (CL *Victori?*). Same inscription as 14.
21. VITORIAE (CL *Victoriae*), CIL 3, 5059 = ILLPRON 1216 = RIS 282; 101-200 AD; Noricum: Noreia; *tituli sepulcrales*; material: stone; *titulus insculptus*. *Gentilicium*. This name is recorded as such on *EDCS*. <Vi(C)TORIA> according to *EDH*.
22. VITORIAE* (CL *Victoriae?*), CIL 9, 900 = Luceria 34 = AE 2001, +876; 151-200 AD; Apulia et Calabria / Regio II: Luceria; *tituli sepulcrales*; material: stone; *titulus insculptus*. *Gentilicium*. This name is recorded as such on *EDCS*, *EDR*.
23. VITORIAE* (CL *Victoriae?*), ILLPRON 353 = Leber 312 = Gerstl 281 = AEA 2005, +15 = AEA 201314, +12; 101-200 AD; Noricum: Pockhorn; *tituli sepulcrales*; material: stone; *titulus insculptus*. *Gens Vitoria?* This name is recorded as such on *EDCS*, *EDH*.
24. VITORINVS (CL *Victorinus*), CIL 3, 5128 = ILLPRON 1966 = RIS 348 = RICeleia 457; 101-200 AD; Noricum: Celeia; *tituli sepulcrales*; material: stone. *Cognomen*.
25. VITORIO* (CL *Victorio?*), Grabherr p 449 = AEA 201314, +12; 131-200 AD; Noricum: Aguntum; *tituli sepulcrales*; material: stone; *titulus insculptus*. *Gens Vitoria?* This name is recorded as such on *EDCS*, *EDR*.

26. VITORIO* (CL *Victorio?*), RMD-1, 9 = RMM 12 = AE 1968, 513; 105 AD; Syria; *diplomata militaria*; *ordo equester*; *ordo senatorius*; *tituli operum*; *tituli sacri*; material: *aes*. *Gens Vitoria* ? This name is recored as such on *EDCS*, *EDH*.
27. VITORIV[S* (CL *Victorius?*), CIL 6, 2078 (p 864, 3261, 3824) = CIL 6, 32374 = CFA 68 = D 5028; 118 AD; Roma; *ordo senatorius*; *sacerdotes pagani*; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*. This name is recorded as such on *EDCS*, *EDR*.
28. VITORIVM* (CL *Victorium?*). Sam inscription as 27.
29. VITORIVM* (CL *Victorium?*), CIL 6, 2079 (p 864, 3261, 3286) = CIL 6, 32378 = CFA 74; 133 AD; Roma; *leges*; *ordo senatorius*; *sacerdotes pagani*; *tituli operum*; *tituli sacri*; material: stone; missing inscription. This name is recorded as such on *EDCS*, *EDR*.
30. VITORIVM* (CL *Victorium?*). Same inscription as 14.
31. VITORIVM* (CL *Victorium?*). Same inscription as 14.
32. VITORIVM* (CL *Victorium?*). Same inscription as 14.
33. VITORIVS* (CL *Victorius?*). Same inscriptions as 29.
34. VITORIVS* (CL *Victorius?*), CIL 6, 2081 (p 864, 3261) = CFA 71; 124 AD; Roma; *ordo senatorius*; *sacerdotes pagani*; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*. This name is recorded as such on *EDCS*, *EDR*.
35. VITORIVS* (CL *Victorius?*). Same inscriptions as 22.
36. VITORIVS* (CL *Victorius?*). Same inscription as 14.
37. VITORIVS* (CL *Victorius?*). Same inscription as 14.
38. VITORIVS* (CL *Victorius?*). Same inscription as 14.
39. VITORIVS* (CL *Victorius?*). Same inscription as 14.
40. VITORIVS* (CL *Victorius?*). Same inscription as 14.
41. VITORIVS (CL *Victorius?*), Grabherr p 449 = AEA 201314, +12; 131-200 AD; Noricum: Aguntum; *mulieres*; *tituli sepulcrales*; material: stone; *titulus insculptus*. This name is recorded as such on *EDCS*, *EDR*. Same inscription as 33.

(1b) <tt> *pro* /kt/

1. A]MBATTI (CL *Ambacti*); 101-200 AD; Roma; *tituli sepulcrales*.

2. VITTORINAE (CL *Victorinae*), CIL 6, 5 (p 4090); 138-170 AD; Roma; *mulieres; tituli sacri*; material: stone; *titulus insculptus*.
3. [AM]BATTO (CL *Ambacto*); CIL 6, 32814 = CIL 6, 32832 = Denkm 285; 101-220 AD; Roma.

(1e) <cit> / <cet> *pro* /kt/

1. [V]ICITVRVM* (CL *victurum*), CEL 142; CPL 251; 100-125 AD; Aegyptus: Alexandria; *private letter*; material: papyrus. Letter of *Claudius Terentianus*. Morphological variant?

(1d) <gt> *pro* /kt/

1. VEGTIG (CL *vegicalis*), IRT 315a = AE 1952, 62 = AE 1954, 183b = AE 2000, +1602 101-200; Africa proconsularis: Lepcis Magna; *tituli sacri*; material: stone; *titulus insculptus*.

(1h) Orthographical gemination: <cct>, <ctt> *pro* /kt/

1. VICCTORINVS (CL *Victorinus*), CIL 11, 5488 (p 1388) = ERAssisi 147; 151-200 AD; Umbria / Regio VI: Asisium; *tituli sepulcrales*.
2. VICTTORIA (CL *Victorianus*), ILAlg-2-1, 2588; 101-200 AD; Numidia: Celtianis; *tituli sepulcrales*. Note: <VICT/TORIA>.

4.2.2.5. 2nd-3rd century AD

(1a) <t> *pro* /kt/

1. ADAVTAE (CL *Adauctae*), ILAlg-1, 1048; 50-229 AD (dated by TM 365107); Africa proconsularis: Thagura, *tituli sepulcrales*; material: stone. N.B. VICTORICVS within the same inscription.
2. ADAVTVS (CL *Adauctus*), CIL 8, 12506 = DefTab 232 = MagAg 51 = Kropp-11-1-1-18; 100- 299 AD; Africa proconsularis, Carthago; *defixio*.

3. ADAVTVS (CL *Adauctus*), CIL 8, 4157; 50-299 AD; Numidia: Lambaesis; *tituli sepulcrales*.
4. ADZETVS (CL *Adiectus*), IAlg-2, 4744 = CIL 8, 18918; 51-300 AD; Numidia: Thibilis; *tituli sepulcrales*
5. AEPITESIS (CL *Epictesis*), CIL 6, 18327; 50-299 AD; Roma; *tituli sepulcrales*.
6. COATOR (CL *coactores*), CIL 5, 4505 = InscrIt-1-5, 297 = D 7557 = Grabalt 193; 50-299 AD; Venetia et Histria / Regio X: Brixia; *tituli sepulcrales*; material: stone; *titulus insculptus*.
7. FRVTILA (CL *Fructilla*), ILTun 1109,24; BC 199 - AD 284?; Africa proconsularis: Carthago; *liberti*.
8. FRVTVOSA (CL *Fructuosa*), CIL VI, 26185 = CIL XI, *101,191; AD 50-299?; Roma; *tituli sepulcrales*; tria nomina; material: stone. Date according to TM 588307.
9. FRVTVOSVS (CL *Fructuosus*), CIL VIII, 11607 = ILTun 00443 = MEFR-1912-167 = Haidra-5, 132; 50-299 AD; Africa proconsularis: Ammaedara; *tituli sepulcrales*; material: stone; *titulus insculptus*.
10. INVITO (CL *invicto*), IIBulg 30; 150-275 AD; Moesia inferior: Oescus; *tituli sacri*. <DEO INVITO>.
11. OTAVIA (CL *Octavia*), CIL 8, 16151; AD 50-299?; Africa proconsularis: Sicca Veneria; *tituli sepulcrales*.
12. OTAVIA (CL *Octavia*), CIL 8, 27096 = MAD 907; 50-299? AD; Africa proconsularis: Thugga; *tituli sepulcrales*.
13. OTAVIA (CL *Octavia*), CIL 8, 548 = CIL 8, 11708; AD 50-299?; Africa proconsularis: Talah; *tituli sepulcrales*.
14. OTEAVIA (CL *Octavia*); CIL 8, 6242 (p 1836) = IAlg-2-3, 9031; 51-300 AD; Numidia: Ain Kerma; *tituli sepulcrales*; material: stone.
15. OTO (CL *octo*), AE 1906, 131; 50-299 AD; Africa proconsularis: Mactaris; *inscriptiones christianae*; *tituli sepulcrales*.
16. RESSPETVS (CL *Respectus*), CIL 5, 1196 = InscrAqu-1, 1072 = IEAquil 105; 50-299 AD; Venetia et Histria / Regio X: Aquileia; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
17. STRVT[ORES] (CL *structores*), CIL 13, 1034 = ILSant 3 = CAG-17-02, p 331; 1-275 AD; Aquitani(c)a: Mediolanum Santonum.
18. VITOR* (CL *Victor?*), AE 2009, 344; 71-130 AD; Aemilia / Regio VIII; *titulis sepulcrales*; material: stone. *Cognomen*. <VITOR>. *vitor?*
19. VITOR (CL *Victor*), CIL 8, 15423 (p 2589); 50-299? AD; Africa proconsularis: Thugga; *tituli sepulcrales*; missing inscription.
20. VITOR (CL *Victor*), CIL 8, 21889 = IAM-2-2, 664; 50-299 AD; Mauretania: Volubilis; *tituli sepulcrales*; missing inscription(?).
21. VITORA (CL *Victoria*), IIAfr 588,182 = MAD 1281; Africa proconsularis: Thugga; *tituli sepulcrales*.

22. VITORI (CL *victori*), CIL 10, 3119; AD 50-299?; Latium et Campania / Regio I: Puteoli; *libertilibertae*; *tituli sepulcrales*; missing inscription.
23. VITORI* (CL *Victori*?), CIL VI, 29096 = CIL X, *1089,214 = CIL XI, *349,3 = IMCCatania 500; AD 50 - 299?; Roma; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*. The form is reported as such on EDCS, EDR.
24. VITORIA (CL *Victoria*). same inscription as 22.
25. VITORIA (CL *Victoria*), CIL 10, 3119; AD 50-299?; Latium et Campania / Regio I: Puteoli; *liberti*; *tituli sepulcrales*; missing inscription?
26. VITORIA (CL *Victoria*), CIL 6, 29096 = CIL 10, *1089,214 = CIL 11, *349,3 = IMCCatania 500; AD 50 - 299?; Roma; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
27. VITORIA (CL *Victoria*), CIL 8, 2142 (p 944) = ILAlg-1, 3512; AD 50-299?; Numidia: Ain Kissa; *tituli sepulcrales*; material: stone; missing inscription?
28. VITORIA (CL *Victoria*), CIL 8, 24496 = ILTun 871; AD 50 - 299?; Africa proconsularis: Gebel Djelloud; *tituli sepulcrales*; missing inscription?
29. VITORIA (CL *Victoria*), CIL 8, 27108a = ILTun 1475 = MAD 926; AD 50-299?; Africa proconsularis: Thugga; *tituli sepulcrales*; material: stone; *titulus insculptus*.
30. VITORIAE* (CL *Victoriae*?), CIL 6, 29098; AD 50-299?; Roma; *tituli sepulcrales*; missing inscription? *Gentilicium*. Freedwoman.
31. VITORIANVS (CL *Victorianus*), CIL 6, 22719; 50-299? AD; Roma, *tituli sepulcrales*; missing inscription?
32. VITORINA (CL *Victorina*), ILPSbeitla 125; AE 1989 805; Africa proconsularis: Sufetula; *tituli sepulcrales*; material: stone.
33. VITORINA[E] (CL *Victorinae*), RIRs 197; 101-230 AD; Belgica: Durocortorum; *tituli sepulcrales*; missing inscription.
34. VITORINI (CL *Victorini*); RIRs 197; 101-230 AD; Belgica: Durocortorum; *tituli sepulcrales*; missing inscription.
35. VITORINVS (CL *Victorinus*), CIL 6, 3236 (p 3843) = Denkm 599 = D 2204 = IDRE 1, 55; 193-300 AD; Roma; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
36. VITORINVS (CL *Victorinus*), MAD 46; 50-299? AD, Africa proconsularis: Thugga; *tituli sepulcrales*; material: stone.
37. VITORIVS* (CL *Victorius*?), CIL VI, 29098. Same inscription as 30.
38. VITORIVS (CL *Victorius*), ILB 60 (2 p 227) = Finke 3 = AE 1921, 66; 100-299 AD; Belgica | Germania inferior: Cherain; *ordo decurionum*; *tituli sepulcrales*; *tria nomina*; material: stone; *titulus insculptus*.

(1d) <gt> pro /kt/

1. ADLEGT (CL *adlectus*), CIL II-5, 900 = SCPisone-B, p 23 = HEp 1994, 831z; ²⁰³ 50-299 AD; Baetica: Gemella; *Augusti/Augustae; leges; ordo senatorius; tituli operum*; material: aes.
2. INVIGTO (CL *invicto*); CIL 03, 11008 = CIMRM-2, 1739 = MREN, p 52,8; 151-250 AD; Pannonia superior: Brigetio; *milites; tituli sacri*; material: aes.
3. VIGTOR (CL *Victor*); ILAlg-2-1, 2583; 101-200 AD; Numidia: Celtianis; *tituli sepulcrales*; material: stone.
4. VICTORINUS (CL *Victorinus*), CIL XIII, 4674 = CAG-54, p 376; Belgica: Tullum; *tituli sepulcrales*; missing inscription.

(1e) <cit> / <cet> pro /kt/

1. INVICTE (CL *invictae*), CIL 6, 80 (p 3003, 3755, 4105) = CIMRM-1, 561; 171-230 AD; Roma; *sacerdotes pagani; tituli sacri*; material: stone.

(1f) <ht> / <x(t)> pro /kt/

1. AMBAXIVS (CL *Ambactius*); CIL 13, 6463; 101-250 AD; *Germania superior*: Burg. *Tituli sacri*.

(1h) Orthographical geminations: <cct>, <ctt> pro /kt/

1. VICCTOR (CL *Victor*), CIL 8, 27626; 50-299 AD; Africa proconsularis: Sicca Veneria; *tituli sepulcrales*.
2. AUCCTO (CL *Aucto*), CIL 6, 12796, AD 50-299?; Roma; *tituli sepulcrales*.
3. PACCTUMEIAE (CL *Pactumeiae*), CIL VI, 22913 (p 3528), 50-299? AD; Roma; *tituli sepulcrales*.
4. COLLECTTO[(CL *collacto*), Lupa 23119; 50-299 AD; Dalmatia: Iader; *tituli sepulcrales*.

(2a) <ct> pro /t/

²⁰³ Cf. EDCS code EDCS-46400001 for further bibliography.

1. FACTI (CL *fati*), CIL 13, 6435 = RSO 203 = IDieburg 11; 50-299 AD; Germania superior: Dieburg Civitas Auderiensium Vicus Med[]; *tituli sepulcrales*; missing inscription?

(3a) <ct> pro /tt/ (inverse spelling)

1. VECTIEIDA[E] (CL *Vettieidae*), CIL 9, 4264; Samnium / Regio IV: Amiternum, *tituli sepulcrales*.
2. VECTIENIA (CL *Vettienia*), CIL 6, 28660 (p 3535, 3919, 3920) = CIL 6, 36506; 50-299 AD; Roma; *tituli sepulcrales*.
3. VECTIVS (CL *Vettius*), CIL V, 247 = InscrIt-10-1, 411; Venetia et Histria / Regio X: Pola; *tituli sepulcrales*

4.2.2.6. 3rd century AD

(1a) <t> pro /kt/

1. VITORICVS (CL *Victoricus*), Haidra-06, 179 = AE 2013, 1975; 201-300 AD; Africa proconsularis: Ammaedara; *tituli sepulcrales*; material: stone; *titulus insculptus*.
2. VITORINAE (CL *Victorinae*), CIL 8, 9090 (p 1960); 247-255 AD; Mauretania Caesariensis: Auzia; *tituli sepulcrales*.
3. INVITO (CL *invicto*), CIL 17-2, 172 = CIL 12, 5561 = IR-3, 134 = ILN-5-3, 912; 271-275 AD; Gallia Narbonensis: Arras-sur-Rhone; *miliaria, Augusti*; material: stone.
4. INVITO (CL *invicto*), TitAq-1, 351 = AE 1982, 809; 201-300 AD; Pannonia inferior: Aquincum; *tituli sacri*; material: stone; *titulus insculptus*.
5. NVITO (CL *invicto*), CIL 17-02, 172 = CIL 12, 5561 = IR-3, 134 = ILN-5-3, 912; 271-275 AD; Gallia Narbonensis: Arras-sur-Rhone; *Augusti; miliaria*; material: stone; *titulus insculptus*.
6. BITORIVS (CL *Victorius*), IKoeln 154 = AE 1990, 733; 231-270 AD; Germania inferior: Colonia Claudia Ara Agrippinensium; *tituli sacri*; material: stone.
7. VITOR (CL *Victor*), ICUR-4, 10238u; 301-350 AD; Roma; *inscriptiones christianae; titulus sepulcrales*; material: *marmor; titulus insculptus*.

8. AVTILLE (CL *Auctillae*), CIL 06, 226 = DENKM 57; 202 AD; Roma; *ordo senatorius, tituli sacri*; material: *tabula marmorea (titulus insculptus)*.

(1b) <tt> *pro* /kt/

1. OTTACILIAE (CL *Otaciliae*), BCTH-1951/52-228,4, Numidia: Thamugadi;
2. OTTACILIAE (CL *Otaciliae*), BCTH-1951/52-228,4, Numidia: Thamugadi; *tituli sepulcrales*; material: stone.
3. OTTACILLA (CL *Otacilia*), BCTH-1907-CCLIII = ILAfr 664s; 244 AD; Africa proconsularis: Koudiat-Saria; *tituli sepulcrales*; material: stone.
4. OTTACILIVS (CL *Otacilius*), CIL 8, 3952 (p 1743); Numidia: Lambaesis; *tituli sepulcrales*; material: stone.
5. OTTACILIA (CL *Otacilia*), CIL 08, 2417 = CIL 8, 17934; Numidia: Thamugadi; material: stone.
6. OTTACILIVS (CL *Otacilius*), CIL 8, 2568 = CIL 8, 2569 = CIL 8, 18055 = CIL 8, 18056 = CBI 775 = CBI 776 = Legio-II-Parth 73 = Legio-II-Parth 74 = ZPE-165-293 = AE 2005, +65 = AE 2007, +1745 = AE 2013, +1747; *tituli sepulcrales*; material: stone.
7. OTTOBRES (CL *Octobres*), CIL 11, 2537 = ILCV 3033 = ICI-11, 42 = Carletti-2008, 14 = AE 2004, +551; 231-270 AD; Etruria / Regio VII: Clusium; *inscriptiones christianae, tituli sacri, tituli sepulcrales*; material: stone; *titulus insculptus*).

(1c) <pt> *pro* /kt/

1. OPT (CL *octobres*), ICUR-8, 21307 = ILCV 4028d; 201-300 AD; Roma, *inscriptiones christianae, tituli sepulcrales*.

(1d) <gt> *pro* /kt/

1. ATREGTIVS (CL *Atrectius*), CIL 13, 7281 = D 3805 (p 181) = CCCA-6, 49; 236 AD; Germania superior: Mogontiacum; *tituli sacri*. Celtic personal name.

(1f) <ht> *pro* /kt/

1. AMBAXTVS (CL *Ambactus*); CIL 13, 11774 = D 9254 = RSOR 56 = CSIR-D-2-13, 46; *Germania superior*: Stockstadt am Main; *tituli sacri*.

(2a) <ct> *pro* /t/ (inverse spelling)

1. OCTACILIA (CL *Otacilia*), AE 2013, 2077 = AE 2015, 1819; 244-247 AD; Africa proconsularis: Thugga; *tituli sepulcrales*; material: stone.
2. OCTACILIAE (CL *Otaciliae*), Purser 22; Roma; *tituli sepulcrales*.
3. OCTACILIV[S (CL *Otacilius*), AE 1987, 217; Latium et Campania / Regio I: Ficulea, *tituli sepulcrales*.

4.2.2.7. 3rd-4th century AD

(1b) <ct> *pro* /tt/ (inverse spelling)

1. OTTO (CL *Octo*), ICUR-10, 26566 (p 244); 291-325 AD; Roma; *inscriptiones christianae*; *tituli sepulcrales*; material: *marmor*. Cf. also VISSIT for *vixit* within the same inscription.

4.2.2.8. 4th century AD

(1a) <t> *pro* /kt/

1. [A]DAVTI (CL *Adaucti*), AE 1955, 29a = AE 1958, 276 = AE 1961, 275; 331-400 AD (dated by EDR-074179); Roma, *inscriptiones christianae*; *tituli sepulcrales*, material: *tectorium*
2. ADAVTVS (CL *Adauctus*), ICUR-3, 8644; 351-400 AD; Roma; *inscriptiones christianae*; *tituli sepulcrales*; material: *tectorium* (*titulus pictus*).

3. ADAVTVS (CL *Adauctus*), ICUR-3, 8645; 351-400; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *tectorium (titulus pictus)*.
19. AVTILLE (CL *Auctillae*), ICUR-6-16082a; 301-350 AD; Roma; *inscriptiones christianae, tituli sepulcrales*; material: *tabula marmorea (titulus insculptus)*.
20. AVTORES (CL *auctores*), CIL 11, 4631 (p 1371) = ICI-6, 41 = CLE 1846 = ILCV 4812 = CLEnuovo p 136 = AE 2013, +444; 351-400 AD; Umbria / Regio VI: Carsulae; *carmina, inscriptiones christianae, tituli sepulcrales*; material: *marmor, titulus insculptus*.
21. INVITO (CL *invicto*), AE 1996, 458; 307-312 AD; Apulia et Calabria / Regio II: Aequeum Tuticum; *Augusti; miliaria*; material: stone; *titulus insculptus*.
4. INVITO (CL *invicto*), IALg-1, 3972; 305 AD; Numidia: Guiz, Hennchir el; material: stone
5. INVITO (CL *invicto*), Thomsen-1917, 64; 292-305 AD; Syria: Salchad; *Augusti; miliaria*; material: stone.
6. IVITORA (CL *Victoria*), ICUR-7, 19493, 301-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor; titulus insculptus*.
7. OT (CL *octobribus*), ICUR-2, 4606; 351-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor; titulus insculptus*.
22. OTAVO (CL *octavo*), InscrAqu-3, 3115 = AE 1968,197 = AE 2007, +584 = Vergone-2007, 75; 301-400 A; Venetia et Histria / Regio X; Aquileia; *tituli sepulcrales; titulus insculptus*.
8. OTB* (CL *octobres*), ICUR-7, 17700; 301-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor; titulus insculptus*. N.B. abbreviation?
9. OTO (CL *octobres*), ICUR-7, 20529; 301-350 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor; titulus insculptus*; N.B. <VITORINVS> within the same inscription.
10. OTOBRIS (CL *octobres*), ICUR-2, 6322b = ILCV +3808d; 351-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor; titulus insculptus*.
11. OTOBRUM (CL *octobrium*), ICUR-1, 1492 = ILCV 3744a; 351-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor; titulus insculptus*.
12. PRAEFETIS (CL *praefectis*), CCCA-03, 366 = ELOstia p 203 = AE 1945, 55a = AE 1946, +168 = AE 1948, +34 = AE 1955, 180 = Dubosson-2018, 122; 366-390 AD; Latium et Campania / Regio I: Ostia Antica; *ordo senatorius; tituli sacri*; material: stone; *titulus insculptus*.
13. PROTETORE (CL *protectore*), TitAq-2, 613 = TitAq-2, 795 = AE 2010, 1298; 301-350 AD; Pannonia inferior: Aquincum; *tituli sepulcrales*; material: stone; *titulus insculptus*.
14. VITOR (CL *Victor*), ICUR-7, 19316; 301-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor; titulus insculptus*.

15. VITOR (CL *Victor*), ICUR-8, 22648 (p 468) = ILCV 737 (add); 326-375 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
16. VITOR[(CL *Victor*[)], ICUR-4, 10238u, 301-350 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
17. VITORA (CL *Victoria*), ICUR-3, 6979; 301-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor*; *titulus sepulcralis insculptus*.
18. VITORIA (CL *Victoria*), ICUR-9, 25603; 301-350 AD; Roma; *inscriptiones christianae; tituli sepulcrales; opus latericium; titulus pictus*.
19. VITORINVS (CL *Victorinus*), ICUR-07, 20529, 301-350 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *stone*; *titulus insculptus*.
20. VITORIS (CL *Victorius*), ICUR-9, 25628 (p 391); 301-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; missing inscription.
21. VTOBRES (CL *octobres*); ICI-3, 17 = SupIt-5-S, 54 = Buonocore-2016, p 18; 301-400 AD; Samnium Regio IV: Superaequum; *inscriptiones christianae; tituli sepulcrales*; material: *tectorium*.

(1b) <tt> *pro* /kt/

1. LATTVCA (CL *lactuca*), EDICT. Imp. Diocl. III/IV 6, 7, 301 AD.
2. OTTO (CL *octo*), ICUR-7, 18436 = ILCV 4002a = ICVaticano p 354 = AE 1997, +166; 301-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
3. OTTOBRES (CL *Octobres*), ICUR-4, 10975 = ILCV 2999c; 301-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales; titulus insculptus*.
4. OTTABV (CL *Octavus*), ICUR-6, 15620 = ILCV 4036; 326-375 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
5. VITTORIS (CL *Victorius*), ICUR-1, 2447 = ILCV 3656b; 351-400 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
6. EPI]TTETO (CL *Epicetus*), ICUR-3, 06837b; 301-400; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor*.

(1f) <ht> *pro* /kt/

1. [I]NVIHT[O], Finke 166 = CIMRM-2, 1320; 325-325 AD; IV secolo d.C.; Germania superior: Gimmeldingen; *sacerdotes pagani; tituli sacri*.
2. INVIH[TO], Finke 163 = CIMRM-2, 1314 = DasEnde 6, 325 AD; Germania superior: Gimmeldingen; *sacerdotes pagani; tituli operum; tituli sacri*.
3. INVIHT[O], Finke 163 = CIMRM-2, 1314 = DasEnde 6; 325 AD; Germania superior: Gimmeldingen; *sacerdotes pagani; tituli operum; tituli sacri*.
4. INVIHTO, Finke 165 = CIMRM-2, 1319 = DasEnde 8; 325 AD; Germania superior: Gimmeldingen; *tituli sacri*.

4.2.2.9. 4th-5th century AD

(1a) <t> *pro* /kt/

1. EPITETVS (CL *Epictetus*), ICUR-3, 7549; 301-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales; tabula marmorea; titulus insculptus*.
2. FRVTOSA (CL *Fructuosa*), AE 1974,109; 301-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales*.
3. OTAOR[ES] (CL *octobres*), ICUR-8, 23599b; 301-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales; titulus insculptus*.
4. OTAVIE (CL *Octaviae*), ICUR-4, 11967; 301-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales*.
5. OTOBRS (CL *octobres*), ICUR-3, 7152e; 301-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales; material: marmor; titulus insculptus*.
6. PROTETORIBVS (CL *protectoribus*), ICUR-8, 22406; 391-450 AD; Roma; *inscriptiones christianae; officium professio; tituli sepulcrales; material: marmor; titulus insculptus*.
7. VITORIA (CL *Victoria*), ICUR-10, 26759 (p 245), 301-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales; material: stone; titulus insculptus*.
8. VITORINV[S] (CL *Victorinus*), ICUR-03, 7874a, 301-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales; material: marmor; titulus insculptus*.

9. VITORINVS (CL *Victorinus*), ICUR-3, 7876; 301-500 AD; EDCS-35000308; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor*; *titulus insculptus*.

(1b) <tt> *pro* /kt/

1. BITTORIA (CL *Victoria*), ICUR-01, 304 = ILCV 4002h; Roma; 391-425 AD; *tituli sepulcrales*; missing inscription?
2. VITTORIA (CL *Victoria*), Anagni 74 = ICUR-1, 2624 = AnalEpi p 129; 391-450 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
3. VITRVBIS (CL *octobris*), ICUR-2, 4216; 391-425 AD; Roma; *inscriptiones christianae; nomen singulare; tituli sepulcrales*; material: *marmor*; *titulus insculptus*.

(2a) <ct> *pro* /t/

1. D]ALMAKTIO, ICUR-5-13894; ILCV-2-3001; 333 AD; Roma.
2. EPPICTECTVS (CL *Epictetus*), ICUR-3, 9101; 301-500 AD; Roma; *inscriptiones christianae; nomen singulare; tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
3. TEDOCTO (CL *Theodoto*), ICUR-2, 5505, 301-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; missing inscription?

(1e) <cit> *pro* /kt/

1. BENEDICITA (CL *benedicta*), AE 1988, 43; 301-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: stone.

4.2.2.10. 5th century AD

(1a) <t> *pro* /kt/

1. ADAVTO (CL *Adaucto*), ICUR-2, 6020 = ILCV +1983; 401-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: *tabula marmorea*.
2. VITOR (CL *Victor*), T. Alb. 27 (1952); 494 AD; Africa proconsularis: Theveste;
3. VITORIA (CL *Victoria*), ICUR-4, 11458; 401-500 AD; Roma; *inscriptiones christianae; tituli sepulcrales*; material: marmo; *titulus insculptus*.
4. VITORIS (CL *Victoris*), T. Alb. 27; 494 AD;

(1b) <tt> *pro* /kt/

1. EPITTITO (CL *Epictetus*), SRD 866 = ICS-CAR, 21 = AE 1981, 471; 401-500 AD; Sardinia: Carales; *inscriptiones christianae; tituli sepulcrales*; material: *marmor*.

(2a) <ct> *pro* /t/ (inverse spelling)

1. EREDICTATE (CL *hereditate*), T. Alb. 25, 484-496 AD; Africa proconsularis: Theveste.
2. EREDICTATE (CL *hereditate*), T. Alb. 6, 493 AD; Africa proconsularis: Theveste.

4.2.2.11. 5th-6th century AD

(1a) <t> *pro* /kt/

1. REDATVM* (CL *redactum*), CIL 8, 18914 = CLE 1722 = ILCV 4850a = ILAlg-2-2, 4727; AD 300-640?; Numidia: Thibilis; *carmina; inscriptiones christianae*; material: stone. N.B. <VICTOR> within the same inscription. Morphological variant?
2. BITORINA (CL *Victorina*), CIL VIII, 12199 = CIL VIII, 16281 = ILTun 598; 313-700 AD; Africa proconsularis: Agger; *inscriptiones christianae; tituli sepulcrales*; material: stone.

4.2.2.12. 6th century AD

(1a) <t> *pro* /kt/

1. ADAVTVS (CL *Adauctus*), ICUR-2, 6018 = ILCV 2142 (add, em) = CLE 2103 = CLEnuovo p 143 = AE 1905, 103; 501-550 AD; Roma; *carmina*; *inscriptiones christianae*; *tituli sepulcrales*; material: *tectorium* (*titulus pictus*).
2. AVTORE (CL *autore*), P. Ital. 2 37 = ChLA 21 716 (l. 75); 591 AD; Aemilia / Regio VIII: Ravenna; material: papyrus.
3. AVTORE (CL *autore*), P. Ital. 2 37 = ChLA 21 716 (l. 98); 591 d.C.; Aemilia / Regio VIII: Ravenna; material: papyrus.
4. AVTOREM (CL *autorem*), P. Ital. 2 37 = ChLA 21 716; 591 AD (l. 86); Aemilia / Regio VIII: Ravenna; material: papyrus.
5. AVTOREM (CL *autorem*), P. Ital. 2 37 = ChLA 21 716 (l. 92); 591 AD; Aemilia / Regio VIII: Ravenna; material: papyrus.
6. BITORIVS (CL *Victorius*), PizV 1 = HEp 1993, 286 = HEp 2000, 516; 501-600 AD; *tituli sepulcrales*; missing inscription?
7. FATA (CL *facta*), CIL 12, 2179 = ILCV 270 (add) = CLE 1384 = RICG-15, 218 = CAG-38-1, p 126 = CAG-38-4, p 303; 562-563 AD; Gallia Narbonensis: Saint-Jean-de-Bournay; *carmina*; *inscriptiones christianae*; material: stone; *titulus insculptus*. N.B. INGENTIA FATA RELIQVID = INGENTIA FACTA RELIQVIT (hexameter: final enoplios), cf. *ingentia facta* (Hor. *ep.* 2.1.6; Flor. *ep.* 2.34.21; Sil. *pun.* 11.134).
8. FRVTV (CL *fructu*), RICG-15-227; CIL 12, 2193; AD 527; Gallia Narbonensis: Parnans; *inscriptiones christianae*; *ordo senatorius*; material: stone; *titulus insculptus*. N.B. <C> added between <V> and <T>.

(1f) <ht> *pro* /kt/

1. OHTVBERES, CIL 13, 8481 = ILCV 2918 = RSK 494 = IKoeln 760 = SFGKoeln 6 = Terrien-2007, p 116; 501-600 AD; Germania inferior: Colonia Claudia Ara Agrippinensium; *inscriptiones christianae*; *tituli operum*; *tituli sepulcrales*; material: stone; *titulus insculptus*.

4.2.2.13. 6th-7th century AD

(1a) <t> *pro* /kt/

1. AVTHOREM (CL *autorem*), CIL 12, 2058 = ILCV 1587 = RICG-15, 152; 491 AD; Gallia Narbonensis: Vienna; *inscriptiones christianae, tituli sepulcrales*; material: stone.
2. AVTORE (CL *autore*), CIL 11, 273 = ILCV 1862; 300-799 AD; Aemilia / Regio VIII: Ravenna; *inscriptiones christianae*.
3. AVTORE (CL *autore*), ILGN 314 = RICG-15, 112; 300-799 AD; Gallia Narbonensis: Vienna; *inscriptiones christianae, tituli sepulcrales*; material: slate.
4. AVTORITATE (CL *auctoritate*), CIL 2-5, 156 = CILA-3-2, 522 = IHC 108 (p 2,54); 501-700; Baetica: Tucci; *inscriptiones christianae*; material: stone; *titulus insculptus*.
5. VITORIN[(CL *Victorinus*), CIL 8, 14231 = IFCCarth-03, 169; 300 - 799? AD; Africa proconsularis: Carthago; *inscriptiones christianae, tituli sepulcrales*; missing inscription.

(1b) <tt> *pro* /kt/

1. PREIETTICIA (CL *Preiecticia*); IFCCarth-1, 196 = ILTun 1147; AD 300 - 799?; Africa proconsularis: Carthago; *inscriptiones christianae, tituli sepulcrales*.

(1c) <pt> *pro* /kt/

1. OP[TAVO, ICERV 592; AD 300 - 799?; Hispania citerior: Avela; *inscriptiones christianae*.

4.2.2.14. 7th century AD

(4d) <t> *pro* /kt/

1. PROTITIONEM (CL *protectionem*), HEP, 3, 49; 601-700 AD; Lusitania: Norba; *tituli sepulcrales; inscriptions christianae*; material: stone.

4.2.2.15. 7th-8th century AD

(1a) <t> *pro* /kt/

1. OTABIAN (CL *Octaviani*), ICUR, 5, 13281b, AE, 2009, 145; 691-725 AD; Roma; *inscripciones christianae, tituli sepulcrales*.
2. ASTRITAS (CL *astrictas*), PizV 103 = HEP 1993, 118a = HEP 2000, 115; 690-710 AD; Lusitania: Barrado; *inscripciones christianae*; material: slate (graffito).

(1b) <tt> *pro* /kt/

1. OTTABIAN (CL *Octavianus*); ICUR-5, 13281a = ILCV +1144 = AE 2009, +145; 691-725 AD; Roma; *inscripciones christianae; tituli sepulcrales*; material: *tectorium*.

4.2.2.16 8th-9th century AD

(1a) <t> *pro* /kt/

1. TVFILATVS (CL *Theophylactus*), ICUR-04, 09374b1; 791-825 AD; Roma; *inscripciones christianae; tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
2. FRAVTIFERIS (CL *fructiferis*), PizV 104; 731-770 AD; Hispania citerior: Villayon; *defixiones; inscripciones christianae*; material: stone.

4.2.2.17 Unknown date

(1a) <t> *pro* /kt/

1. ADAVTA (CL *Adaucta*), *AE* 1935, 39, unknown date, *Africa proconsularis*: Thagura, *sacerdotes pagani*, material: stone? (*TM* 264065); missing inscription.
2. ADAVTI (CL *Adaucti*), *CIL* 15, 8107 = *ILCV* +950; unknown date; Roma; *inscriptiones christianae*; *tituli fabricationis*; material: *aes*; missing inscription.
3. AVTA (CL *Aucta*), *CIL* 2, 5428 (p 1079) = *CILA*-2-3, 847; Baetica: Carmo; missing inscription
4. AVTORITATE (CL *auctoritate*), *ILAlg*-2-2, 4343; Numidia: Ouled Gouam; material: stone; missing inscription?
5. COATORES (CL *coactores*), *CIL* 5, 4504 = *InscrIt*-10-05, 933; sconosciuto; Venetia et Histria / Regio X: Brixia; *tituli sepulcrales*; material: stone; *titulus insculptus*.
6. D]ELETATVM (CL *delectatum*), *PizV* 29 = *HEp* 1990, 616 = *HEp* 2000, 430; sconosciuta; Hispania citerior: Armenteros; missing inscription.
7. DELETACIO[N]ES (CL *delectationes*), Adams 2013. (Visigothic slate tablet)
8. FRVT[(CL *Fructuosus*?), *IFCCarth*-1, 360 = *ILTun* 1147; *Africa proconsularis*: Carthago; *inscriptiones christianae*; *tituli sepulcrales*.
9. FRVTICIO* (CL **Fructicio*), *InscrAqu*-2, 1300; Venetia et Histria / Regio X: Aquileia; material: stone; *titulus insculptus*.
10. FRVTICIS* (CL **Fructicius*), *CIL* 12, 3006 = *ILGN* +398 = *CAG*-30-03, p 447; Gallia Narbonensis: Nemausus;
11. FRVTIVOSVS (CL *Fructuosus*), *ERAEmerita* 611; Lusitania: Emerita; material: *marmor*; *titulus insculptus*.
12. HOTAVIA (CL *Octaviani*); *SupIt*-18-S, *1; Umbria / Regio VI: Suasa. N.B. fake inscription.
13. INBITI* (CL *invicti*?), *CIMRM*-1, 454 = *AE* 1980, 58b; Roma. N.B. the context is too fragmentary to ascertain whether <INBITI> stands for *inviti* (i.e. *nolentes*) or *invicti* (i.e. *undefeated*).
14. INVITI (CL *invicti*), *CIL* 8, 22198; *Africa proconsularis*: Gales; *Augusti*; *miliaria*; material: stone.
15. INVITO (CL *invicto*), *Likelsey* 395; Roma; *tituli sacri*; missing inscription.
16. INVITO (CL *invicto*), *MiliariHispanico* 337 = *HEp* 200304, 829; Hispania citerior: Aquae Flaviae; *Augusti*; *miliaria*; material: stone.
17. MATARE (CL *mactare*), *CIL* 11, 259; Aemilia / Regio VIII: Ravenna; *inscriptiones christianae*.

18. OTOB (CL *octobres*), CIL 8, 23020,2 = ILCV +3998; Africa proconsularis: Hadrumetum; *inscriptiones christianae*.
19. PERFET* (CL *perfectum*), BCTH-1951/52-204 = LBIRNA 750 = AE 1955, 52 = AE 1973, 581; sconosciuto; Numidia: Aradi; *ordo senatorius*. N.B. <PERFE(C)TUM> according to EDCS-13700315, <PERF(ECIT) ET> according to EDH.²⁰⁴
20. PRAEFETO (CL *praefecto*), CIL 6, *3574a = Epigrafia-03, p 1378 = TermeDiocleziano-1, p 683; Roma; *tituli sepulcrales*; material: *marmor*; *titulus insculptus*.
21. STATVS* (CL *stactus*); CIL 13, 10021,204 = CIL 07, 1321a = RIB-02-04, 02446,29 = RIB-02-08, p 162; Britannia: Segelocum. Missing inscription. *Stactus*? This personal names is very rare.
22. TETO (CL *tectum*), IBulgarien 230; Thracia: Basikarovo; *inscriptiones christianae*; *tituli operum*; *tituli sepulcrales*; material: stone; *titulus insculptus*.
23. TRATORI (CL *Tractori*), CIL 5, 3778; Venetia et Histria / Regio X: Verona; missing inscription.
24. VITO[RIO] (CL *Victorio*); CIL 12, 625 (p 816) = CAG-13-03, p 787; Gallia Narbonensis: Auriol; *tituli sepulcrales*; material: stone; *titulus insculptus*.
25. VITOR (CL *Victor*), AE 1999, 1674; Syria: Faqra; *termini*; material: stone; missing inscription(?).
26. VITOR (CL *Victor*), CIL 12, 5687,48; Gallia Narbonensis: Arausio; missing inscription.
27. VITOR (CL *Victor*), CIL 8, 13661; sconosciuta; Africa proconsularis: Carthago; *inscriptiones christianae*; *tituli sepulcrales*; missing inscription.
28. VITOR (CL *Victor*), CIL 8, 18450; Numidia: Lambaesis; *tituli sepulcrales*; missing inscription.
29. VITOR (CL *Victor*), ILAlg-2-3, 9408; Numidia: Castellum Arsacalitanum; missing inscription.
30. VITOR[(CL *Victor*)], CIL 11, 4685, Umbria Regio VI: Tuder; missing inscription(?)
31. VITORI (CL *Victori*), CIL 5, 3067; Venetia et Histria / Regio X: Patavium; *tituli sepulcrales*.
32. VITORI (CL *Victori*), CIL 5, 8110,167; Venetia et Histria / Regio X: Rovigo; *sigilla impressa*; *tituli fabricationis*; missing inscription.
33. VITORI (CL *Victori*?), CIL X, 5531 = SEBarc-13, p 66 = Epigraphica-2015-487 = AE 2015, 313 = EpRom 2015_1_22; Latium et Campania / Regio I: Aquinum; *liberti*; *tituli sepulcrales*.
34. VITORIA (CL *Victoria*?), CIL 13, 10001,3; Lugudunensis: Trion; *sigilla impressa*; *titulis fabricationis*; *tituli sacri*; *opus figlinae*.
35. VITORIA (CL *Victoria*), CIL 6, 29097; sconosciuta; Roma; *tituli sepulcrales*; missing inscription?

²⁰⁴ <https://edh-www.adw.uni-heidelberg.de/edh/inschrift/HD019176>).

36. VITORIA (CL *Victoria*), CIL 6, 29100 (p 3536); Roma; *tituli sepulcrales*; material: stone; missing inscription.
37. VITORIA (CL *Victoria*), CIL 8, 26387 = Uchi-2, 348; Africa proconsularis: Uchi Maius; *tituli sepulcrales*; material: stone.
38. VITORIA (CL *Victoria*), RAf-1956-324; Mauretania Caesariensis: Masculula; *titulus sepulcrales*; missing inscription.
39. VITORIAE (CL *Victoriae*), CIL V, 2859; Venetia et Histria / Regio X: Patavium; missing inscription?
40. VITORINO (CL *Victorino*), CIL VI, 3598, sconosciuta; Roma; *tituli sepulcrales*; missing inscription?
41. VITORINVS (CL *Victorinus*), CIL III, 12014,297g; Raetia: Tasgetium, *sigilla impressa*; *tituli fabricationis*; *opus figlinae*.
42. VITORIO (CL *Victorio*), CIL V, 3440; Venetia et Histria / Regio X: Verona; *tituli sepulcrales*; missing inscription.
43. VITORIO (CL *Victorio*), CIL V, 3440; Venetia et Histria / Regio X: Verona; *tituli sepulcrales*; missing inscription.
44. VITORIO (CL *Victorio*), CIL V, 3440; Venetia et Histria / Regio X: Verona; *tituli sepulcrales*; missing inscription.
45. VITORIO (CL *Victorio*), CIL VI, 29097; Roma; *tituli sepulcrales*; missing inscription?
46. VITORIO (CL *Victorio*), CIL VI, 29100 (p 3536), Roma, *tituli sepulcrales*; material: stone; missing inscription?
47. VITORIS (CL *Victorius*), Simonett-1941, p 16,63; Transpadana / Regio XI: Minusio; missing inscription?
48. VITORIVS (CL *Victorius*), CIL V, 3269; Venetia et Histria / Regio X, Verona, *tituli sacri*; material: *marmor*; *titulus insculptus*.
49. VITORIVS (CL *Victorius*), CIL V, 3269; Venetia et Histria / Regio X, Verona, *tituli sacri*; material: *marmor*; *titulus insculptus*.
50. VITORIVS (CL *Victorius*), CIL V, 3440; Venetia et Histria / Regio X, Verona; *tituli sepulcrales*; missing inscription?
51. VITORIVS (CL *Victorius*), CIL V, 3440; Venetia et Histria / Regio X, Verona; *tituli sepulcrales*; missing inscription?
52. VITORIVS (CL *Victorius*), PizV 119 = HEp 2000, 499; Hispania citerior: Salvatierra de Tormes; missing inscription?
53. VITRICI (CL *Victrici*), CIL 8, 9017; Mauretania Caesariensis: Auzia; *tituli sacri*; missing inscription?
N.B.: SANTO and VICTORIAE within the same inscription.

23. VITRIX (CL *Victrix*), CIL 8, 10883 = IAlg-2-1, 245; Numidia: Rusicade; *titulis sepulcrales*; material: stone.
24. VITRIX (CL *Victrix*), ILTun 846 = CICBardo 54; Africa proconsularis: Chott Menzel Yahia; *inscriptiones christianae*; *tituli sepulcrales*; material: stone; *titulus insculptus*.

(1b) <tt> *pro* /kt/

1. ATTIVOS (CL *Activos*), CIL XI, 2751; Etruria / Regio VII: Volsinii; *tituli operum*; material: stone; missing inscription.
2. FRVTIDENVS (CL *Fructinensus*), SupIt-22-CA, 12 = AE 2004, 530; Umbria / Regio VI: Camerinum; *tituli sacri*; material: *aes*; missing inscription?
3. NOTTVRNA (CL *nocturna*); BCTH-1916-140B = BE 669; Roma; *inscriptiones christianae*.

(2a) <ct> *pro* /t/ (inverse spelling)

1. RESOLVGTVM (CL *resolutum*), DTM 9 = AE 2012, 1024; Germania superior: Mogontiacum; *defixiones*; material: *plumbum*.
2. VOCTO (CL *voto*), CIL 8, 14111 = EChrAfr-2, 136; Africa proconsularis: Carthago; *inscriptiones christianae*.

(1h) Orthographical gemination

1. ADFECCTUS (CL *Adfectus*), CIL 6, 19213, Roma, mulieres; *tituli sepulcrales*.
2. VICTTORI (CL *Victori*), HEp 2010, 468; Hispania citerior, Chorense; *miliaria*.

4.2.3 Data analysis: internal and external variables

Given the above, the uncertainty of the data clearly emerges. Accordingly, we would like to anticipate that quantitative analysis is not likely to present a heuristic value, for two main reasons: first, these data, even without the issues discussed so far, are objectively scarce; second, the quantitative estimates considerably vary depending on whether some forms (notably some instances of *Vitor(-)*) are considered or not. For clarity purposes, however, in the attempt to provide a systematic overview, we shall present some quantitative and statistical analyses, with due clarifications in case the deductions may vary.

4.2.3.1 Phonological value of <t>

First, it is necessary ascertaining the possible phonetic value of <t>, i.e. whether it should be interpreted as a phonetic spelling ([t]) or as an allograph of <tt> (therefore hinting at the -kt- > -tt- assimilation). This issue, as previously seen in § 4.1.1, is at the center of a lively debate. A possible way – though not totally diriment – for ascertaining the phonological referent of <t> is examining the inscriptions attesting <t>, and investigating if they adopt consistently the *geminatio consonantium*. A first clue of the plausibility of the phonetic value [t] of <t> is provided, however, by the date of the inscriptions, covering a range from the 1st century BC to the 8th century AD. Actually, in this period, the use of the *geminatae*, though often prone to mistakes, is quite generalized (cf. CHAPTER 3). Therefore, we should expect that the outcome [tt], resulting from total assimilation, was likely to be spelled with two graphemes rather than with just one sign. In addition, if actually <t> had the value [tt], it would seem odd that such an error occurs so frequently.

The 256 collected forms showing the <t> spelling (including all the instances of *Vitor(-)*) are documented in 215 inscriptions, overall amounting to approximately 13.000 words. After having extracted the texts of these inscriptions, we have examined all the words showing both the *geminatio consonantium* and the singleton spelling whenever double consonants are expected. The obtained data, even by only considering all these texts on the whole, i.e., without further distinctions at the chronological and geographic levels, offer a quite clear picture: out of the 520 forms implying a long consonant, 497, i.e. the 95%, are spelled with the *geminatae*. Moreover, note that out of the 23 forms showing the singleton spelling, 14 concern *annus*, which is diffusely spelled *an(n)us* among the inscriptions of the Imperial Age.

This objective datum induces to conclude that the authors of the inscriptions showing the <t> spelling had orthographical proficiency as for the use of the geminatae and that the hypothesis that <t> = [t] is conceivable.

4.2.3.2 Analysis of the types undergoing -kt- > -t-

<t> <i>pro</i> /kt/					
	Form	Classical form	Date	Occurrences	% Syllabic structure
(1)	vit-	vīctor(-) / vīctrix / invictus /	301 BC (?) + / 100 BC (?) +	144*	60%* ⁽¹⁾ CVC.C
(2)	Adautus / Autus / Autillus / autor / autoritas	Adauctus / Auctus / Auctillus / auctor / auctoritas	50 AD +	27	11,3% ⁽¹⁾ CVCC.C / ⁽¹⁾ VCC.C
(3)	ot-	ōctober, ōctav-, ōcto	50 AD +	23	9,3% ⁽¹⁾ VC.C
(4)	Frut-	Frūctus, Frūctuosus, Frūctillus, *Frūcticius	50 BC +	19*	7,7%* ⁽¹⁾ CCV:C.C
(5)	fatus	fāctus	50 AD +	4	1,7% ⁽¹⁾ CVC.C
(6)	protetor / tetum	protēctor / tēctum	301 AD +	3	1,2% ⁽¹⁾ CV:C.C
(7)	tratus / tratorius	trāctus / trāctorius	101 AD +	3	1,2% ⁽¹⁾ CV:C.C
(8)	praefetus / perfetus	praefēctus / perfēctus	366 AD +	3	1,2% ⁽¹⁾ CVC.C
(9)	coator	coāctor	50 AD +	2	0,8% ⁽¹⁾ V:C.C
(10)	delet-	delēctatio / delēctatus	?	2	0,8% CVC.C
(11)	Noturn-	Nōcturnus / Nōcturninus	71 AD +	2	0,8% CVC.C
(12)	condutum / Redutus	condūctum / Redūctus	45 BC +	2*	0,8% ⁽¹⁾ CVC.C
(13)	Exatus Redatus	Exāctus Redāctus	161 AD +	2	0,8% ⁽¹⁾ CV:C.C?
(14)	astritas	adstrīctas	690 AD +	1	0,4% ⁽¹⁾ CCVC.C
(15)	Adzetus	Adiēctus	?	1	0,4% ⁽¹⁾ CV:C.C
(16)	matate	māctare	/	1	0,4% CVC.C
(17)	Respetus	Respēctus	50 AD +	1	0,4% ⁽¹⁾ CVC.C
(18)	Strutor	Strūctor	1 AD +	1	0,4% ⁽¹⁾ CCV:C.C
(19)	vetura	vēctura	120 AD +	1	0,4% ⁽¹⁾ CV:C.C
TOTAL				242	100%

TABLE 4..36 Lexical types showing the -kt- > -t- treatment

The present section will introduce the Latin lemmata showing the treatment *-kt-* > *-t-*. The analysis has been carried out by analyzing the syllable structure of each lexeme undergoing the drop of /k/. Particular attention has been paid to the quantity of the vowel preceding /k/, to ascertain whether coda reduction occurs mainly in heavy (Vk.t) or superheavy (V:k.t / VCk.t) syllables.

- (1) The most represented lexeme with regard to the *-kt-* > *-t-* treatment is *ŮICT-*. It is mostly attested in the personal names *Victor*, *Victorius* and derivatives (assuming all the instances of *Vitor(-)* imply *Vi(c)tor(-)*) and in the epithet *invictus*. There are about 147 occurrences of this lexeme, representing the 60% of the lexemes showing the *-kt-* > *-t-* treatment. Reconstruction guarantees vowel quantity (< Plt. **uik-tor* / **uik-to-*). The most ancient forms showing this treatment, if we overlook the above discussed <VITORIA> from Praeneste (301 BC), dates back to the first half of the 1st century BC, i.e. <VITORIVS> (*ILLRP* 534). The attestations of <VIT> for *vict-* display a continuity up to the 6th century AD. It is conceivable that, after the drop to /k/, /i/ underwent compensatory lengthening (cf. Mancini 2000a, 2000b). As for the adjective *invictus*, mainly attested in formulas such as *Deo invicto*, *Impp(eratoribus)* [...] *invictis* (e.g. *CIL* 7, 1039; *AE* 1981, 916) vowel lengthening led to homophony between *invitus* < *invictus* ‘undefeated’ and *invitus* ‘unwilling’; likewise, vowel lengthening possibly led to homophony between *vītor* < *ŷictor* ‘conqueror’ and *vītor* ‘wicker-worker’.
- (2) Another widespread lexeme showing the *-kt-* > *-t-* treatment is *AUCT-*, which is employed in several onomastic formations (*Auctus* and derivatives, also with the prefix, cf. *Adauctus*) and in the names *auctor*, *auctoritas*. There are 27 occurrences of this lexeme (about the 11,3% of the forms undergoing *-kt-* > *-t-*), which increase to 31 by considering the 4 instances of *auctionem* > *autionem*. The first attestation dates back to the half of the 1st century AD (*ILAlg-1*, 48). There is documentary continuity up to the 6th century AD.
- (3) The third most represented lexeme is *ŮCT-*, which is attested mainly in the personal names *Octav(i)us* and derivatives and in *October*. There are 23 attestations of <OT> (about the 9,3% of the forms showing *-kt-* > *-t-*). The first attestation dates back to the half of the 1st century

AD (*CIL* 4, 3340,26). There is documentary continuity up to the 8th century AD. Comparison guarantees vowel quantity (cf. Gk. ὀκτώ).

- (4) The lexeme FRŪCT- is mainly attested in the *cognomina* *Frūctus* and *Frūtuosus* and possibly in the *gentilicium* *Frūticius* (cf. § 4.2.1.2). As a whole, there are 19 occurrences of such forms (about the 7,5% of the forms showing -kt- > -t-). The first attestation is dated 30 AD (*CIL* 5, 1219). These forms are attested with a certain documentary continuity up to the 9th century AD. Reconstruction guarantees vowel quantity (< *frūg-to, cf. *EDLIL* s.v. *fruor*).
- (5) The form <FATVS> for *fāctus* is attested four times, from 50 AD (*CIL* 4, 334,38). If we assume a compensatory lengthening after the drop of /k/, we may note the formation of the homophonic pair *fātus*, -i < *fāctus*, -i (ppp. of *fācio*) and *fātum*, -i 'fate'.

Items (9-19) refer to lexemes that are seldom attested. Beside the forms presented in TABLE 4.4, there is a series of forms, mostly Greek anthroponyms, showing the -kt- > -t- treatment, i.e., *Epitetus* / *Epitesis* (50 AD +, 3 attestations), *Tufilatus* (CL *Theophylactus*, 790 AD), *Prototetus* (CL *Proctotetus*, 51 AD +), *Status* (< *Status*?).

In addition, we must consider also the instances of *scriptio inversa* of /t/ via <ct>. These hypercorrected spellings affect 7 different lexemes. Such forms are attested since the first half of the 1st century AD up to the 5th century AD. The interpretation of some of these forms, however, is not clear-cut. The forms <FACTI> and <FACTO> (*CIL* 13, 6435; *CIL* 5, 03415) would attest the merger of *fātus*, -i < *fāctus*, -i (ppp. of *fācio*) and *fātum*, -i 'fate', leading to orthographical uncertainty. The form <MAGISTRACTVS> (*AE* 2000, 586) may be due to a mere mechanical error, since, within the same inscription, we find also the correct spelling *magistratibus*. The form <EPPICTECTVS> (*ICUR*-3, 9101) may be due to a mechanical error or even to the uncertainty of the proper placement of <CT>, given the tendency of this name to be affected by the drop of /k/ (cf. <EPITETVS> / <EPITESIS> for *Epictetus* / *Epictesis*). These phenomena of inverse spelling affect both light syllables CV (<EREDICTATE> for *hereditate*) and heavy syllables CV: (<VOCTVM> for *vōtum*). The form <RESOLVGTVUM> for *resolūtum* (*AE* 2012, 1024) hints on the one hand at the sonorization of /k/ and, on the other hand, at the *scriptio inversa* of /t/ via <CT>.

Eventually, within the *-kt- > -t-* process, we may also include those cases of <t> for original /nkt/, affecting secondary /kt/ via the path /nkt/ > /kt/ > /t/. In comparison to the treatment /nkt/ > /nt/, the outcome with the nasal drop, even if not continued among the Romance languages (commonly implying the /nkt/ > /nt/ outcome), shows a remarkable frequency in Substandard Latin texts (cf. De Angelis, 2016). The forms with <t> for /nkt/ are overall 7, and affect the lemmata *defunctus* and *sanctus*, which are attested with a high frequency also with regard to the treatment /nkt/ > /nt/. This may suggest that the spread of the *-nkt- > -kt- > -t-* outcome is rather marginal in Substandard Latin. In fact, the surfacing of forms such as *defutus* and *satus* can be explained in the light of the high frequency of the words *defunctus* and *sanctus* in Latin inscriptions. Basically, it is conceivable to hypothesize that, within the variety of Spoken Latin wherein original /nkt/ had undergone the nasal drop, secondary /kt/, in some cases, underwent the same process as primary /kt/. This outcome is attested since the second half of the 2nd century up to the 6th century. However, there is the possibility that such forms represent particular spellings with the omission of the nasal (thus hinting as *-nkt- > -nt-*).

If we examine the collected data with reference to syllable weight, the following elements can be inferred:

(a) Heavy rhyme: (C)VC.C

Quantitatively, this is the most represented case (75,4% out of the total occurrences of *-kt- > -t-*), and it affects 9 different lexemes. It is conceivable that, after the drop of /k/, the preceding vowel undergoes compensatory lengthening, similarly to the vowels followed by the cluster /ns/, /nf/, /nkt/, /nks/ (the so-called “hidden quantity”; cf. Allen 1978, pp. 28, 66; Weiss 2009, p. 129). Alternatively, we may also suppose that the lengthening is triggered by the stress since the vowel turns out to be in open syllable. However, since the drop of /k/ is attested in a remarkable number of forms wherein the syllable undergoing coda reduction is not in a stressed position, the first hypothesis is fairly more likely.

(b) Superheavy rhymes CVCC.C / (C)CV:C.C

The 24,6% of the forms showing the treatment *-kt- > -t-* contain superheavy syllables. Even if this case is quantitatively less represented if compared to (a), it affects a higher number of lexemes, i.e., 10 *contra* 8. The phenomenon occurs both in stressed and unstressed syllables.

In this case, the drop of /k/ proceeds towards the lightening of superheavy syllables, likewise *stēlla* > STĚLA, *nūllus* > *nūlus*, *mīllia* > *mīlia*.

Therefore, we may observe that coda reduction affects both heavy and superheavy rhymes, without significative difference as for chronology (note that the two cases occur simultaneously from the end of the Republican age till the end of the examined documentation). Furthermore, the fact that the phenomenon (b), though quantitatively less represented, affects a higher number of lexical types if compared to (a), allows to infer that the two processes were likely to be equally represented in Substandard Latin, and that the evidence provided by the available data may be compromised by the high frequency of the onomastic types *Victor* and *Octavius* (and their respective derivatives) as well as by the noun *October*. Hence, the processes (a) and (b) would comply with the same phenomenon, firstly triggered by a coarticulatory process and the simplification of syllable margins, without being directly related to syllable weight. A further piece of evidence of this tendency of Substandard Latin to the simplification of this cluster is provided by the drop of /k/ in word-initial position (e.g. <TESIBI> for *Ctesibi* in *CIL* 16, 189). Rather, we may observe a correlation, i.e., in case /k/ is the coda of a superheavy syllable, its drop converge into the drift towards the lightening of superheavy syllables, which, rather than a law, is mainly a tendency (cf. Giannini & Marotta 1989, pp. 265-265). In addition, in case coda reduction affects stressed syllables, the quantitative correlation between stressed and heavy syllables is reinforced.

4.2.3.3 *Chronological distribution of the collected forms*

We shall introduce the collected variants according to their distribution across time. Firstly, absolute data will be presented (see below TABLE 4.5). Then, relative data, by comparison with the correct spellings of /kt/, will be shown. In case of loose dates, we have restricted the dating, whenever possible, to the range of two centuries, on the basis of onomastic and historical clues. The asterisk marks those estimates which may vary (mainly because of the interpretation of forms such as *Vitor(-)*).

Data presented in TABLE 4.5, displayed also in the projection of CHART 4.1, have been arranged according to 5 different phenomena:

- (1) REDUCTION *-kt-* > *-t-*: <t> for primary and secondary *-kt-* (i.e., /nkt/ > /kt/ > /t/), <ti> for /ktj/ (limited to the instances of *auctio* > *autio*).
- (2) ASSIMILATION *-kt-* > *-tt-*: <tt> for /kt/ and inverse spelling (i.e., <pt> for /kt/ and <ct> for /t/).
- (3) SONORISAZION *-kt-* > *-gt-*: <gt> for /kt/.
- (4) INSERTION *-kt-* > *-kVt-*: <cet>, <cit> for /kt/.
- (5) FRICATIVIZATION *-kt-* > *-xt-* / *-çt-* / *-ht-* /: <xt>, <ht> for /kt/. Only forms attested in Latin texts have been considered.

	(1) <i>-kt-</i> > <i>-t-</i>				(2) <i>-kt-</i> > <i>-tt-</i>			(3) <i>-kt-</i> > <i>-gt-</i>	(4) <i>-kt-</i> > <i>-kVt-</i>	(5) <i>-kt-</i> > <i>-xt-</i> / <i>-ht-</i>
	/kt/ = <t>	/t/ = <ct>	/ktj/ = <ti>	/nkt/ = <t>	/kt/ = <tt>	/pt/ = <ct>	/tt/ = <ct>	/kt/ = <gt>	/kt/ = <cVt>	/kt/ = <xt> / <ht>
I BC	7*									
BC I-I AD	5*									
I AD	17*	2	4		1*				1	
I-II AD	19*				1				3	
II AD	42*				3			1	1	
II-III AD	36*	1		1			3	4	1	
III AD	8	3		3	7	1		1		2
III-IV AD					1					
IV AD	25	1			6					4
IV-V AD	9	1		1	3				1	
V AD	4	2			1					
V-VI AD	2									
VI AD	8			1						1
VI-VII AD	5	1			1	1				
VII AD										
VII-VIII AD	2				1					
VIII-IX AD	1									
TOTAL	110/81	11	12	6	25	2	3	6	7	7

TABLE 4.37 *Spelling variants across time: absolute data*

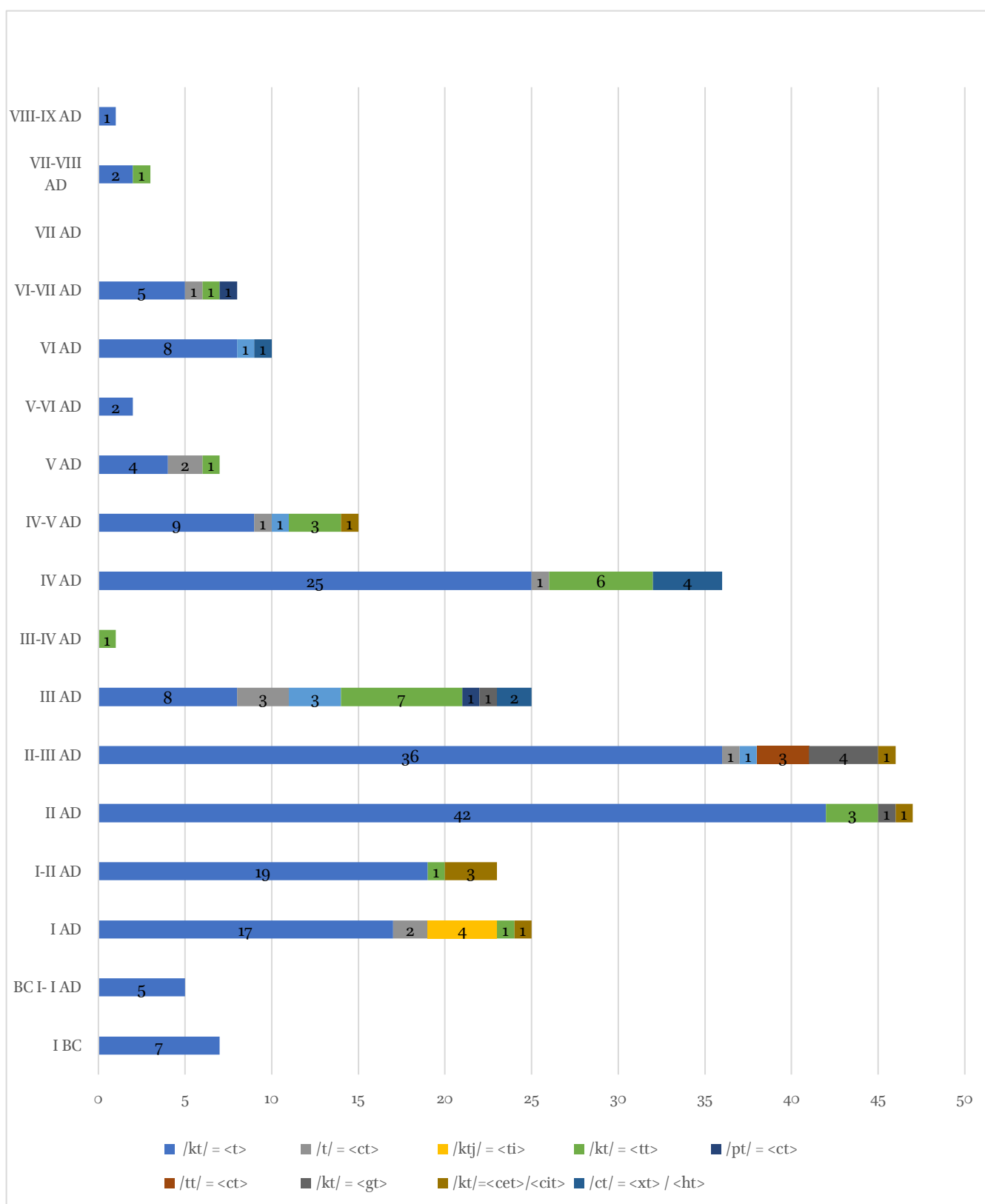


CHART 4.16 *Spelling variants of /kt/ across time*

As it can be inferred from these preliminary data, the treatment *-kt- > -t-* is continuously attested from the 1st century BC.

Since the 1st century AD, both the processes of *scriptio inversa* of /t/ via <ct> and the drop of /k/ in /ktj/ are attested. The treatment *-kt- > -t-* of secondary /kt/, resulting from /nkt/ > /kt/, is attested, though sporadically, since the 2nd-3rd century AD.

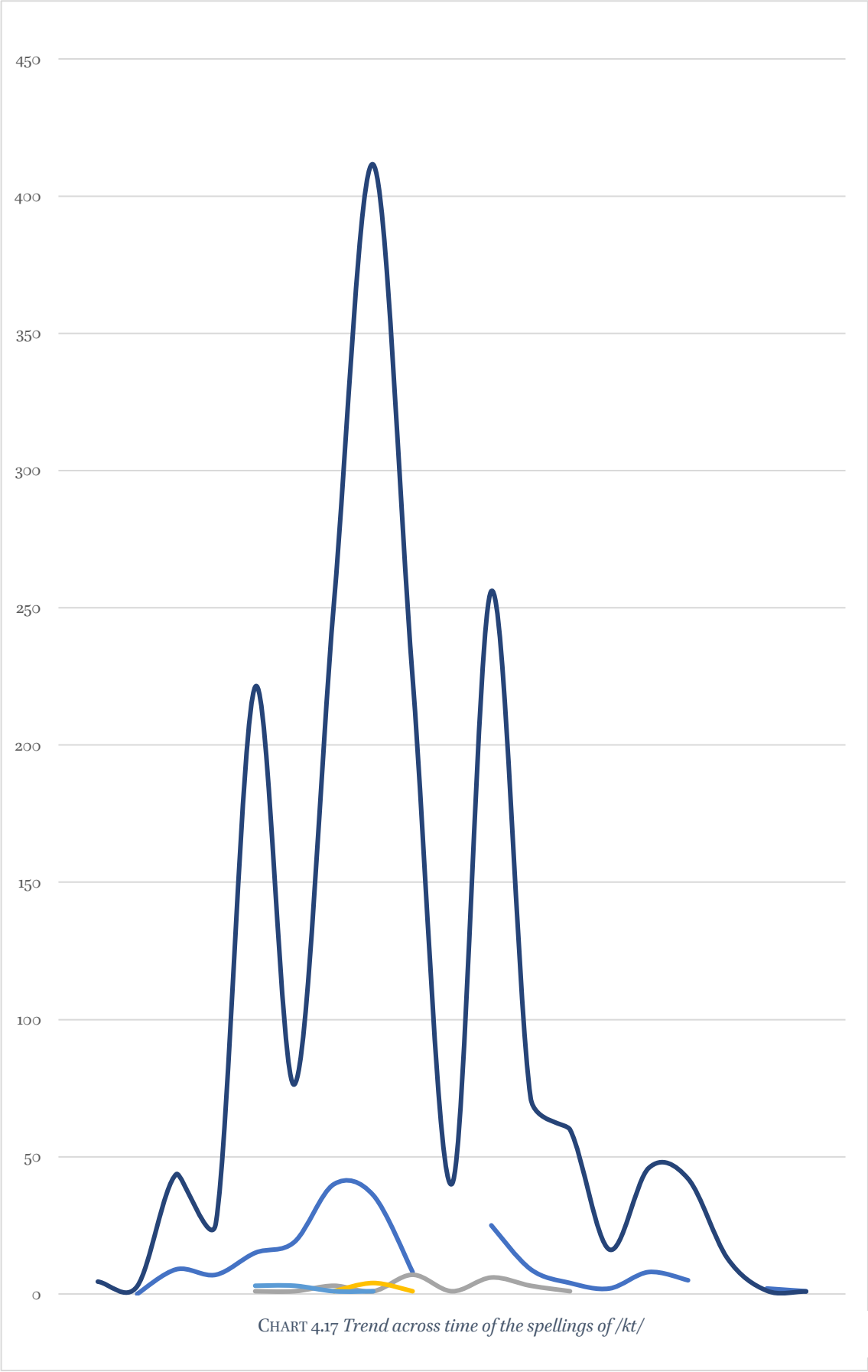
The process of total regressive assimilation *-kt- > -tt-* is attested since the 1st century AD. It is attested continuously, even though patchily and with fewer attestation than *-kt- > -t-*, till the 7th-8th century AD. Likewise, the instances of *scriptio inversa* are attested sporadically, with a peak around the 2nd-3rd century AD.

The other examined phenomena are attested for a circumscribed range of centuries: sonorization of C1 is attested between the 2nd and 3rd centuries AD; epenthesis between the 1st and 3rd centuries AD, with a further surfacing around the 4th-5th century AD; the *scriptio* of /k/ via <x> and <h> is the phenomenon whose attestation is tardive in comparison to the other ones, from the end of the 3rd century until the 6th century. Notably, these spellings show a peculiar geographical distribution.

TABLE 4.5 and CHART 4.1 clearly display the cooccurrence of all these phenomena between the 1st and the 4th century AD. This evidence is interesting in the attempt of ascertaining a potential correlation of these variants with external variables. Nonetheless, we ought to take into consideration a remarkable factor: these absolute data are apparently compromised, especially as far as the patches lacking relevant forms or with sensitive oscillations are concerned, by documentary density. That is to say that the evidence that all the examined outcomes cooccur in the period 1st-4th century AD is firstly due to the fact that in this period there is the highest concentration of both epigraphic and papyraceous documentation.

In order to provide a more precise projection of the actual trend across time of these variants, it is, therefore, necessary to compare the misspellings with the correct spelling <ct>. These relative data do not aim to provide data of phonological variation, but just to present objectively the actual occurrence of the examined variants, whose frequency may firstly depend on the representativeness of the words containing /kt/.

CHART 4.2 compares the trend across time of the misspellings, including the uncertain forms of <t>, and the correct spelling <ct>. Data pertaining to the correct spelling, for ease of reference, have been scaled down to 10. Inverse spellings and the treatment of secondary *-kt-* have not been taken into account, since it would have been necessary also considering their respective correct spellings.



In the first instance, we can note that the peak of the attestation of *-kt- > -t-* goes with the peaks of the correct spellings. Likewise, the surfacing of the less attested spellings emerges in those patches wherein there is a higher concentration of forms with <ct>.

TABLE 4.6 displays the relative frequency of each misspelling. Such percentages have been calculated by excluding, as in CHART 4.2, the inverse spellings as well as the treatment of secondary *-kt-*. The proportion has been obtained by considering all the forms with etymological /kt/ (i.e. by adding up all the spelling variants of /kt/, including the correct one).

	/kt/ = <t>	/kt/ = <tt>	/kt/ = <gt>	/kt/ = <cet> / <cit>	/ct/ = <xt> / <ht>
I BC	2%				
BC I- I AD	2,6%				
I AD	0,7%			0,4%	
I-II AD	1,3%	0,13%		0,4%	
II AD	1,6%	0,12%	0,04%	0,04%	
II-III AD	0,9%	0,024%	0,1%	0,024%	
III AD	0,35%	0,31%	0,04%		0,09%
III-IV AD		0,25%			
IV AD	1%	0,23%			0,15%
IV-V AD	1%	0,41%		0,14%	
V AD	0,7%	0,17%			
V-VI AD	1,2%				
VI AD	1,7%				0,21%
VI-VII AD	1,17%	0,24%			
VII AD					
VII-VIII AD	16%	8,3%			
VIII-IX AD	11%				

TABLE 4.38 Relative frequency of the misspellings for etymological /kt/ across time

As for the spelling <t>, it is not possible to observe an evident trend. Between the 1st century BC and the 1st century AD, there is a particular occurrence of this spelling, which seems to decrease in the following centuries, despite a higher number of attestations in absolute terms. However, this particular occurrence may considerably vary, depending on the interpretation of the forms attested in these periods. Around the end of the examined documentation, there is a remarkable peak of the forms showing *-kt- > -t-*, which is however related to the low number of forms with /kt/.

As for the spelling <tt>, we may note that it presents, in general, a low degree of occurrence, displaying a regular trend across time, with a peak around the 7th-8th century AD (nonetheless, the percentage 8,3% corresponds, actually, to a unique occurrence of <tt> out of 12 total occurrences of words with etymological /kt/).

As for the other spellings, the relative percentages do not add remarkable conclusions in comparison to the absolute data: these are sporadic phenomena, mainly subphonemic, attested for a limited period, surfacing in those periods wherein there is a higher documentary density.

However, we have to admit that such data are objectively too scarce to provide significative percentages. A more reliable account can be obtained only by considering also the geographical variable (see the next section § 4.2.4.4) and text type for each synchronic cut (cf. § 4.2.3.5).

4.2.3.4. *Geographical distribution of the collected forms*

We present below the collected variants according to their geographical distribution. First, absolute data will be analyzed. Then, relative frequencies of each misspelling as compared to the correct spelling will be discussed.

Some areas do not present instances of misspellings, including *scriptiones inversae*. In most cases, with the exception of *Dacia*, it is dealt with *provinciae* and *regiones* showing a low epigraphic density (cf. CHAPTER 1, TABLE 1.1), i.e., *Achaia*, *Alpes Cottiae*, *Alpes Graiae*, *Alpes Maritimae*, *Alpes Poeninae*, *Arabia*, *Asia*, *Barbaricum*, *Cappadocia*, *Cilicia*, *Corsica*, *Creta et Cyrenaica*, *Cyprus*, *Galatia*, *Lycia et Pamphilia*, *Mesopotamia*, *Moesia superior*, *Palaestina*, *Pontus et Bithynia*, *Regnum Bosfori*. Many of these provinces are areas wherein Latin circulated mainly as superhigh variety. Therefore, it is conceivable that the absence of deviations is to be attributed, in addition to a scarce epigraphic density, to a higher concentration of official texts, that are likely to display a more correct orthography.

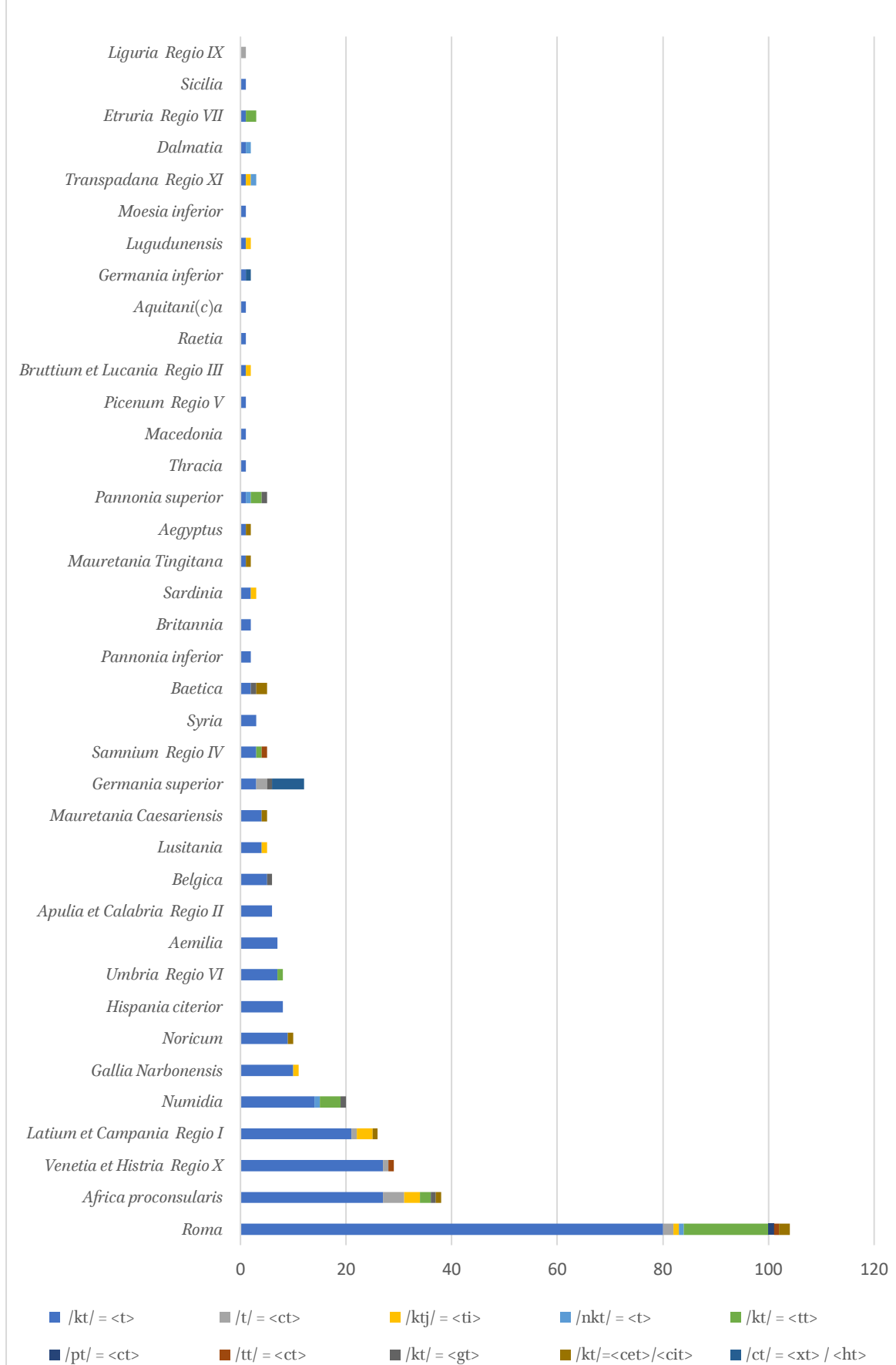
TABLE 4.7 shows absolute data of non-classical spellings for each *provincia* and *regio*; CHART 4.3 displays the projection of TABLE 4.7:

	/kt/ = <t>	/t/ = <ct>	/ktj/ = <ti>	/nkt/ = <t>	/kt/ = <tt>	/pt/ = <ct>	/tt/ = <ct>	/kt/ = <gt>	/kt/= <cet> /<cit>	/ct/ = <xt> / <ht>
<i>Roma</i>	80	2	1	1	16	1	1		2	
<i>Africa proconsularis</i>	27	4	3		2			1	1	
<i>Venetia et Histria / Regio X</i>	27	1					1			
<i>Latium et Campania / Regio I</i>	21	1	3						1	
<i>Numidia</i>	14			1	4			1		
<i>Gallia Narbonensis</i>	10		1							
<i>Noricum</i>	9								1	
<i>Hispania citerior</i>	8									
<i>Umbria / Regio VI</i>	7				1					
<i>Aemilia</i>	7									
<i>Apulia et Calabria / Regio II</i>	6									
<i>Belgica</i>	5							1		
<i>Lusitania</i>	4		1							
<i>Mauretania Caesariensis</i>	4								1	
<i>Germania superior</i>	3	2						1		6
<i>Samnium / Regio IV</i>	3				1		1			
<i>Syria</i>	3									
<i>Baetica</i>	2							1	2	
<i>Pannonia inferior</i>	2									
<i>Britannia</i>	2									
<i>Sardinia</i>	2		1							
<i>Mauretania Tingitana</i>	1								1	
<i>Aegyptus</i>	1								1	

<i>Pannonia superior</i>	1		1	2		1				
<i>Thracia</i>	1									
<i>Macedonia</i>	1									
<i>Picenum / Regio V</i>	1									
<i>Bruttium et Lucania / Regio III</i>	1		1							
<i>Raetia</i>	1									
<i>Aquitani(c)a</i>	1									
<i>Germania inferior</i>	1								1	
<i>Lugdunensis</i>	1		1							
<i>Moesia inferior</i>	1									
<i>Transpadana Regio/ XI</i>	1		1	1						
<i>Dalmatia</i>	1			1						
<i>Etruria / Regio VII</i>	1				2					
<i>Sicilia</i>	1									
<i>Liguria / Regio IX</i>		1								
TOTAL	262	11	13	5	28	1	3	6	8	7

TABLE 4.39 *Spelling variants across space: absolute data*

CHART 4.7 *Spelling variants across space: absolute data*



As for the spelling <t>, the most of attestations is found in *Roma*, with 80 forms total (the 30% out of the total of the spelling <t>), followed by *Africa proconsularis* (27 forms, 10%), *Venetia e t Histria / Regio X* (27 forms, 10%), *Latium et Campania / Regio I* (21 forms, 8%), *Numidia* (14 forms, 5%), *Gallia Narbonensis* (10 forms, 3,4%), *Noricum* (9 forms, 3,4%), *Hispania citerior* (8 forms, 3%), *Umbria / Regio VI* (7 forms, 2,6%), *Aemilia* (7 forms, 2,6%), *Belgica* (5 forms, 1,9%), *Lusitania* (4 forms, 1,5%), *Mauretania Caesariensis* (4 forms, 1,5%), *Germania superior* (3 forms, 1,1%), *Germania superior* (3 forms, 1,3%), *Samnium / Regio IV* (3 forms, 1,1%), *Baetica*, *Pannonia inferior*, *Britannia e Sardinia* (2 forms for each of them; 0,75%); *Mauretania Tingitana*, *Aegyptus*, *Pannonia superior*, *Thracia*, *Macedonia*, *Picenum / Regio V*, *Bruttium et Lucania / Regio III*, *Raetia*, *Aquitani(c)a*, *Germania inferior*, *Lugdunensis*, *Moesia inferior*, *Transpadana / Regio XI*, *Dalmatia*, *Etruria / Regio VII*, *Sicilia* (a unique attestation; 0,4%).

The inverse spellings of /t/ via <t> show a particular concentration in *Roma*, *Germania superior* (2 attestations, 22%), *Africa proconsularis* (4 attestations; 44%) and a unique attestation, respectively, in *Venetia et Histria / Regio X* e *Latium et Campania / Regio I* e *Liguria / Regio IX*.

The spelling <ti> for /ktj/ is attested in *Latium et Campania / Regio I* and *Africa proconsularis* (3 attestations each), *Roma*, *Gallia Narbonensis*, *Lusitania*, *Sardinia*, *Bruttium et Lucania / Regio III*, *Lugdunensis*, *Transpadana / Regio XI* (a unique attestation each).

The spelling <t> for /nkt/ is documented, even though patchily, only in *Roma*, *Numidia*, *Pannonia superior*, *Transpadana / Regio XI* (a unique attestation each).

The spelling <tt> for /kt/ is found only in *Roma* (16 occurrences; 57%), *Numidia* (4 occurrences; 14%), *Africa proconsularis*, *Pannonia superior*, *Etruria / Regio VII* (2 occurrences; 7%), *Umbria / Regio VI*, *Samnium / Regio IV* (a unique attestation each; 3,5%).

The spelling <gt> for /kt/ is sporadically attested in different areas (*Roma*, *Africa proconsularis*, *Numidia*, *Belgica*, *Germania superior*, *Baetica*, *Pannonia superior*, a unique attestation each); likewise, the spellings <cet>/<cit> are scattered in different regions (*Rome*, *Africa proconsularis*, *Latium et Campania / Regio I*, *Noricum*, *Mauretania Caesariensis*, *Mauretania Tingitana*, *Aegyptus*).

The spellings <ht> and <xt>, instead, as previously mentioned, seem to be attested exclusively in *Germania inferior* and *superior*.

With the exception of the above spelling, as for the other ones it is not possible to detect compelling clues about their geographical distribution. These data are misleading for two main reasons. First of all, it is dealt with absolute data. This means that the evidence of a higher concentration in Rome and Africa depends primarily on the high epigraphic density characterizing

these areas. Second, these data do not consider the diachronic progression, though they allow to include also those attestations whose dating is unknown.

For this reason, we shall analyze these variants by examining their relative percentage in comparison with the <ct> spelling. Then, in the next section, we shall analyze these data by combining both diachronic and geographical variables, as well as text type.

CHARTS 4.4-4.8 display the relative frequency of each misspelling as compared to the number of words containing /kt/ for each region. These data show significant differences as for the concentration of the analyzed form if compared to TABLE 4.7 and CHART 4.3. As can be seen, the spellings <t> display a higher diffusion in the close areas *Noricum* and *Venetia et Histria / Regio X* and in *Umbria / Regio VI*. As for the other *provinciae* and *regiones*, it is not possible in the first instance to detect any distributional pattern.

It is worth stressing, as is evidenced by CHART 4.9, that some areas display the cooccurrence of different spellings: in particular, *Umbria / Regio VI* shows one of the highest concentrations of both <t> and <tt>; *Mauretania Tingitana* displays both a remarkable concentration of the spellings <t> and of the forms with vowel insertion; *Belgica* and *Germania superior* show the spellings <t>, <xt> / <ht> and <gt>; *Africa proconsularis* is the unique province showing the co-occurrence of <t>, <tt>, <gt>, <cit>.

These data, however, do not allow to infer significant elements of geographical variation. Rather, they show how quantitative projections may vary if we relate the misspellings to the actual presence of forms with /kt/. The problems concerning the possibility of attributing a heuristic value to these data are the following: first, these data do not take into consideration the diachronic dimension; second, the percentages drawn by considering all primary sources poses the problem of the text types found within the epigraphic and papyraceous corpora for each area. That is to say that, in case a given province mainly shows well-finished and official texts, the datum concerning the presence of forms deviating from standard orthography decreases considerably; conversely, in areas wherein a higher variety of text types can be found, it is more conceivable to obtain percentages heuristically valid.

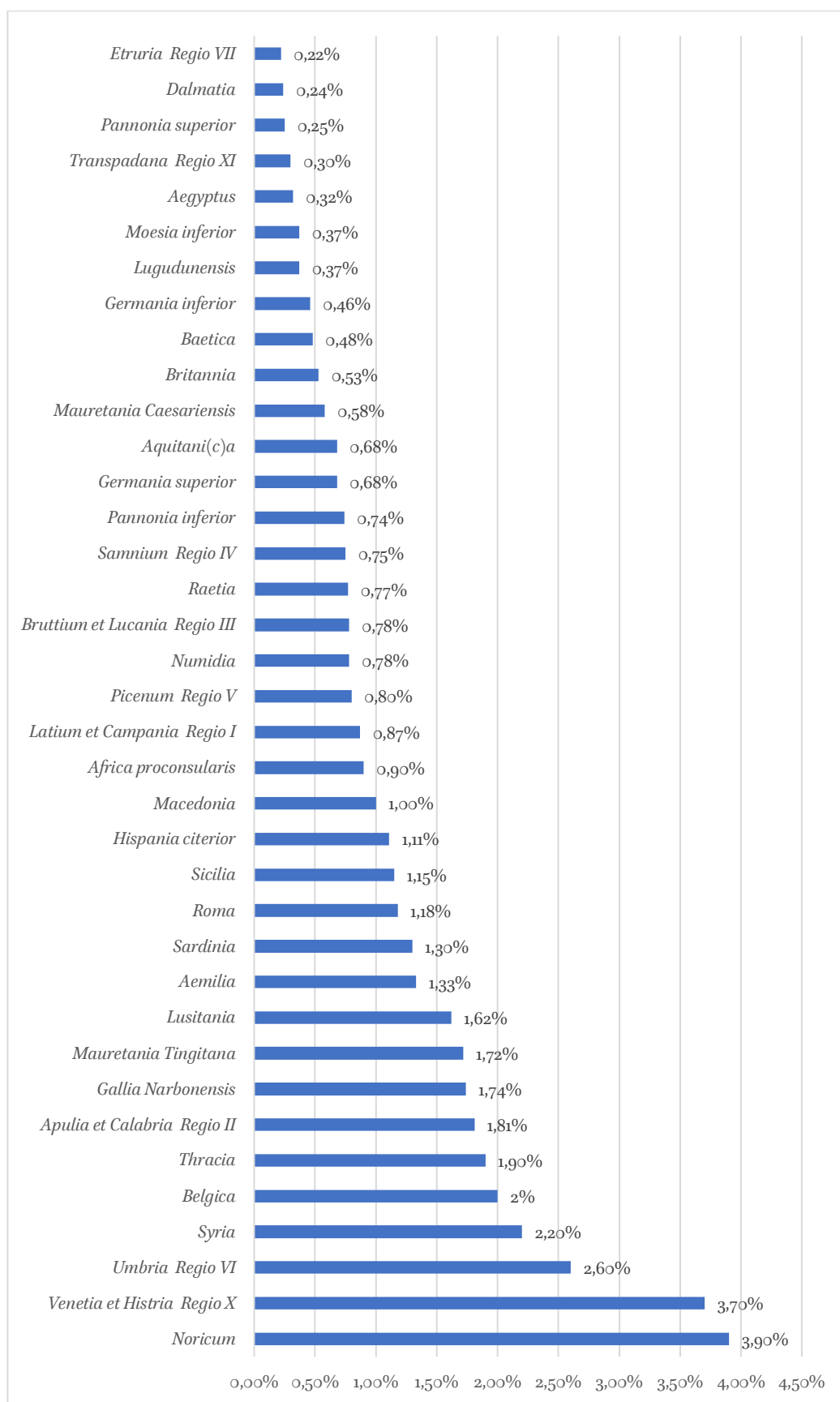


CHART 4.18 /kt/ = <t>: relative frequencies for each area

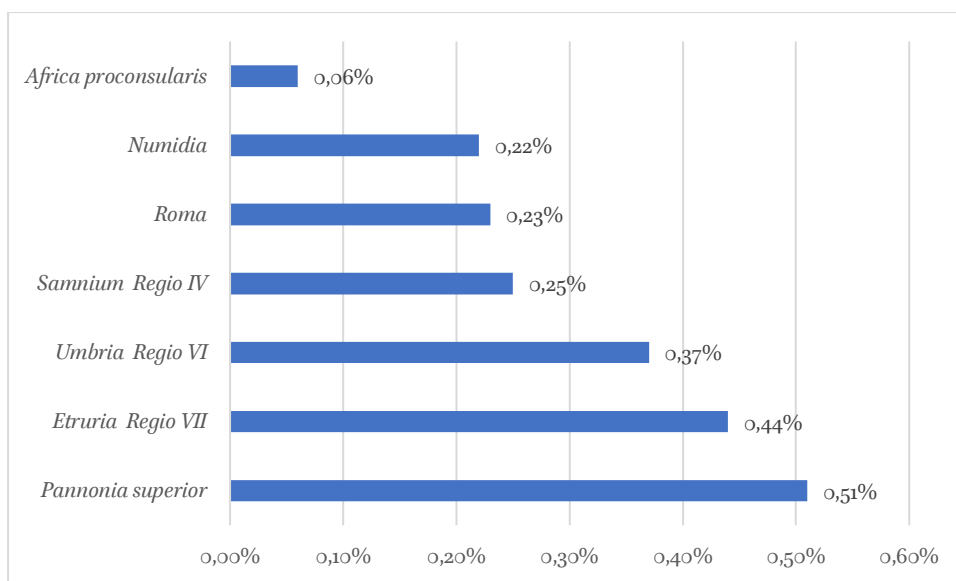


CHART 4.19 /kt/ = <tt>: relative frequencies for each area

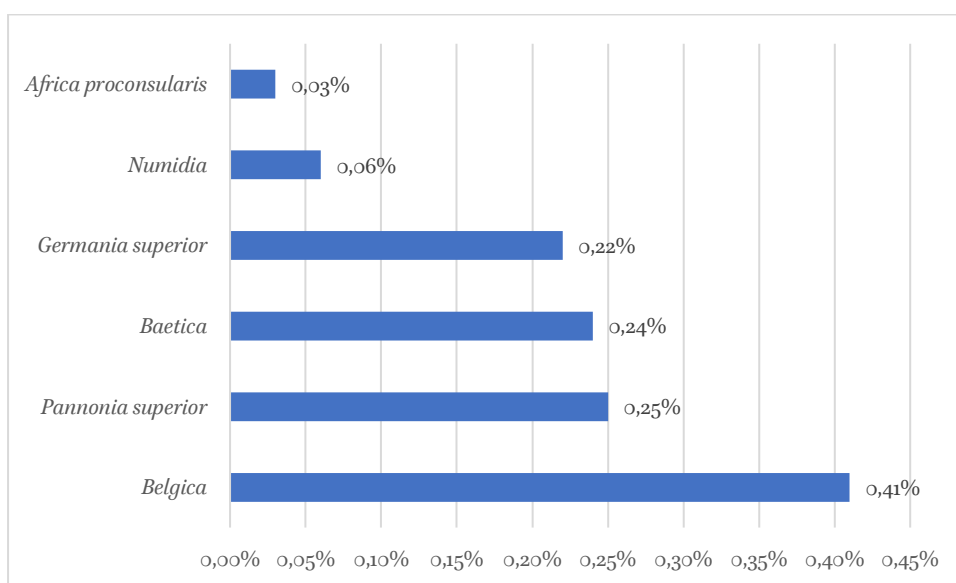


CHART 4.20 /kt/ = <gt>: relative frequencies for each area

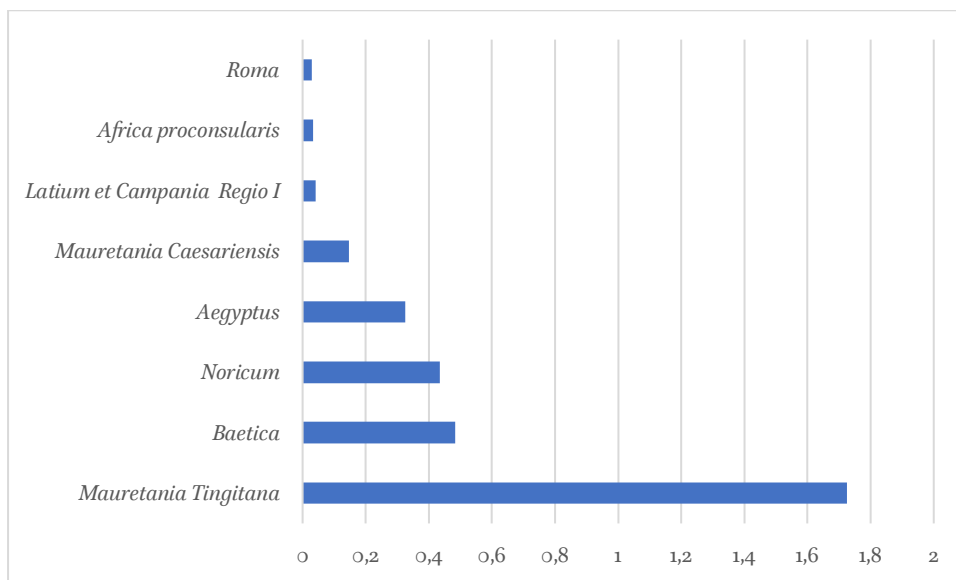


CHART 4.21 /kt/= <et> /<cit>: relative frequencies for each area

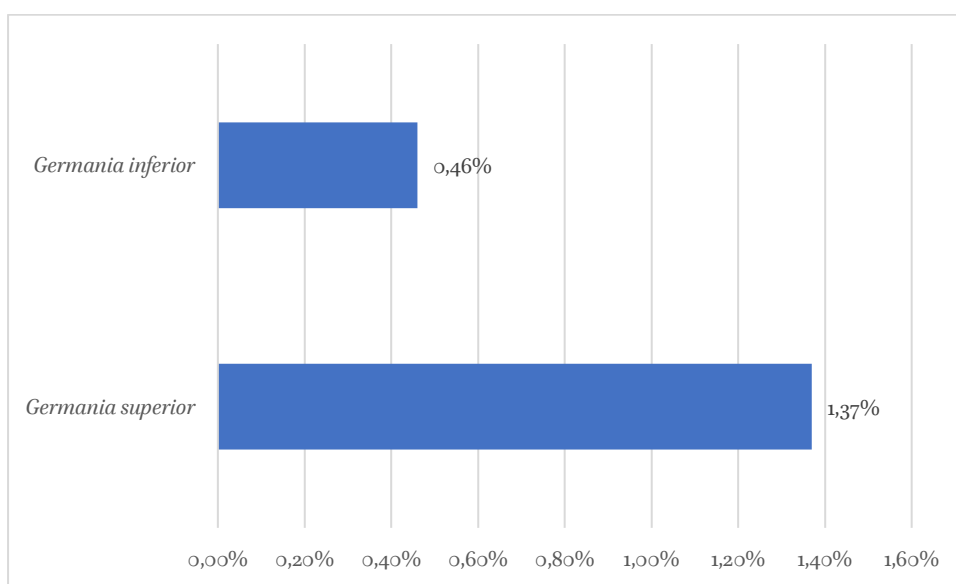


CHART 4.22 /ct/= <xt> /<ht>: relative frequencies for each area

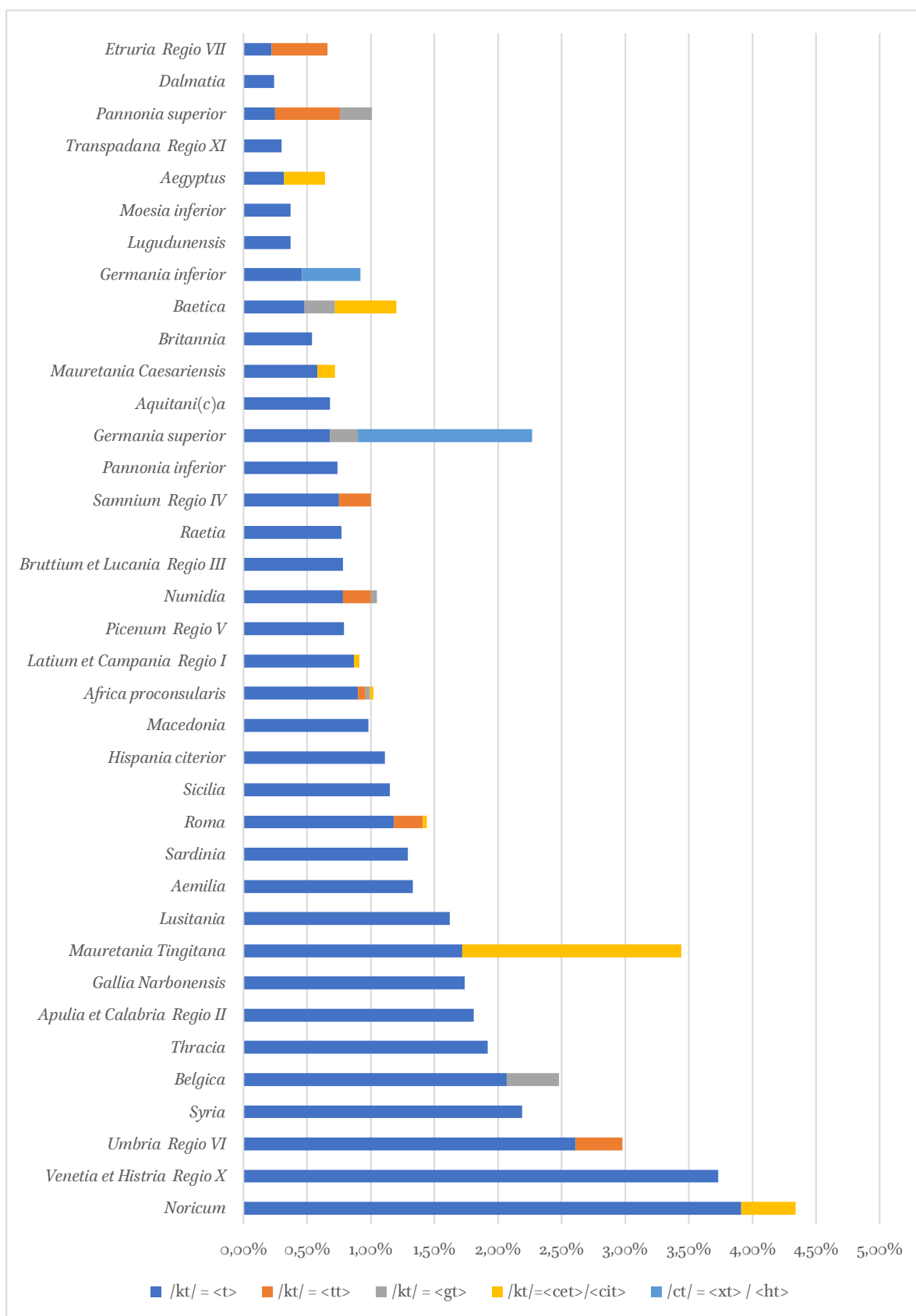
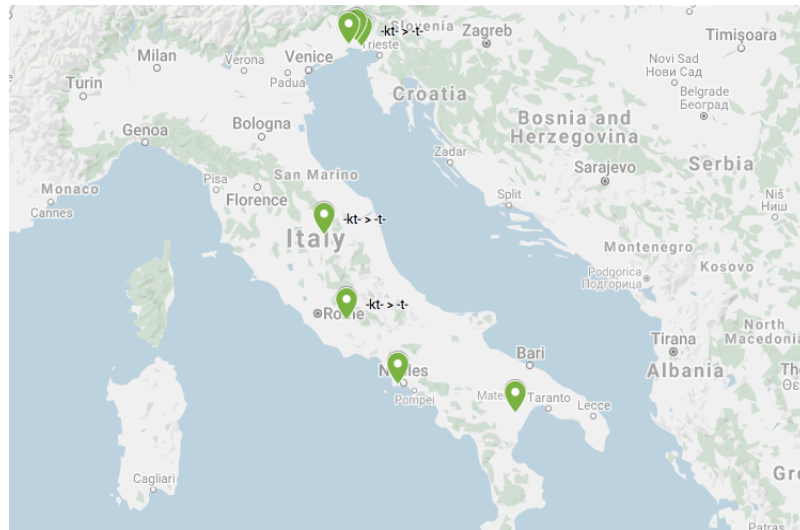


CHART 4.23 Relative frequencies of the misspelling of /kt/ for each area

4.2.3.5 Analysis according to synchronic cuts

4.2.3.5.1 1st century BC

During the 1st century 7, possible forms showing the *-kt- > -t-* treatment are attested. As mentioned in § 4.2.3.3, this is one of the periods showing the highest frequency of the <t> spelling (ca. 2%). These forms are attested in *Venetia et Histria / Regio X*, *Latium et Campania / Regio I*, *Umbria / Regio VI*, *Bruttium et Lucania / Regio III*.



MAP 4.8 Geographical distribution of the possible attestations of <t>, 1st century BC

This treatment affects 3 different lexical types, i.e., *VĪCT-*, *FRŪCT-* and *DŪCT-*, both heavy and superheavy syllables. As for text types, all occurrences are attested in official texts, related to the administration of the municipia.

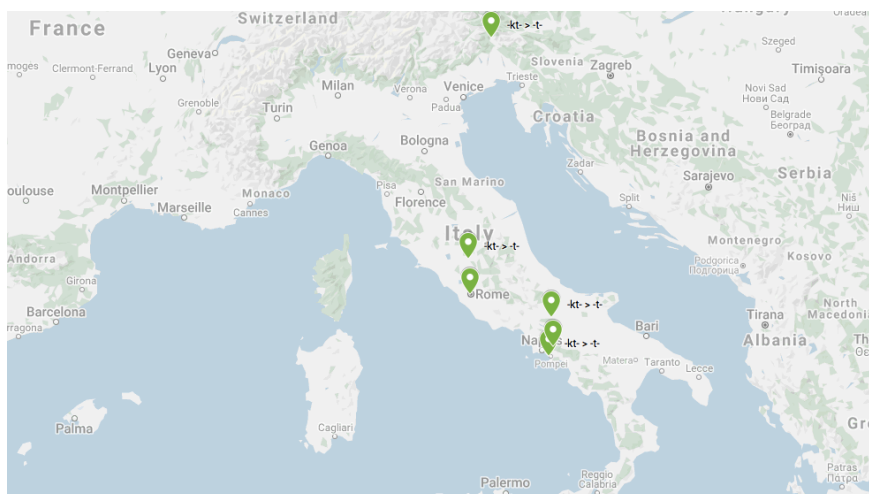
FRUTICIVS	50-31 BC	CIL 95, 989	<i>Venetia et Histria Regio X</i>	<i>Aquileia</i>
FRUTICIVS	50-26 BC	CIL 5, 3339 (p 1095)	<i>Venetia et Histria Regio X</i>	<i>Aquileia</i>
FRUTICIVS	50-26 BC	CIL 5, 3339 (p 1095)	<i>Venetia et Histria Regio X</i>	<i>Aquileia</i>
CONDVTA	45 BC	Crawford-1996, 24	<i>Bruttium et Lucania Regio III</i>	<i>Heraclea</i>
VITOR	7 BC	AE 1989, 290	<i>Umbria Regio VI</i>	<i>Asisium</i>
VITOR	40-1 BC	CIL 10, 2911	<i>Latium et Campania Regio I</i>	<i>Puteoli</i>
VITORIVS	100-51 BC	CIL 10, 5916	<i>Latium et Campania Regio I</i>	<i>Anagnia</i>

TABLE 4.40 Possible attestations of <t>, 1st century BC

The evidence that such forms are not attested in Rome allows to hypothesize that *-kt-* > *-t-* was a feature of the municipal variety of Latin. Nonetheless, as previously discussed (cf. the remarks in § 4.2.3.1), their interpretation is not exempt from doubts.

4.2.3.5.2 BC 1st – 1st AD

During the 1st century 5 possible forms showing the *-kt-* > *-t-* treatment are attested. This is the period with the highest frequency of this spelling (ca. 2,6%). These forms are attested in Venetia et Histria / Regio X, Latium et Campania / Regio I, Umbria / Regio VI, Samnium / Regio IV and Roma.



MAP 4.9 Geographical distribution of the possible attestations of <t>, 1st century BC – 1st century AD

This treatment affects 2 different lexemes, i.e., *FĀCT-* and *VĪCT-*, both heavy syllables. As for text types, most of occurrences are attested in sepulchral inscriptions.

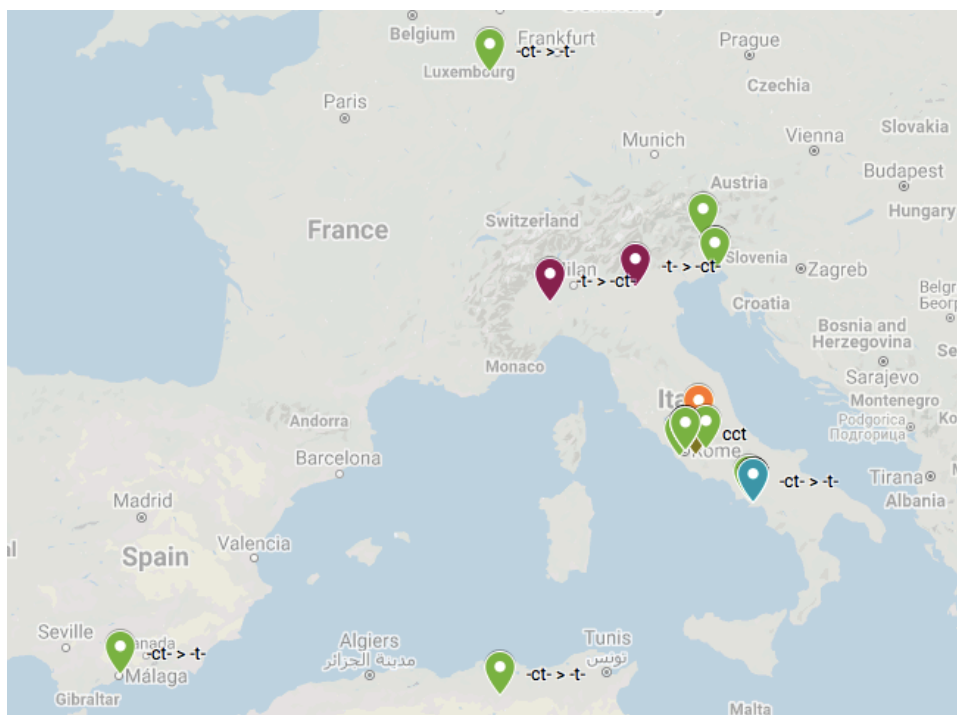
FATA	CIL 4, 1397	Latium et Campania / Regio I	Pompei
VITORIAE	CIL 6, 7671	Roma	Roma
VITOR[IO]	CIL 5, 1844a	Venetia et Histria / Regio X	Carnicum
VITORIH	CIL 9, 2579	Samnium / Regio IV	Bovianum Undecimanorum
VITORIVS	CIL 10, 1277	Latium et Campania / Regio I	Nola

TABLE 4.41 Possible attestations of <t>, 1st century BC – 1st century AD

Again, we may note that this phenomenon, with the exception of Vitoria from Rome, referred to a freedwoman, is mainly widespread in municipal areas, thus pointing at a non-urban variant.

Nonetheless, as previously discussed (cf. the remarks in § 4.2.3.1), the interpretation of some forms is not exempt from doubts.

4.2.3.5.3 1st century AD



Map 4.10 Geographical distribution of the spelling variants of *-kt-*, 1st century AD

Around the 1st century AD, the data framework offers a higher number of attestations as compared to the previous decades, even though, in relative terms, the spelling <t> shows a lower degree of occurrences (0,7 %, cf. TABLE 4.6). Furthermore, other phenomena are found in this period, i.e. the inverse spelling of /t/ via <ct>, orthographical gemination, anaptyxis, and a possible instance of total assimilation (OTTIA, SupIt-18-R, 45, from Reate, though its possible relation with *Octia* > *Ottia* is not exempt from doubts).

The treatment *-kt-* > *-t-* is attested in Roma (5 occurrences), Venetia et Histria / Regio X (4 occurrences), showing also an instance of inverse spelling, Numidia (1 attestation), Belgica (1 attestation). Moreover, the <t> spelling, affecting the lexemes AUCT- and VI(C)T- is attested for the first time also outside the Italian Peninsula.

CONLACCTIO	<i>Tellenae p 149</i>	<i>Tituli sepulcrales</i>	<i>Latium et Campania / Regio I (Tellenae)</i>
RECETE	<i>TPSulp 52</i>	<i>Tituli operum</i>	<i>Latium et Campania / Regio I (Pompei)</i>
OTTIA	<i>SupIt-18-R, 45</i>	<i>Tituli sepulcrales</i>	<i>Samnium / Regio IV (Reate)</i>
FACTO	<i>CIL 5, 3415</i>	<i>Carmina / Tituli sepulcrales</i>	<i>Venetia et Histria / Regio X (Verona)</i>
MAGISTRACTVS	<i>SupIt-13-V, 1</i>	<i>Leges</i>	<i>Liguria / Regio IX (Vardacate)</i>
CONVITORES	<i>CIL 4, 10520</i>	<i>?</i>	<i>Latium et Campania / Regio I (Ercolano)</i>
FATA	<i>CIL 4, 3340,38</i>	<i>Receipt</i>	<i>Latium et Campania / Regio I (Pompei)</i>
OTAVS	<i>CIL 4, 4870</i>	<i>Tituli operum</i>	<i>Latium et Campania / Regio I (Pompei)</i>
OTOGE[NTOS]	<i>CIL 4, 3340,26</i>	<i>Receipt</i>	<i>Latium et Campania / Regio I (Pompei)</i>
VITORIAE	<i>GIF-1960-109</i>	<i>Tituli sepulcrales</i>	<i>Latium et Campania / Regio I (Sublaqueum)</i>
VITORIVS	<i>CIL 14, 244</i>	<i>Leges</i>	<i>Latium et Campania / Regio I (Ostia Antica)</i>
FRUTIC[I]	<i>CIL 5, 8285</i>	<i>Tituli sepulcrales</i>	<i>Venetia et Histria / Regio X (Aquileia)</i>
FRUTIC[I]	<i>CIL 5, 1219</i>	<i>Tituli sepulcrales</i>	<i>Venetia et Histria / Regio X (Aquileia)</i>
VITORI	<i>InscrAqu-2, 2545</i>	<i>Tituli sepulcrales</i>	<i>Venetia et Histria / Regio X (Aquileia)</i>
EPITETVS	<i>NSA-1923-390</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITORI	<i>Libitina-2004, 18</i>	<i>Tituli operum</i>	<i>Roma</i>
VITORIO	<i>Vivo 44</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITORIVS	<i>CIL 6, 8104</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
AVTORIT	<i>EConfines 68</i>	<i>Tituli operum</i>	<i>Numidia (Ain Abid)</i>
VITORIA	<i>CIL 2-14, 106</i>	<i>Tituli sepulcrales</i>	<i>Hispania citerior (Valentia)</i>
V]ITRIC[IS	<i>Estremadure 1</i>	<i>Tituli honorarii</i>	<i>Lusitania (Alcazana)</i>
VITORIO	<i>ILB 60</i>	<i>Tituli sepulcrales</i>	<i>Belgica (Treveri)</i>

TABLE 4.42 Possible attestations of the misspellings of /kt/, 1st century AD

In relative terms, *Venetia et Histria / Regio X* and *Latium et Campania / Regio I* (notably Pompeii), show the higher frequency of this spelling, thus confirming a possible trend also emerging from the data framework of the previous decades. If, on the one hand, the instances from *Venetia et Histria / Regio X* are open to ambiguous interpretation, the attestations from Pompeii result to be more diriment and affect 3 different lexemes. Conversely, Rome shows an increase of the attestations, as compared to the previous century because of the penetration of the *gens Vi(c)toria* and the surfacing of phonetic spellings due to the adaptation of foreign names, as in the case of <EPITETVS> (NSA-1923-390).

Peculiarly, *Campania* shows, besides the highest frequency of the <t> spellings, also an instance of vowel insertion, i.e., <RECETE> (*TPSulp* 52), ascribable to Novius Eunus' interlanguage (cf. Adams 1990, p. 232; 2003, p. 157). This phenomenon goes against the parallel process of weakening.



FIGURE 4.22 *Tellanae* p. 149; AE 1967, 59

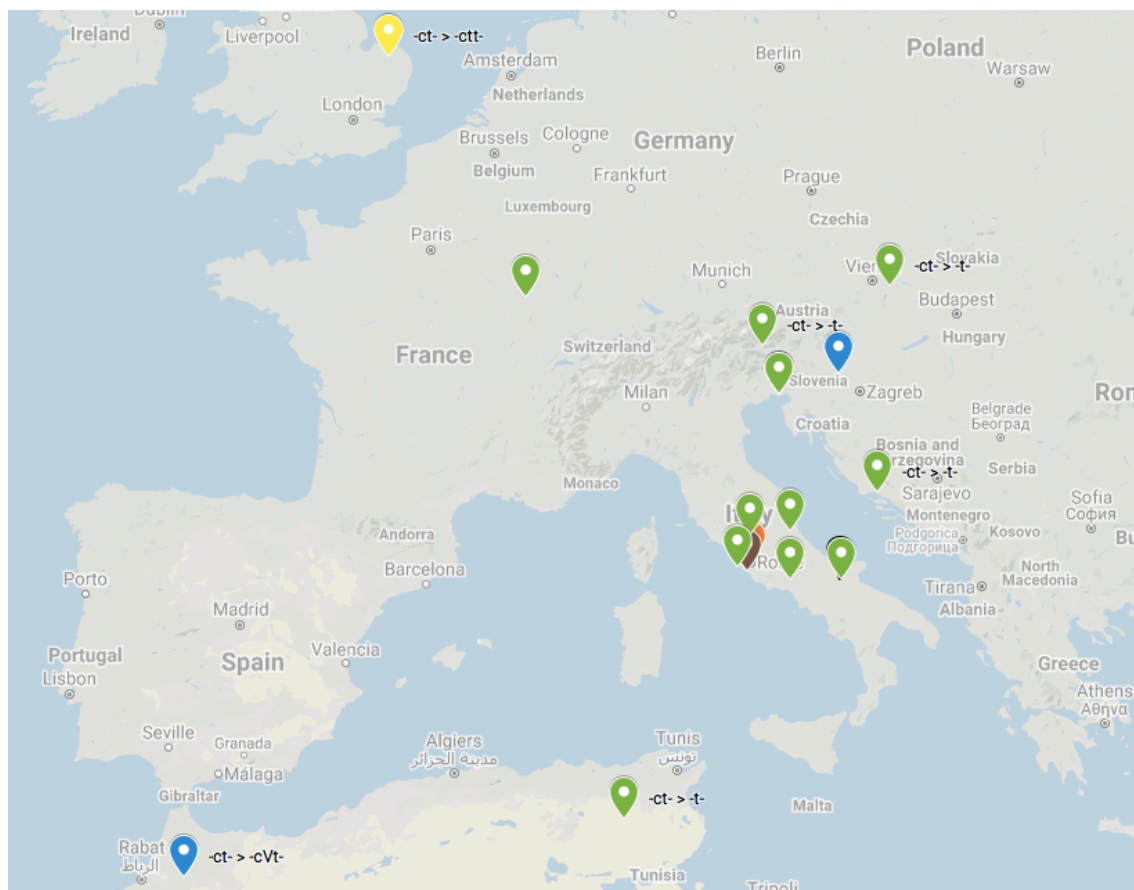
A further instance of fortition, or, rather, of a tendency going against coda reduction, is provided by orthographical gemination in <CONLACCTIO> (AE 1967, 59), from *Tellanae* (San Cesarea). Noteworthy, the etymological spelling <CONL> points at the attempt by the engraver to define syllabic/morphological boundaries (cf. FIGURE 4.3).

Therefore, we may observe that, during the 1st century AD, the -kt- > -t- treatment, which shows a peculiar frequency in *Campania* and, possibly, *Venetia et Histria / Regio X*, is progressively spreading outside the Italian Peninsula.

4.2.3.5.4 1st – 2nd century AD

Between the 1st and 2nd century AD, the data frameworks shows a higher variability. Besides the occurrences of -kt- > -t- (overall 19; 1,3% in relative terms), we may find also 3 instances of vowel insertion within the heterosyllabic cluster, 3 instances of orthographical gemination and one certain attestation of total assimilation. The spelling <T> is attested in *Belgica* (1 attestation), *Apulia et Calabria / Regio II* (2 attestations), *Umbria / Regio VI* (1 attestation), *Noricum* (3 attestations), *Africa proconsularis* (1 attestation), *Venetia et Histria / Regio X* (2 attestations), *Picenum / Regio V* (1 attestation), *Pannonia superior* (1 attestation), *Latium et Campania / Regio I* (2 attestations), *Dalmatia* (1 attestation), *Roma* (3 attestations). Some areas show two phenomena: *Africa*

proconsularis and *Noricum* attests also instances of anaptyxis. At Rome, moreover, also the instances of orthographical geminations <CCT> and the first instance of regressive assimilation are found.



MAP 3.11 *Geographical distribution of the spelling variants of -kt-, 1st-2nd century AD*

ΑΕΠΙΤΤΕΤΥΣ	CIL 6, 17213	Tituli sepulcrales	Roma
ΥΙΚΤΘΩΠΙΑΜ	ZPE-149-261	Tituli possessionis	Britannia (Billingford)
RESPECCTO (X 2)	CIL 6, 39078	Tituli sepulcrales	Roma
SPECETATVS	CIL 3, 1467/2	Tituli sepulcrales	Noricum (Celeia)
VICITOR	IAM-2-2, 647	Tituli sepulcrales	Mauretania Tingitana (Volubilis)
INVICITI	ILAlg-2-02, 4400	Tituli sepulcrales	Hr. el Thignica
FRVTI	CIL 3, 11220	Tituli sepulcrales	Pannonia superior (Carnuntum)
FRVTICIA	CIL 5, 796	Tituli sacri	Venetia et Histria / Regio X (Aquileia)
FRVTICIAE	CIL 05, 794	Tituli sacri	Venetia et Histria / Regio X (Aquileia)
VITORIA (X 2)	CIL 11, 4372	Tituli sepulcrales	Umbria / Regio VI (Ameria)
VITORIA (X 2)	CIL 9, 899	Tituli sepulcrales	Apulia et Calabria / Regio II (Luceria)
VITORIA	CIL 9, 5108	Tituli sepulcrales	Picenum / Regio V (Interamnina Praetuttiorum)
VITORIAE (X 2)	SEBarc-13, p 62	Tituli sepulcrales;	Latium et Campania / Regio I (Aquinum)

VITORIAE (x 2)	CIL 6, 29099	Tituli sepulcrales	Roma
PROTOTETVS	CIL 6, 20238	Tituli sepulcrales	Roma
VITORIA	CIL 3, 2429	Tituli sepulcrales	Dalmatia (Salona)
VITORIO (x 3)	ILLPRON 1048	Tituli sepulcrales	Noricum (Aguntum)
NOTVRNA	AE 1969/70, 430	Tituli sepulcrales	Belgica (Andemantunnum)
FRVTOSA	CIL 8, 387	Tituli sepulcrales	Africa proconsularis (Ammaedara)

TABLE 4.43 Possible attestations of misspellings of /kt/, 1st-2nd century AD

The attestations of the <t> spelling mainly concern the *gentilicium* *Vitorius*, circulating in Rome and other areas of Central Italy, as well as in *Dalmania*, *Pannonia* and *Noricum*, possibly via the *Venetia et Histria* route, attesting this *gentilicium* since the preceding century; similarly, the *gentilicium* *Frutius* may have been spread in Pannonia from *Venetia et Histria*. More productive phenomena are attested, in particular, in *Africa proconsularis* and *Belgica*, in correspondence of road junctions.

Moreover, we may notice an increase of phenomena going against coda reduction: 3 instances of insertions are attested in this period, in *Noricum*, *Belgica* and *Africa proconsularis*, mainly in inscriptions related to a servile *milieu*: we may suppose that, as in the case of Novius Eunus, it is dealt with ephemeral processes of L2 acquisition.

Around the same period, moreover, we may note two attestations of the orthographic gemination (<CCT>) affecting *Respectus*, a *cognomen* prone to the -ct- > -t- process. Notably, Rome records the very first instance of -ct- > -tt-, emerging, as one would expect, in the adaptation of a foreign name, i.e. <AEPITTETVS> (cf. PICTURE 4.4).



FIGURE 4.23 First instance of -kt- > -tt- (CIL 6, 17213)

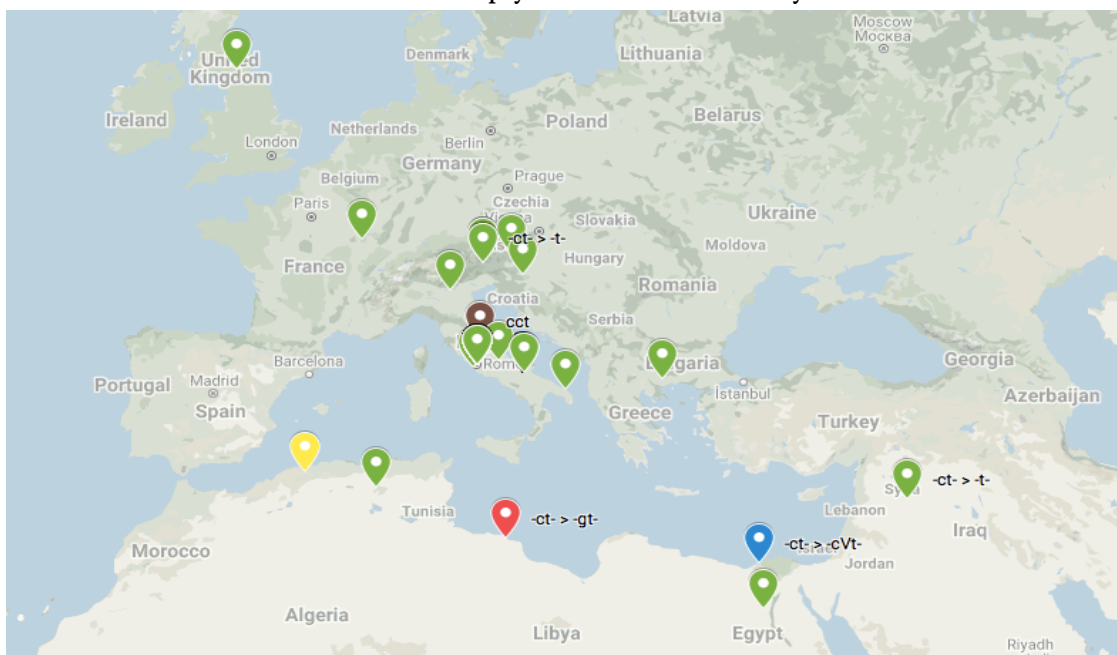
A very noteworthy case is YIKTΘΩPIAM (ZPE-149-261), in Greek script, possibly hinting at assimilation as well. Without further clues, we may suppose that in the 1st century the phenomenon -kt- > -tt- was progressively emerging, possibly at Rome, whereas the process -kt- > -t-,

which previously was allegedly a municipal feature, is progressively expanding in some provinces, possibly due to processes of geographical mobility.

4.2.3.5.5 2nd century AD

Around the 2nd century AD, we may notice, again, different outcomes, consistently with the framework illustrated so far. The outcome *-kt- > -t-* is attested, as a whole, 40 times (1,3%). Besides, there are also instance of *-kt- > -tt-* (3 occurrences, 0,2%), insertion (a unique attestation) and *-kt- > -gt-* (a unique attestation).

The outcome *-kt- > -t-* is documented, in absolute terms, mainly at Rome, with 21 occurrences, mainly related, again, to the *gentilicium Vitorius*. In relative terms, it would seem that a higher frequency occurs in *Noricum* (6 attestations, 10,5%), *Apulia et Calabria / Regio II* (3 attestations, 8,5%), Syria (1 attestation, 6,6%), *Macedonia* (1 attestation, 3,8%), Roma (21 attestations, mainly occurring within the same inscriptions, 3,21%), Britannia (1 attestation, 2,57 %), *Samnium / Regio IV* (1 attestation, 1,78%), *Venetia et Histria / Regio X* (1 attestation, 1,16%), *Numidia* (1 attestation, 1 %), *Latium et Campania / Regio I* (2 attestations, 0,5%). Conversely, this treatment is not found in *Africa proconsularis*, which documents an instance of *-ct- > -gt-*. Some areas show the co-occurrence of different phenomena: Roma shows also 3 instances of *-ct- > -tt-*, *Aegyptus* shows, besides the treatment *-ct- > -t-*, also an instance of anaptyxis within the heterosyllabic cluster.



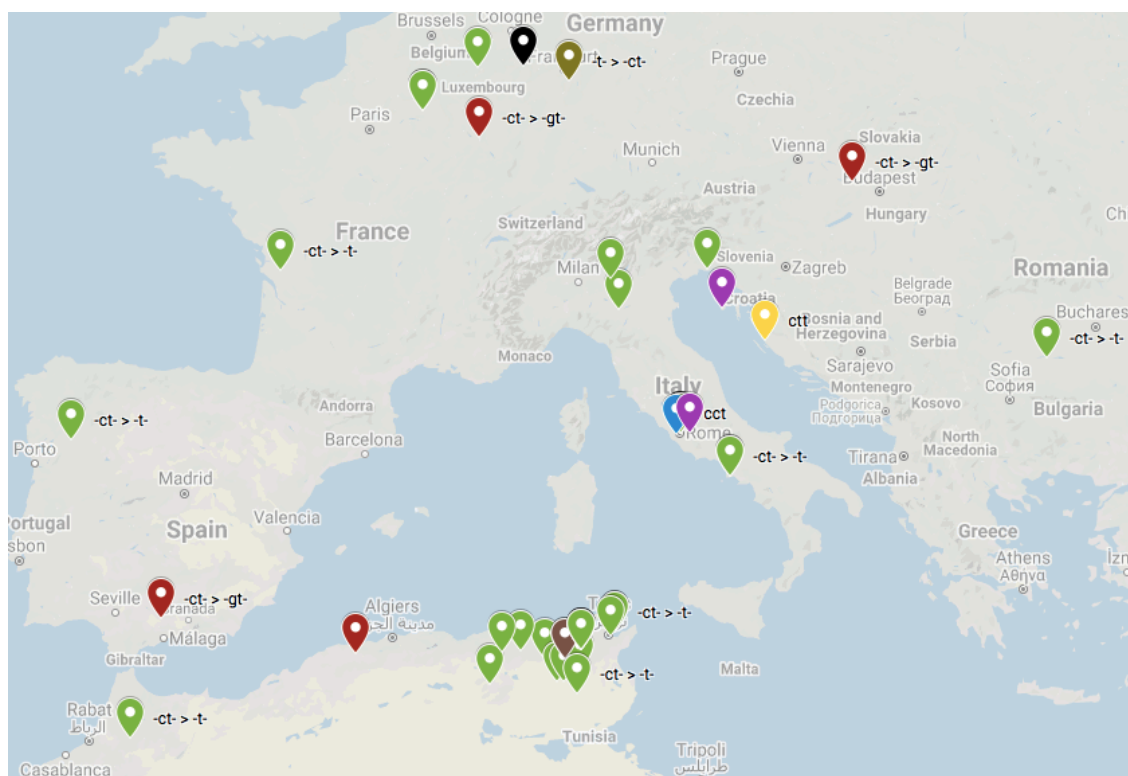
MAP 4.12 Geographical distribution of the spelling variants of *-kt-*, 2nd century AD

VICTORIA(NVS)	<i>ILAlg-2-1, 2588</i>	<i>Tituli sepulcrales</i>	<i>Numidia (El Meraba)</i>
VEGTIG(ALIS)	<i>IRT 315a</i>	<i>Tituli operum</i>	<i>Africa proconsularis (Khomas)</i>
[V]ICITVRVM	<i>CEL 142</i>	<i>Private letter</i>	<i>Aegyptus (Alexandria)</i>
VITTORINAE	<i>CIL 6, 5</i>	<i>Tituli sacri / liberti</i>	<i>Roma</i>
A]MBATTI	<i>Denkm 236</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
[AM]BATTO	<i>CIL 6, 32814</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITORIO	<i>CIL 6, 4m6</i>	<i>Tituli sepulcrales / ordo senatorius</i>	<i>Roma</i>
VITOR-(X 29)	<i>CIL 6, 2078</i>	<i>Tituli operum / ordo senatorius</i>	<i>Roma</i>
VITORI- (X 6)	<i>CIL 6, 2079</i>	<i>Tituli operum / ordo senatorius</i>	<i>Roma</i>
VITORIVS (X 9)	<i>CIL 6, 2080</i>	<i>Tituli operum / ordo senatorius</i>	<i>Roma</i>
VITOR	<i>CIL 6, 3899</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
CONVITRICI	<i>CECapitol 50</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
AVTORITATE	<i>CIL 6, 31553</i>	<i>Tituli sacri</i>	<i>Roma</i>
VITORIAE (X 2)	<i>CIL 9, 900</i>	<i>Tituli sepulcrales</i>	<i>Apulia et Calabria / Regio II (Lucera)</i>
ADAVTAE	<i>CIL 9, 3252</i>	<i>Tituli sepulcrales</i>	<i>Samnium Regio IV (Corfinium)</i>
TRATORIA	<i>CIL 5, 3937</i>	<i>Tituli sepulcrales</i>	<i>Venetia et Histria / Regio X (Arusnates)</i>
EXATI	<i>ISIS 35</i>	<i>Tituli sepulcrales</i>	<i>Latium et Campania Regio I (Portus)</i>
ADAVTVS	<i>CIL 14, 4569</i>	<i>Tituli honorarii</i>	<i>Latium et Campania Regio I (Ostia Antica)</i>
FATVS	<i>Philippi 522</i>	<i>Tituli sacri</i>	<i>Macedonia</i>
OTAVS	<i>CPL no</i>	<i>Account and lists</i>	<i>Aegyptus</i>
VITORIAE	<i>CIL 3, 5059</i>	<i>Tituli sepulcrales</i>	<i>Noricum (Noreia)</i>
VITORINVS	<i>CIL 3, 5128</i>	<i>Tituli sepulcrales</i>	<i>Noricum (Celeia)</i>
VITORIO (X 2)	<i>Grabherr p 449</i>	<i>Tituli sepulcrales</i>	<i>Noricum (Aguntum)</i>
VITOR- (X 2)	<i>ILLPRON 353</i>	<i>Tituli sepulcrales</i>	<i>Noricum (Pokhorn)</i>
VITOR	<i>CIL 08, 18419</i>	<i>Tituli sepulcrales</i>	<i>Numidia (Lambaesis)</i>
VEIVRAE	<i>Tab. Vindol. 500</i>	<i>Account and lists</i>	<i>Britannia</i>
NOTVRIN[V]S	<i>CIL, 13, 5841</i>	<i>Tituli sepulcrales</i>	<i>Germania superior (Andemantunnum)</i>
VITORIO	<i>RMD-1, 9</i>	<i>Tituli sepulcrales</i>	<i>Syria</i>

TABLE 4.44 Possible attestations of misspellings of /kt/, 2nd century AD

Rome results to be again the area cwherein the treatment *-kt-* > *-tt-* progressively emerges. The form with anaptyxis <VICITVRVM>, found in Claudius Terentianus, unless it is not a morphological variant, would confirm the ephemeral and interlinguistic nature of this phenomenon.

4.2.3.5.6 2nd-3rd century AD



MAP 4.13 *Geographical distribution of the spelling variants of -kt-, 2nd-3rd century AD*

Documentary evidence between the 2nd and 3rd century AD shows 36 forms of <t> (0,9%), but also instances of inverse spellings. A form hinting at total assimilation comes from Rome, as well as instances of inverse spellings of /tt/ via <ct>, pointing at total assimilation, restricted to the noun *Vectius* and derivatives (found also in *Samnium* and *Venetia et Histria*). The treatment -kt- > -t- is more attested in *Mauretania Tingitana* (1 instance), *Belgica* (3 instances), *Venetia et Histria Regio X* (2 attestations), *Aemilia* (1 attestazione), *Moesia inferior* (1 attestazione), *Africa proconsularis* (14 attestations, 1,6%), *Latium et Campania / Regio I* (3 attestations, 1%), *Hispania citerior* (1 attestation), *Germania superior* (1 attestation), Roma (6 attestations, 0,7%) and *Numidia* (3 attestations, 0,67%). *Baetica* does not present instances of -kt- > -t-, but attests to an instance of <GT>, which is documented in *Pannonia superior* and *Belgica* as well. In *Germania superior* the form <AMBAXIVS> is

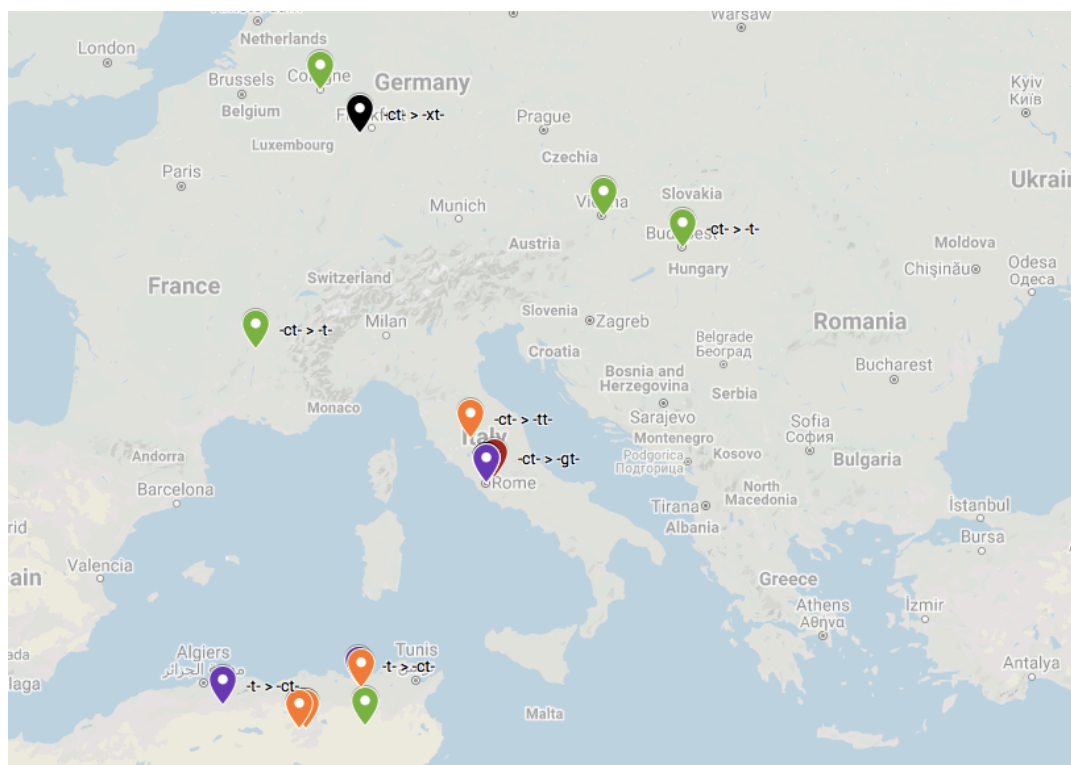
documented, hinting at Gaulish spirantization or even at an early instance of interference with the Germanic languages.

AVCCTO	CIL 6, 12796	Tituli sepulcrales	Roma
VICCTOR	CIL 8, 27626	Tituli sepulcrales	Africa proconsularis (Sicca Veneria)
PACCTVMEIAE	CIL 6, 22913	Tituli sepulcrales	Roma
COLLACTTO[	Lupa 23119	Tituli sepulcrales	Dalmatia
INVICITAE	CIL 6, 80	Tituli sacri	Roma
ADLEGT(US)	CIL 2-5, 900	Tituli operum	Baetica
VIGTORINVS	CIL 13, 4674	Tituli sepulcrales	Belgica (Tulhum)
INVIGTO	CIL 3, 11008	Tituli sacri	Pannonia superior
VIGTOR	ILAlg-2-1, 2583	Tituli sepulcrales	Numidia (Celtianum Celtianis)
AMBAXIVS	CIL 13, 6463	Tituli sacri	Germania superior (Burg)
VECTIVS	CIL 5, 247	Tituli sepulcrales	Venetia et Histria/ Regio X (Pola)
VECTIEIDA[E]	CIL 9, 4264	Tituli sepulcrales	Samnium / Regio IV (Amiternum)
VECTIENIA	CIL 6, 28660	Tituli sepulcrales	Roma
FACTI	CIL 13, 06435	Tituli sepulcrales	Germania superior
VITOR	AE 2009, 344	Tituli sepulcrales	Aemilia / Regio VIII (Parma)
ADAVTAE	ILAlg-1, 1048	Tituli sepulcrales	Africa proconsularis (Thagura)
VITORINA	AE 1989, 805	Tituli sepulcrales	Africa proconsularis (Sufetula)
FRVTILA	ILTun 1109,24	Tituli sepulcrales	Africa proconsularis
OTAVIA	CIL 8, 548	Tituli sepulcrales	Africa proconsularis
VITORINUS	MAD 46	Tituli sepulcrales	Africa proconsularis (Thugga)
OTAVIA	CIL 8, 7096	Tituli sepulcrales	Africa proconsularis
VITORIA	CIL 8, 27108a	Tituli sepulcrales	Africa proconsularis (Thugga)
VITORA	IL Afr 588,182	Tituli sepulcrales	Africa proconsularis (Thugga)
OTO	AE 1906, 131	Tituli sepulcrales	Africa proconsularis
FRVTVOSVS	CIL 8, 11607	Tituli sepulcrales	Africa proconsularis
VITORIA	CIL 8, 24496	Tituli sepulcrales	Africa proconsularis (Gebel Djelloud)
VITOR	CIL 8, 15423	Tituli sepulcrales	Africa proconsularis (Kouchbatia)
OTAVIA	CIL 8, 16151	Tituli sepulcrales	Africa proconsularis
ADAVTVS	CIL 8, 12506	defixio	Africa proconsularis
STRVT[ORES]	CIL 13, 1034	Tituli sepulcrales	Aquitani(c)a (Santonum)
VITORIN-(X 2)	RIRs 00197	Tituli sepulcrales	Belgica (Durocortorum)
VITORIVS	ILB 60	Tituli sepulcrales	Belgica Germania inferior (Cherain)
VITORIA	CIL 10, 1921	Tituli sepulcrales	Latium et Campania / Regio I (Puteoli)

VITORI-(X 2)	<i>CIL 10, 379</i>	<i>Tituli sepulcrales</i>	<i>Latium et Campania / Regio I (Puteoli)</i>
VITOR	<i>CIL 8, 21889</i>	<i>Tituli sepulcrales</i>	<i>Mauretania Tingitana (Volubilis)</i>
INVITO	<i>ILBulg 30</i>	<i>Tituli sepulcrales</i>	<i>Moesia inferior</i>
ADZETVS	<i>CIL 8, 18918</i>	<i>Tituli sepulcrales</i>	<i>Numidia (Thibilis)</i>
OTEAVIA	<i>CIL 8, 6242</i>	<i>Tituli sepulcrales</i>	<i>Numidia (Emadaucapensis)</i>
ADAUTVS	<i>CIL 8, 4157</i>	<i>Tituli sepulcrales</i>	<i>Numidia (Lambaesis)</i>
EPITESIS	<i>CIL 6, 18327</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
FRVTVOSA	<i>CIL 6, 26185</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITORI	<i>CIL 6, 29096</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITOR- (X 2)	<i>CIL 6, 29098</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITORINVS	<i>CIL 6, 3236</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
RESSPETVS	<i>CIL 5, 796</i>	<i>Tituli sepulcrales</i>	<i>Venetia et Histria / Regio X (Aquileia)</i>
COATOR(ES)	<i>CIL 5, 4505</i>	<i>Tituli sepulcrales</i>	<i>Venetia et Histria / Regio X</i>

TABLE 4.45 Possible attestations of misspellings of /kt/, 2nd-3rd century AD

4.2.3.5.7 3rd century AD



MAP 4.14 Geographical distribution of the spelling variants of -kt-, 3rd century AD

Around the 3rd century, there are, respectively, 8 instances of <T>, 7 of <TT>, 1 of <GT>, 1 of <XT>. The treatment *-kt- > -t-* is found mainly in *Mauretania Caesariensis* (1 attestation), *Pannonia inferior* (1 attestation), *Africa proconsularis* (1 attestation) and Rome (2 attestations). *Numidia* does not present cases of *-kt- > -t-*, but 4 cases of *-kt- > -tt-* (11, 11%). Assimilated forms are attested also in *Etruria*, *Africa proconsularis* and *Rome*. *Germania superior* shows a case of <GT> and one instance of <XT> (<AMBAXTVS>), possibly reflecting the Gaulish spelling (cf. e.g., *Rextugenos*).

ATREGTVS	CIL 13, 7281	tituli sepulcrales	Germania superior
AMBAXTVS	CIL 13, 11774	tituli sacri	Germania superior
OTTOBRES	CIL n, 2537	tituli sepulcrales	Etruria / Regio VII
OTTACILVS	CIL 8, 3952	tituli sepulcrales	Numidia (Lambaesis)
OTTACILVS	CIL 8, 2568	tituli sepulcrales	Numidia (Lambaesis)
OTTACILIAE	BCTH-1951/52-228,4	miliaria	Numidia (Thamugadi)
OTTACILIA	CIL 8, 2417	miliaria	Numidia (Thamugadi)
OTTACILLA	BCTH-1907-CCLIII	miliaria	Africa proconsularis (Koudiat-Saria)
VITTORI	ICUR-4, 10260	tituli sepulcrales	Roma
OPT(OBRES)	ICUR-8, 21307	tituli sepulcrales	Roma
VITOR	ICUR-4, 10238u	tituli sepulcrales	Roma
AVTILLE	CIL 6, 226	tituli sepulcrales	Roma
BITORIVS	AE 1990, 733	tituli sepulcrales	Germania inferior (Colonia)
INVITO	CIL 12, 5561	tituli sepulcrales	Gallia Narbonensis (Vienna)
INVITO	TitAq-1, 351	tituli sepulcrales	Pannonia inferior
INVITO	CIL 17-2, 172	miliaria	Gallia Narbonensis (Arras-sur-Rhone)
VITORICVS	Haidra-6, 179	tituli sepulcrales	Africa proconsularis (Haydrah)
VITORINAE	CIL 8, 9090	tituli sepulcrales	Mauretania Caesariensis (Sour El-Ghozlane)

TABLE 4.46 Possible attestations of misspellings of /kt/, 3rd century AD

4.2.3.5.9 4th century AD

The 4th century is the last period in which it is possible noticing a certain variability of spellings, i.e. <T>, <TT>, <HT> (respectively 25, 6 and 4 attestations). Rome shows 17 occurrences of the *-kt- > -t-* treatment, mainly concerning the names *Vitor-* and *Adautus* in Christian inscriptions

(in correspondence to the spread of the worship to this martyr), but shows instances of total assimilation as well, surfacing also in official texts. Note, moreover, that the formulas *deo invicto* / *impp invictis* are often spelled erroneously in *miliaria* found in different provinces.

INVIH[TO]	<i>Finke 163</i>	<i>Tituli sacri</i>	<i>Germania superior</i>
INVIHT[O]	<i>Finke 163</i>	<i>Tituli sacri</i>	<i>Germania superior</i>
INVIHTO	<i>Finke 165</i>	<i>Tituli sacri</i>	<i>Germania superior</i>
[I]NVIHT[O]	<i>Finke 166</i>	<i>Tituli sacri</i>	<i>Germania superior</i>
OTTOBRES	<i>ICUR-4, 10975 = ILCV 02999c</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
EPI]TTETO	<i>ICUR-3, 6837b</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
OTTABV	<i>ICUR-06, 15620</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
OTTO	<i>ICUR-7, 18436</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
LATTVCA	<i>EDICT. Imp. Diocl. III/IV 6, 7</i>	<i>Official inscription</i>	
D]ALMAKTIO	<i>ICUR-5, 13894</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
AVTILLE	<i>ICUR-6, i16082a</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
AVTORES	<i>CIL 6, 4631</i>	<i>Tituli sepulcrales</i>	<i>Umbria Regio VI (Carsulae)</i>
[A]DAVTI	<i>AE 1955, 29a</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
OTAVO	<i>InscrAq-3, 3115</i>	<i>Tituli sepulcrales</i>	<i>Venetia et Histria Regio X</i>
INVITO	<i>AE 1996, 458</i>	<i>miliaria</i>	<i>Apulia et Calabria Regio II</i>
INVITO	<i>ILAlg-1, 3972</i>	<i>miliaria</i>	<i>Numidia</i>
VTOBRES	<i>CIL 9, 7441</i>	<i>Tituli sepulcrales</i>	<i>Samnium Regio IV (Superaequum)</i>
PRAEFETIS	<i>CCCA-3, 366</i>	<i>Tituli sacri</i>	<i>Latium et Campania Regio I (Ostia Antica)</i>
VITORIA	<i>ICUR-9, 25603</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITORIS	<i>ICUR-9, 25628</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
OT(OBRIBUS)	<i>ICUR-2, 4606</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
OTOBRIS	<i>ICUR-2, 6322b</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITORA	<i>EDCS-34800417</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITOR	<i>ICUR-8, 22648</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
ADAVTVS	<i>ICUR-3, 8644</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
ADAVTVS	<i>ICUR-3, 8645</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITOR[	<i>ICUR-4, 10238u</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
OTOBR(I)UM	<i>ICUR-1, 1492</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
OTB(RES)	<i>ICUR-7, 17700</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITTORIS	<i>ICUR-1, 2447</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
OTO(BRES)	<i>ICUR07, 20529</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITORINUS	<i>ICUR-7, 20529</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
VITORA	<i>ICUR-7, 19493</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>

VITOR	<i>ICUR-7, 19316</i>	<i>Tituli sepulcrales</i>	<i>Roma</i>
PROTETORE	<i>TitAq-2, 613</i>	<i>Tituli sepulcrales</i>	<i>Pannonia inferior (Aquincum)</i>
INVITO	<i>Thomsen-1917, 64</i>	<i>Miliaria</i>	<i>Syria</i>

TABLE 4.47 Possible attestations of misspellings of /kt/, 4th century AD

It is worth paying attention to the spelling <HT> affecting *invictus* (<INVIHTO>), found 4 times in *Germania Superior*, more precisely at Gimmeldingen, along the Western Rhine coast. This spelling is paralleled by <OHTVBERES>, dated to the 6th century AD, from Cologne (*CIL* 13, 8481). Adams (2003, p. 439; 2013, p. 175) maintains that this spelling should be attributed to Celtic interference, hinting at Gaulish spirantization. Nonetheless, Celtic spirantization is usually represented in Gallo-Latin texts, as well as in some Latin inscriptions, by <XT>, as previously seen, and the date of these inscriptions is later than other ones attesting this kind of Celtic interference. Rather, such spellings would hint at Germanic interference, possibly with Old Frankish – as would be suggested by the peculiar chorography of these attestations (cf. Binsfeld, 1967; Wolff, 1981, p. 105; von Elbe, 1995, p. 59; Galsterer, B.; Galsterer H. & Breuer, 2010, p. 510; Kolb, 2018). The inscription from Cologne (cf. FIGURE 4.5) shows a possible further instance of <HT>, i.e. <INOHTVMOLO> (CL *in hoc tumulo*), even though this misspelling could be also explained as inversion between <H> and <O> and omission of final <-C> in *hoc* due to sandhi assimilation.

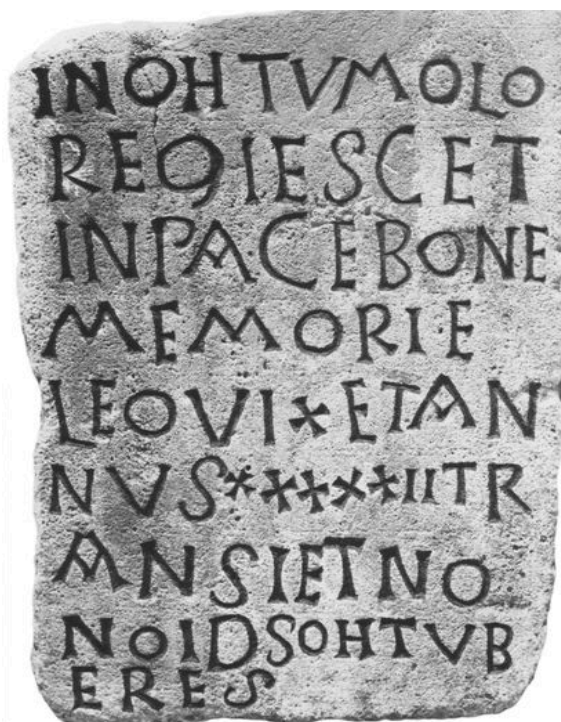
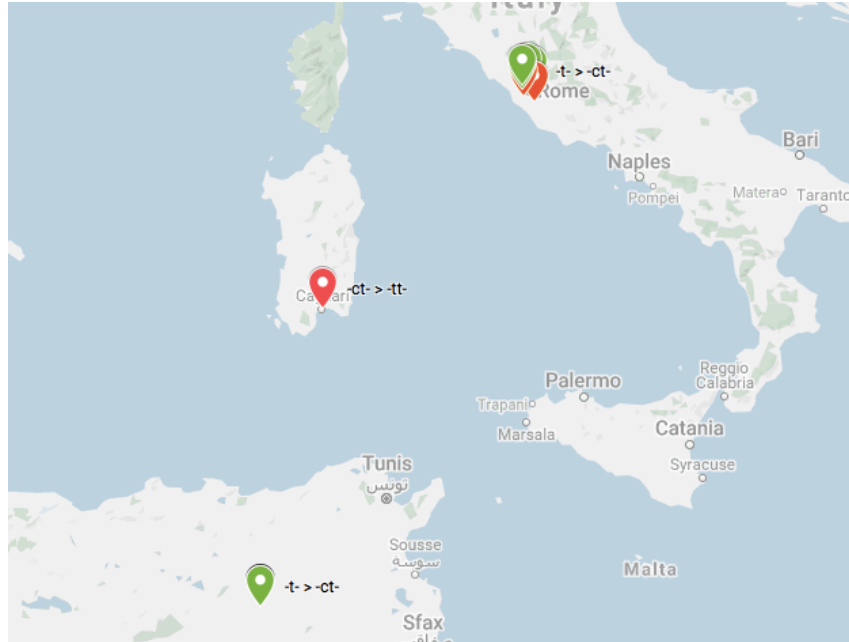


FIGURE 4.24 *CIL* 13, 8481: Germanic interference ?

4.2.3.5.11 5th century AD



MAP 4.15 Geographical distribution of the spelling variants of *-kt-*, 4th century AD

From the 5th century onwards, documentation lessens, and attestations of misspellings are mainly found in Rome. However, we may notice a possible initial isogloss joining Italy and Sardinia. In Africa, the *Albertini Tablets* show instances of <T> (<VITOR>) and inverse spellings of /t/ via <CT> (<EREDICTATE>). At Rome, instances of <T> are mainly concerned with the types *auctor* and *Adauctus*, and a last instance of anaptyxis is found (<BENEDICITA>).

Documentation from the 6th century onwards, with the exception of the <OHTVBERES> previously discussed (cf. FIGURE 4.5), does not offer interesting data, and the <T> spelling is mainly found in the lexeme AVCT-.

4.2.4 Synopsis

Even though the so far discussed data framework poses several difficulties of interpretation, we may infer the following picture. It is conceivable that Latin /kt/ was realized allophonically with turbulence, and hence weakening, of C₁, i.e., [xt] or [çt], as can be expected in a heterosyllabic stop+stop sequence. In a dialectal variety of Latin, typical of municipal areas, coda weakening came to complete reduction, consistently with a tendency shared by the Sabellian languages and

other *Restsprachen* of the Western Indo-European domain. Chronologically, it is impossible to locate the first attestations in the 1st century BC, since the examined testimonies are not exempt from doubts. Notably, the spread within the areas of *Umbria*, *Venetia et Histria* and *Ostia Antica* of the profession of *vītores* raise the question that the *gentilicium* *Vitorius* and the *cognomen* *Vitor*, also widespread in these areas, may not be the development of, respectively, *Victorius* and *Victor*. This knot is difficult to untie, but, with good approximation, we may suppose that, from the Imperial age onwards, the high diffusion of the *gentilicium* *Victorius* and the *cognomen* *Victor*, with further derivatives, makes it likely that the attestations of *Vitor*(-) should be intended as a development of *Victor*(-). However, despite these initial caveats, coda reduction is indeed attested at Pompeii in the first half of the 1st century AD, affecting different lexical types, with both heavy and superheavy syllables.

Conversely, such a tendency towards reduction is balanced by an inverse process of fortition, i.e., insertion, occurring at Pompeii as well. These two processes comply symmetrically with the same phenomenon, i.e., the syllabic restructuring of a C₁.C₂ sequence. This oscillation, already noted by Kiss (1971), is documented for /kt/ and not for /pt/. For this purpose, it is conceivable that acoustic and articulatory aspects should be considered. As for /kt/, the proximity of the places of articulation of the two plosives, as well as the involvement of the same articulator, makes this sequence more prone to the restructuring of syllabic margins with either C₁ reduction or the phonemicization of the transition between the C₁ burst and the C₂ hold phase. The *geminatio* of C₁, documented since the 1st century AD as well, may be considered an analogous tendency to contrast coda reduction, by defining iconically syllabic margins.

It is not possible to infer sure clues of geographic or even social variation as for the recorded spelling variants of /kt/. In this regard, a certain homogeneity of text types and a quite low amount of attestations, mainly circumscribed to a limited number of lexical types, notably onomastic material, are unfavorable factors. However, further verifications will be needed, by comparing these data with other misspellings and with the treatment of the structural series /pt/, /ps/, /ks/.

Nonetheless, the examined data allow inferring that the *-kt-* > *-t-* outcome, despite its initial dialectal feature, progressively spreads out in all the Imperial territories, with a discreet concentration in the areas of *Venetia et Histria* and *Noricum*, mainly because of onomastic diffusion. Although the treatment *-kt-* > *-t-* is attested with a certain documentary continuity up to the end of

the examined documentation, we ought to assume the regressive nature of this phenomenon, both because of the discontinuity with the Romance tradition and the fact that this outcome is limited to few lexemes (notably AUCT- and VICT-), which are likely to be lexicalized formations, i.e., no more responding to dynamic phonological processes. As for AUCT-, moreover, the diffusion of this form is reinforced by the correlation the coda reduction presents with the general tendency, typical of Late Latin, towards the lightening of superheavy syllables. This fact might explain not only the high number of attestations of AU(C)T- in Latin primary sources, but also the reference found in the *Appendix Probi* to the stigmatized forms *autores* and *autoritas*.

It is conceivable that Standard Latin – with Standard referring to each synchronic cut – preserved the /kt/ cluster (maybe realized as [xt] or [çt]): this is suggested, on the one hand, by the low frequency of misspellings as compared to other common “vulgar” Latin phenomena, such as B/V confusion, and, on the other hand, by the variability of the attested spelling variants, all implying a development, often polygenetic (as in the case of insertion and sonorization), from /kt/. Incidentally, the spelling <gt> does not necessarily entail sonorization. Rather, this spelling hints at a generalized weakening: note, in fact, that Celtic personal names, such as *Atrectus*, are also spelled *Atregtus* (with <gt> possibly pointing at [çt] or [xt]).

From the 2nd century onwards, another process proceeding towards weakening is attested, i.e., total assimilation, which seems to be peculiar of Rome, with a possible isogloss joining Italy and Sardinia around the 5th century AD. Though less attested than -kt- > -t-, this treatment appears to be more productive.

At this point, it is legitimate asking the following questions: (a) Why the outcome -kt- > -tt-, which shows Romance continuity, is not evidenced by Latin primary sources as the outcome -kt- > -t-? (b) Why the outcome -kt- > -tt- is continued among the Romance languages, whereas, on the contrary, the outcomes -kt- > -t-, is interrupted?

We may try to answer such questions by combining linguistic and extra-linguistic considerations. The two variants develop from /kt/ ([xt] / [çt]): -kt- > -t- is firstly a dialectal feature spreading throughout the Roman Empire mainly lexicalized elements, with scarce productivity, which are labelled as *barbarismi* around the 4th-5th century; -kt- > -tt- arises mainly at Rome and is possibly to be considered a diaphasic variant. As a matter of fact, we may assume that this outcome

was still allophonic and typical of *Allegroformen*, thus explaining why it is scarcely attested in the available written texts and why it is mainly recorded intramorphemically (surfacing also in official texts, see <LATTVCAE>) or in the adaptation of foreign names, i.e., in contexts wherein the preservation of morphological transparency is not required. Even though either phenomena comply with a process of weakening, with the drop of C₁ on the one hand and the anticipation of the hold phase of C₂ on the other, it is conceivable that the latter outcome was likely to fit better the phonological system of Latin of the Imperial Age than *-t-*: the outcome *-kt-* > *-tt-*, indeed, converges into the drift towards the creation of geminated consonants, displayed by several parallel phonological processes (cf. CHAPTER 3), and avoids the creation of homophonous pairs. Basically, between the variants [V:t] (< [Vht] < [Vkt]) and [Vtt] (< [Vkt]), the latter may have best fitted Latin phonological system (this competition, though concerning a different path, recalls the *lex littera*).

With the third stage of dialectalization, decentralization might have favored the phonemicization of local variants, developing from /kt/ ([xt], [çt]), i.e. *-tt-* in Italy, where the geminated outcome may be projected over Spoken Latin of the 2nd century AD and of the 5th century AD as far as Sardinia is concerned; *-pt-* in the Balkans, where it may be projected over Spoken Latin between the 3rd and 6th century AD (cf. § 4.1); *-çt-* > *-jt-* (?) in the Western domain, where, in the absence of evidence from Latin documentation, it can be projected over Spoken Latin of the 7th-8th century at the latest.

4.3 Appendix: dialectal (?) variants of *October*

The question of the variants of *October* has been paid much attention, as is shown in the recent summary by Adams (2007, pp. 417-419). However, an updated data collection of the main variants, with particular regard to their geographical distribution, is still needed. The data hereby discussed have been collected from both Latin and Greek epigraphic and papyraceous sources.

The noun *Octōber* – leaving aside the controversial issue of the formation of the names of months ending in *-ber*²⁰⁵ – shows several variants among epigraphic and papyraceous sources, listed in TABLE 4.16:

FORM	OCCURRENCES	%	DATE
OCTOB- / 'Οκτωβ-	739	88%	BC 2 nd – 8 th AD
OCTVB-	36	4,3%	1 st – 8 th AD
OCTOMB- /	20	2,40%	BC 2 nd – 5 th AD
'Οκτοβ-	19	2,30%	2 nd – 11 th AD
VCT(R)VB-	6	0,7%	5 th AD
OCTEMB-	1	0,12%	?
OCTIMB-	1	0,12%	4 th – 8 th AD

TABLE 4.48 *Main variants of octōber*

Furthermore, one may note the variation in the domain of morphology, as is shown in TABLE 4.17:

FORM	OCCURRENCES	%	DATE
<i>Octōber, -bris</i>	699	80%	BC 2 nd - 8 th AD
<i>Octōbrīus</i> / 'Οκτόβρι(ε)ι(ο)ς	135	17%	BC 2 nd - 8 th AD
<i>Octōbrus</i>	2	0,23 %	4 th AD

TABLE 4.49 *Main morphological variants of octōber*

²⁰⁵ The names of months ending in *-ber*, i.e. *september*, *octōber*, *nouember* and *december*, belong, together with *quintilis* and *sextilis*, to the series of months formed via a numeral basis, and refer to an archaic phase in which the Roman calendar was supposedly divided into ten periods, before Numa's reform (cf. Marinetti, 1995). If, on the one hand, the first element is quite clear, the segmentation of the second one posed several questions (cf. LEW s.v. for the main proposals). The question is further complicated by the alleged correspondence, proposed by Benveniste (BSL 32, pp. 73-74), and, more cautiously, by Ernout and Meillet, with Etruscan *xosfer* (cf. Marinetti, 1997).

The forms which will be discussed are *octub-*, *uctob-* and the forms with nasal insertion (i.e., *octomb-* and *octimb-*).

A. *octub-*

The form *octub-* is the most attested variant within Latin documentation after the standard one. It is attested since the 1st century AD and it is widespread throughout the Empire, as is shown in the below map. It is worth noticing that while the form *octub-* seems to be particularly attested in the Latin-speaking area, the form *octomb-* / Ὀκτωμβ- appears to be peculiar of the Greek-speaking area (cf. below C).



MAP 4.16 Geographical distribution of the variant OCTVB-

The diffusion of this form throughout Latin documentation was already highlighted by Prinz (1932, p. 69) (*octub- forma per totum orbem Romanum usitata fuisse uidetur*) and is attested in manuscript tradition as well as in Medieval Latin (TLL, vol. IX 2, p. 429, lin. 35 - p. 431, lin. 24). Latin *octuber* is continued in Ibero-Romance, cf. Sp. *Octubre* and Ptg. *Outubro*. Indeed, the most ancient instances of *octub-* are attested in Spain (*CILA*-2-3, 2959; 19-20 AD and *CIL* 2, 2959, 119 AD), whereas the other occurrences are dated from the 4th century AD. However, there is not strong evidence of a peculiar geographical distribution. TABLE 4.18 reports all the collected forms:

FORM	PUBLICATION	PROVENANCE	DATE
OCTVBRES	CILA-2-3, 927	<i>Spain - Salpensa</i>	19-20 AD
OCTVBRI(BU)S	CIL 2, 2959 (p 1051)	<i>Spain - Pamplona</i>	119 AD
OCTVBER(ES)	IHC 272 (p 2,98)	<i>Spain - Priesca</i>	300-1199 AD
OCTVBR(ES)	ICUR-7, 20154	<i>Roma</i>	300-799 AD
OCTVB[RES]	CIL 12, 2160	<i>Gallia - Vienna</i>	300-799 AD
OCTVBR(ES)	CIL 13, 02377	<i>Gallia - Lugdunum</i>	300-799 AD
OCTVBRIS	CIL 5, 5685	<i>Transpadana - Eupilio</i>	300-799 AD
OCTVBRIS	CIL 13, 1655	<i>Gallia - Asa Paulini</i>	300-799 AD
OCTVBER	CIL 13, 7748	<i>Germania - Leutesdorf</i>	300-799 AD
OCTVBR[ES]	CIL 05, 5655	<i>Montelupo Albese</i>	301-500 AD
OCTVBER	CIL 11, 4968 (p 1375)	<i>Spoletto</i>	384 AD
OCTVB(RES)	ICUR-2, 4524	<i>Roma</i>	391-425 AD
OCTVBR[ES]	ICUR-1, 1232	<i>Roma</i>	400-499 AD
Ὀκτουβρίου	Asdracha, Inscr. Byz. 379,194	<i>Tracia - Perinthos</i>	400-599 AD
OCTVBR(ES)	CIL 6, 7970	<i>Roma</i>	401-600 AD
OCTVBR(ES)	ICI-7, 4	<i>Liguria - Tortona</i>	446 AD
OCTVBRES	CIL 3, 14893	<i>Dalmazia - Salona</i>	450-550 AD
Ὀκτουβρίου	SEG 36, 1181	<i>Galatia - Germia</i>	460 AD
OCTVB	ICI-17, 27	<i>Transpadana - Ivrea</i>	461-482 AD
OCTVBRE	ICUR-7, 17643a	<i>Roma</i>	500-599 AD
OCTV[B]RES	ICI-9, 51	<i>Liguria - Albenga</i>	500-599 AD
Ὀκτουβρίου	Perinthos-Herakleia 233	<i>Tracia - Perinthos</i>	500-699 AD
OCTVB(RES)	CIL 11, 7019	<i>Etruria - Luni</i>	528 AD
OCTVBR(ES)	CIL 5, 3897	<i>Verona</i>	530-531 AD
OCTVBR(ES)	CIL 11, 1408	<i>Etruria - Luni Mare</i>	544 AD
OCTVBRES	CIL 2-7, 714	<i>Spagna - Cordoba</i>	642 AD
OCTVBRES	CIL 8, 23020,40	<i>Africa - Hadrumetum</i>	unknown
OCTV[B]RES	CIL 2-7, 680	<i>Spagna - Cordoba</i>	unknown
OCTVB(RES)	CIL 2-7, 643 = HEp 1995, 317	<i>Spagna - Cordoba</i>	unknown
OC]TVBRIS	AE 2012, 265	<i>Roma</i>	unknown
OCTVBRIS	CIL 11, 270	<i>Ravenna</i>	unknown
OCTVBRES	RICG-08, 50	<i>Anicium</i>	unknown
OCTVBRIU(M)	SupIt-27-L, 18	<i>Transpadana - Lodi</i>	unknown
OCTVBER	CIL 5, 5692	<i>Fino Mornasco</i>	unknown
OCTVBRE	ILTG 297	<i>Gallia - Lugdunum</i>	unknown

TABLE 4.50 *Istances of October*

It was widely agreed that this form should be considered of Oscan origin. The antiquity and the alleged prevalence of this form in the Iberian Peninsula, wherein, as is known, Italic communities were settled, would represent a clue to support this hypothesis. This assumption was pursued by Carnoy (1906, p. 64), Ernout (1909, pp. 67, 76), Tovar (1968, p. 42), Lapesa (1980, p. 98). The Oscan origin of this form would be corroborated by Neap. *ottrufō*, Sal. *attrufu* (cf. *FEW*, *REW*, Corominas and Pascual 1980-91: IV, 263 col .2; *AIS* 325) as well as by the toponym *Cutrofiano* (LE), attested as *Uttrofianum* in the 12th century and interpreted by Rohlf (1962, p. 58) as a predial toponym from **Octufius* «zu oskisch **octufri* ‘Oktober’, das in kampan. *ottrufō* ‘Oktober’».

Nevertheless, the hypothesis of an Oscan origin of the form *octub-* is based on erroneous assumptions:

1) The presence of *-f-* ‘paleoitalic’ in *ottrufō* and *attrufu* suggests a variant **octrufus*, with metaplasm and metathesis (cf. the variant *octrober*, e.g., OCTROBES in *CIL* 10, 4531, from Capua). Nevertheless, the treatment *-kt-* > *-tt-*, as Adams (2007, p. 417-419) points out, is peculiar of Latin and not Oscan phonology. Therefore, it is more conceivable that **octrufus* is a Dialectal Latin form, and not directly an Oscan form. This inconsistency, of course, derives from the assumption that the outcome *-kt-* > *-tt-* would be triggered by the Oscan substratum.

2) The mere presence of <U> for /ō/ is an even weaker clue of the Oscan substratum, since this is a common misspelling in Latin non-literary texts and is a *barbarismus* condemned in the *Appendix Probi* (*sobrius* non *suber*).

3) The fact that this form is widespread throughout the Empire and is the most common variant after the standard one suggests that *octuber* is to be considered as a substandard variant, possibly a diastratic one, which cannot be put in relation to a language that was no more spoken when the bulk of these forms are attested.

However, it must be said that the representativeness of these forms is inevitably scarce, since the names of months mostly occur as abbreviated forms, which have therefore a certain degree of crystallization and makes it difficult to ascertain the actual presence of non-standard spellings possibly related to the diffusion of a grapho-phonological variant.

B. uctob- / uctub-



MAP 4.17 Geographical distribution of the form VCTOB-

There are only six attestations of forms with *u-* in the first syllable. Such forms are attested in Central-Southern Italy since the 4th century AD, as is shown in TABLE 4.19:

FORM	PUBLICATION	PROVENANCE	DATE
VCTOBRIS	ICUR-10, 27490	Roma	301-400 AD
VTOBRES	ICI-3, 17	Castelvecchio Subequo	301-400 AD
VCTOBIS	ICUR-6, 16578	Roma	326-375 AD
VTTRVBIS	ICUR-2, 4216	Roma	390-425 AD
VCTOBRES	CIL 9, 1069	Frigento	300-599 AD
VCTOBRES	ICUR-5, 14865	Roma	300-799 AD

TABLE 4.51 Instances of *uctober*

Even though the attestations in this area may depend on statistical reasons, especially since, from the 5th century onwards, the epigraphic documentation is less rich than during the first three centuries of the Imperial age, these data seem to hint at a diatopic variant. The form *uttrubis* (CL *octobribus*) (cf. *uttruvu*, Saracena (CS)? AIS 325) contains the highest number of non-classical phenomena, i.e., *u-* in the first syllable, *-u-* in the tonic syllable (cf. A), *-kt-* > *-tt-* assimilation, metathesis and metaplasm (*octuber, -is* → *octrubus, -i*).²⁰⁶ This form may be explained as a development of *oct(r)ubus*, with the raise of [o] in the first syllable due to distant assimilation

²⁰⁶ Differently from Kiss (1977, p. 28), interpreting <VTTRVBIS> as *Octobres* (ACC.PL.), I think that this form should be considered an ablative from *oct(r)ubus*, in agreement with the previous <CALEDIS> (= *Kalendis*).

triggered by the stressed syllable, even though this explanation does not account for the other forms, showing <U> in the first syllable but <o> in the stressed one.

C. Forms with nasal insertion

The third remarkable form is characterized by nasal insertion. Within Latin primary sources, we may find only three occurrences (2 forms in *-omb-* and 1 in *-imb-*). This picture change considerably if we consider also Greek primary sources, wherein the forms with nasal insertion is particularly widespread, especially on papyri, as is shown in TABLE 4.20 and MAP 4.12.

FORM	PUBLICATION	PROVENANCE	DATE
Ὀκτωνβρίων	Petzl & Schwertheim, Hadrian 8/16	Alexandria Troas	133-134 AD
Ὀκτωνβρίων	TAM II 905	Rhodiapolis (Licia)	152-153 AD
Ὀκτωνβρίων	TAM II 905	Rhodiapolis (Licia)	152-153 AD
Ὀκτωνβρίων	TAM II 905	Rhodiapolis (Licia)	152-153 AD
Ὀκτωνβρίων	TAM II 905	Rhodiapolis (Licia)	152-153 AD
Ὀκτωμβρίων	IG VII 2225	Beozia - Thisbe	170 BC
Ὀκτωμβρίων	IG VII 2225	Beozia - Thisbe	170 BC
Ὀκτωμβρίων	P. Bagnall 5 V	Ossirinco	213 AD
Ὀκτωμβρίας	IGBulg IV 2236	Pautalia (Kyustendil)	238 AD
Ὀκτεμβρίου	ZPE 33, 1979	sconosciuta	272-235 AD
Ὀκτωμβρίων	SB 18 13856	Ossirinco	300-325 AD
Octimbris	RICG-01, 4 = RICG-15, 4 = ILCV 01308	Gallia - Genava	300-799 AD
Ὀκτωμβρίων	SB 20 14587	Ossirinco	308 AD
Ὀκτωμβρίω	P. Giss 1 102	sconosciuta	317 AD
Ὀκτωμβρίων	CPR 17 A 37	Hermopolis	340 AD
Ὀκτωμβρίων	P. Mil. 1.2 66 = SB 6 9510	Nilopolis	343 AD
Ὀκτωμβρίων	P. Med. 1 66	Nilopolis	343 AD
Ὀκτωμβρίων	P. Mil. 1.2 66 = SB 6 9510	Nilopolis	344 AD
Ὀκτωμβρίων	P. Mil. 1.2 66 = SB 6 9510	Nilopolis	345 AD
Octombres	IdAltava 120	Mauretania - Ouled Mimoun	407 AD
Octombrio	P. Oxy. 16 1982	Ossirinco	497 AD
Ὀκτωμβρίων	Epigr. tou Oropou 308	Beozia - Oropos	73 BC

TABLE 4.52 *Istances of the forms with nasal insertion*



MAP 4.18 Geographical distribution of the forms with nasal insertion

The variants with nasal insertion are distributed as follows:

- 1) *Octomb-* / Ὀκτωμβ- : 20 attestations (2,4%), BC 2nd – 5th AD;
- 2) *Octimbr-*: 1 attestation, 4th – 8th AD (Gallia) + Ὀκτεμβρ-: 1 attestations, unknown date.

The form *Octomb-* is the most attested one (2 instances in Latin, 18 in Greek inscriptions and papyri). Greek papyri show a peculiar occurrence of this form (cf. C. Gloss. Biling. I 11; Preisigke, p. 88). Notably, the forms in Latin script come from Egypt and Africa.

Such forms with nasal insertion should be interpreted as analogical forms within the paradigm *september, october, november, december*. The forms with *-o-* preserve the original vowel, the form with *-i-* is possibly analogical to *decimber*, which is further influenced by *undecim* (cf. Adams 2007, p. 419). There are many examples of the form *octimbr-* in manuscript tradition (*TLL*, vol. IX 2, p. 429, lin. 35 - p. 431, lin. 24) as well as in Medieval Latin (cf. Du Cange t. 6, col. 29a). It is probable that the analogy is further favored by the paraetymology, attested in late grammarians, which derive the formation of the series *september ... december* from the overlapping of the numeral and the noun *imber, -is* (cf. *Isid. orig.* 5,33,11; *Cassiod. var.* 1,35,2; *Prisc. ars* 230).

The forms with nasal insertions show Romance continuity in different areas. A rich documentation is provided by Merlo (1904, p. 162):

Paglieta, Archi (abr.) *uttómbre* [...]; soran. *ottómmre*; benev. *uttombre* A. T. p. II 246; Rum. *octombre*; - cat. Limoges *octómbre*; Cfr. m. ted. *oktomber* Sch. Litbl. Dic. 1902; m. gr. Ὀκτωμβ-; a.rus. *oktomvrii*, a. seb. *oktomvrie* Cih. U 185.

a. fr. *uitembre* God., à mois de *uitembre* cart. a. 1226 Du C. VI 29; a. fr. *Octembre*; Anjou *otémbre* Görl. Fr. St. V 77; a. doc. Borg. *Octambre*, -*embre*, a. doc. Joinville *oct-*, *otambre*, *octembre* Görl. Ib. VII 84; a. pr. *Octembre* Ray.; cart. Lim. *outenbre*; doc. s. XIV Albi, Bresse *octembre*, -*bro.*; cfr. m. ted. *oktember* Sch, l. c.; a sl. *oktembre*.

The form *octomber* is continued in Italo-Romance central and southern dialects,²⁰⁷ in Rumanian, in Franco-Provençal, in some Slavic languages and in Middle-Greek. Notably, the form Ὀκτωμβ- is attested since the mid-Republican age in a *senatus consultum* dated 170 BC (IG VII 2225). It is probable that, before the Classical period, Latin had two variants of *October*, the “etymological” form and the analogical one: the former becoming the standard variant during the Classical period in the Latin -speaking area, the latter becoming the standard variant in the Greek-speaking area.

This scrutiny allows to conclude these elements:

- Since the 2nd century BC, there were the variants *october* and *octomber*. The second one became the standard variant in the Greek-speaking area. The presence of forms deriving from *octomber* in southern Italo-Romance dialects may hint at either a submerged presence of *octomber* also in the Latin-speaking area, though not attested, or to a later influence by the Eastern form, or even to a polygenetic origin, since a similar process of analogy may arise independently.
- Since the 1st century AD, there is, along with the standard form *October*, also a substandard form *Octuber*, widespread throughout the Latin-speaking area; this form may also present the metaplasm *octubr(i)us* / *octrub(i)us*. This form is commonly attested also in manuscript tradition and in Medieval Latin. This form should be considered the basis of the dialectal variant *oct(r)ufer* / *oct(r)ufus*, which is continued in some Italo-Romance southern dialects,

²⁰⁷ Kramer (C. Gloss. Bling. I, 11): «Die griechische Form Ὀκτωμβ- isti m 4.Jh. mehrfach belegt. Die Platzich natürlich letzte Sicherheit nicht erreichen lässt. Den Nasaleinschub, obwohl der der Analogie der Namen auf -ember zu verdanken ist, zeigen auch eagine zesisch *uttombra*, avellinisch *ottonvrə*, altoprovelisch *octombre*».

and also of the diatopic variant *uctrubus* > *uttrubus*, which is attested around the 5th century AD and is continued in Central and Southern Italo-Romance dialects.

- From the 4th century AD onwards the variant *octimbr-* is attested. Though it is attested only once, it is probable that this form was peculiar of Gallic Latin. This could be suggested by the manuscript tradition and Medieval Latin as well as by the Romance outcomes.

Conclusions

This work has presented a detailed and almost exhaustive description of some grapho-phonological phenomena attested in Latin primary sources by combining philological-linguistic, historical, and computational skills.

The fine-grained analysis, far from being merely descriptive and confined to philological acrimony (which is, in any case, the starting *condicio sine qua non*, notably for the level of analysis concerned), has allowed us to detail some phenomena, which had not received the adequate attention, and to investigate, whenever the documentation made it possible, the interrelation between internal and external aspects.

To this purpose, we have framed the work, as in the mainstream of historical sociolinguistics, particularly of a correlative type, also in the context of a long tradition that characterizes the studies on the history of the Latin language (cf. CHAPTER 1)

A first significant contribution to be emphasized concerns the methodology elaborated for data collection, which allowed the gathering of relevant forms in all the available Latin primary sources in a reasonable amount of time. In the absence of linguistically annotated corpora that were still complete, an advanced program was developed to extract forms that might contain deviations from Classical Latin from the *EDCS* database. This program made it possible to associate automatically in a spreadsheet the collected records with the metadata of each entry contained on *EDCS*. Through refinement processes, both mechanical and manual, it was then possible to restrict the collected forms to the relevant ones.

Through specifically elaborated matrices, additional documentation was extracted from the papyraceous documentation available on papyri.info and from the Greek documentation available on PHI Greek Inscriptions. Subsequently, the selected forms were annotated according to linguistic and extra-linguistic information, combining the criteria of *CLaSSES* and *LLDB*.

As for prostheses, forms with prosthetic vowel and convergent phenomena of simplification of *ex(s)C* and *insC*, and correct spellings were collected. Each record was then classified according to the phonosyntactic environment and the spelling of the prosthetic vowel. In parallel, similar phenomena from Greek documentation were cataloged. As for geminations, all the geminated spellings were collected, classified according to the segment involved and the distributional context. As for the treatment of *-kt-*, all the spelling variants with underlying /kt/ were collected. These data

records were then verified with philological accuracy on printed editions and photographs that may be available online.

It is necessary to stress that the joint consideration of epigraphic and papyraceous material has allowed a remarkable quantitative update of the phenomena under investigation. The complete available documentation analysis assured to avoid the risk of overestimating the occurrence in any given area of spelling deviating from the norm, as would have occurred if the research would have been limited to the descriptive level of a pre-selected corpus. This allowed us to overcome the risk of projecting circumscribed epigraphic evidence on the Romance scenario.

Moreover, the exhaustive examination enabled us not to remain on the pure compilation level, but also to identify areal trends and their historical motivations, to revise substratistic hypotheses, and to highlight phenomena of continuity and discontinuity both within Latin tradition and the Graeco-Latin linguistic areas, and in the Latin-Romance *continuum*.

The analyses have been carried out through an empirical-inductive approach, as is demanded historical linguistics research, i. e. by calibrating the methodology of analysis based on the data offer, with a methodology we have referred to as “progressive zooms.”

Two multiple minimum common denominators link the examined phenomenologies, both on the internal and, so to speak, the external front.

On the one hand, the key role of the syllable that emerges in the phonological processes under examination, moreover evident in the “meta-graphic” reflection by the Romans, as discussed in CHAPTER 3. However, the present work did not need to frame the phenomena in a defined theoretical system. It clearly emerges from references now to Government Phonology, now to Moraic Phonology, now to Dependency Phonology, now again to Natural Generative Phonology and, occasionally, to Optimality Theory.

On the other hand, the examined phenomena are known in study tradition precisely because they would involve the dimensions of diatopic, diaphasic, and diastratic variation with different degrees of interpenetration. As well as that of contact, notably, with Koine Greek and the Sabellian languages, but also the Semitic languages in some cases. This has been the main route that has oriented the choice and the research, making it possible to disprove or confirm certain already known issues and address new ones.

Let us see in detail the results achieved for the investigated phenomenologies.

The study on the prosthetic vowel before sC (CHAPTER 2) has moved in two directions: on the one hand, the ascertainment of the actual diatopic dimension of the phenomenon, of which a particular occurrence in African Latin inscriptions has been emphasized (cf. Schuchardt, 1866-1868, II: 337-365; Prinz, 1938; Acquati, 1971, pp. 182-183; Fanciullo, 1992; Lorenzetti & Schirru, 2010). On the other hand, the examination of a broader linguistic area, including the Greek-speaking East, in which this phenomenon is well-documented as well, and generally ascribed to different types of substrate (i.e., the Aramaic substrate as for Syro-Palaestinean Koine Greek and Phrygian substrate as for Asia Minor Koine Greek). The data confirmed a greater concentration of the phenomenon in the African provinces, showing the highest frequency of this spelling (7%), thus confirming the previously outlined pictures. Contrarily, the examination of the prosthetic vowel in Koine Greek documentation suggested a reversal of the previously proposed interpretive framework, according to the Greek influence on the prosthesis in Latin, following the arrival of Christian communities from the shores of Asia Minor (cf. Schuchardt, 1866-1868, II: 337-365; Prinz, 1939; Pisani, 1940). This assumption presents two fundamental problems: prosthesis would be specific to the Koine Greek of Asia Minor and the Christian communities. In fact, prosthesis is well documented not only in Asia Minor Koine Greek, but also in Syria and Egypt; on the other hand, we have pointed out that the impression that this phenomenon is specific to Christian inscriptions is due both to the fact that, indeed, the Christian lexicon turns out to contain several words beginning with this cluster and to the fact that Christian inscriptions are better documented precisely in the period in which the phenomenon is most attested.

Structural tendencies, common in the two languages, to the heterosyllabification of this cluster, have raised the problem of polygenesis or monogenesis of the phenomenon, and, consequently, of which language has possibly influenced the other. However, the undisputed fact that the prosthesis is more documented in Latin than in Greek and that, in the Greek documentation, there are many Latin loanwords with the prosthesis, lead reasonably to conclude that Latin has influenced Koine Greek and to re-dimension the substratistic hypotheses advanced so far on the presence of this phenomenon in Koine Greek due to Aramaic and, even more, Phrygian. The prosthesis would appear, therefore, as one of the few relics in which the circulation of Latin in the Eastern provinces emerges.

The analysis by synchronic cuts allowed to achieve interesting results in the description of the phases of the change. In a first phase (1st c. BC – 1st c. AD), the phenomenon appears sporadic and

is evidenced in peripheral breeding grounds of the Graeco-Latin linguistic area, and hits structurally weak points or emerges in heterographies.

Starting from the 2nd century AD, it is particularly attested at Rome, North Africa, and Asia Minor, the most demographically thick and culturally lively centers. The contact between these areas guarantees the circulation of people (and anthroponyms), ideas, and religious doctrines (there are the most critical bishoprics). The phenomenon appears embedded within freedmen alloglot communities, where it is likely it assumed a diastratic connotation. However, it also appears in well-finished texts, where it is particularly connected to the post-consonantal environment and turns out to be a euphonic stylistic means. The Latin loanwords in the Koine Greek documentation from Syria, generally attributed to the Aramaic substratum, could be better explained, given the chronology and the contemporary diffusion of the phenomenon in Latin, as spellings reflecting Latin phonology, rather than the result of the Aramaic influence on Greek.

Beginning from the 4th century AD it is conceivable that the phenomenon penetrated more extensively into the system of Substandard Latin, further reinforced by the convergence with the phenomena of opacification and reanalysis of words beginning with *i(n)sC-* and *ex(s)C-*, in a sort of "conspiracy" towards the creation of word-initial VsC- patterns. In this period, this phenomenon is a feature, also diatopically connoted, of African Latin. The centrality of the African area stands out. It is assumed to be the point of diffusion of the phenomenon in the Western area (Sardinia and the Iberian Peninsula). From this period, it is possible to pinpoint the progressive definition of an isogloss joining the African, Sardinian, and Iberian macro-area.

Towards the end of the examined documentation, the phenomenon is generally Neo-standard, at least in the Iberian area. This is evidenced by two paraetymologies by Isidore, showing the reanalysis of the phonological form of the word. Visigoth inscriptions parallel this evidence, wherein the appearance of vowel prosthesis is no longer conditioned by the post-consonantal position but is systematically applied to all words beginning with sC.

The study on consonant gemination (CHAPTER 3), composite because of the phenomenon's intrinsic complexity, takes place, as the title suggests, along two lines, one orthographic and one phonological. In fact, these aspects are intimately connected since the orthographic evolution responds to the evolutionary trends of the Latin phonological system. Although the phenomenon has been paid attention in numerous studies (cf. e.g., Graur, 1929; Giannini & Marotta 1989; Benedetti & Marotta, 2014), an examination of the documentary material was still needed.

In a first subsection (§ 3.2), we described the emergence of the notation of the *geminatio consonantium*, by analyzing a sample of archaic inscriptions dated from the 3rd to the 2nd century BC for the purpose of seeing the spread of the phenomenon. Data clearly illustrates how the habit of the *geminatio consonantium* made its first appearance mainly in Greek-speaking areas, consistently with the traditional picture described by grammarians. The influence of the Greek model, alternatively, emerges from the examination of the areal distribution and examining in depth the earliest attestations. These confirmations pass progressively from marginal and contingent phenomena of graphemic interference to the progressive use in official epigraphs starting from the Second Punic War period. The examination is placed in the broader context of other iconic devices to define the syllabic weight, both on the line and the super-line.

The case of the gemination of preconsonantal <s> (§ 3.3) complies with this phenomenology. From a grapho-phonological point of view, we have underlined how the phenomenon is related to the tendency of /s/ in the sC cluster to be associated with coda position, thus becoming ambisyllabic.

This spelling is documented both in well-finished texts, in which this graphic device notably occurs at the morphemic boundary, thus aiming at an isomorphism between the syllabic and morphological levels, and in private texts, showing a peculiar incidence with onomastic borrowings of Greek origin. This different distribution is explained by analyzing the “socio-graphic,” so to speak, level: the study showed how the same phenomenon, radiating from the Greek model, has been embedded in different ways into Latin orthography. In coherence with the picture that has emerged on the diffusion of *geminatio consonantium* due to the Greek model's prestige, there is evidence that Latin orthography, notably in legal documents or texts showing an old-fashioned style, also borrowed the *geminatio* of preconsonantal <s>. Although not entirely standardized and mostly conveyed in school environments, this use is peculiar to verbal forms. In contrast, the continuous contact with the Greek model, showing continuity of attestations of this habit, also favored, via onomastic diffusion, the spread of this practice among private texts, assuming a general substandard shadow evidenced by the pronounced co-occurrence with vowel prosthesis.

Another section is concerned with the much-debated issue of the *littera*-rule (§ 3.4). On the one hand, we have tried to find new elements to ascertain vowel quantity in some allotropic pairs already known to tradition. The clues we have brought to light provide evidence of the V:C ~ VCC alternation concerning these lexemes. Alternatively, we have proposed a tentative analysis of a possible allotropic pair, so far unnoticed, i.e., the *gentilicia* *Lūc(e)ius* ~ *Lūcc(e)ius*. The documentary framework provides detailed documentary evidence of the evolutionary processes, matching perfectly the account proposed by Benedetti (1996) and Benedetti & Marotta (2014) on the relation

between monophthongization and gemination. It has been stressed that the adaptation into Latin morpho-phonology of the Oscan *gentilicium* *Loukiis*, well-documented in Oscan inscriptions as well, follows the path of the evolution of the treatment of the diphthong *-ou-* in Latin: (1) preservation of the diphthong, (2) /ō/ monophthongization (3rd century BC), (4) synchronic variation between the outcomes *-ūk-* and *-ūkk-*, which shows the highest degree of variability during the 1st century BC. It has been assumed that the two different outcomes respond to different target varieties in the learning of Latin, i.e., a higher variety, which is responsible for the *-ūk-* adaptation, and a lower one, which is responsible for the *-ūkk-* adaptation. The highest occurrence, starting from the 1st century AD, of the variant *-ūkk-*, which is widespread throughout the Empire, responds to demographic factors.

In parallel, data, albeit random and fragmentary, concerning the lemmata *Iuppiter*, *cippus*, and *littera*, have shown that synchronic variation can be inferred in the same period. In some cases, the variant *ūTT* replaced the variant *ūt* (as in the case of *cīppus*, *lūppiter*); in other cases, the two variants present synchronic fluctuation (i.e., *lītera* ~ *littera*), as is further evidenced by the interchangeability in poetic inscriptions attesting to the prosodic equivalence.

A final section deals with certain phonological processes arising from the examined material, i.e., gemination before /r/ and /j/ and “spontaneous” intervocalic gemination (§ 3.5). As far as the gemination before /j/ and /r/ is concerned, the restructuration of the syllable head is considered the main trigger of the process. As for the V_V gemination, an evident correlation with stress emerges. Marginally, it could be noticed a tendency to assign syllable weight in CV light syllables via gemination. Interestingly, clues of regional variation have emerged, for which a further statistical analysis will be needed. This is the case of the *-wjV-* > *-bbjV-* gemination, showing a peculiar concentration in Mid and Southern Italy, and of gemination before /r/, showing a higher occurrence in the territories of Italy and Northern Africa, with some forms marginally continued in Old Italian and Tuscan (as in the case of *Affrica*). Random instances of the gemination of the original /dj/ have shown the possibility that in a hypercorrect variety of Latin, the etymological spelling was restored to contrast the widespread merger of this cluster into /j(j)/, with subsequent gemination according to the path of other *-Cj-* sequences. Some instances of the spelling <bb> in intervocalic position have shed light on the possibility that in a variety of Latin, phonological processes implying the fortition of a segment previously affected by lenition (i.e., /β/ < /b/), were marginally productive.

Finally (§ 3.6), the *Appendix* concerning the variants of *sabbata* / *sambatium* has stressed the importance of epigraphical and papyraceous sources to detect the dissimilated variant *sambat-*, which is continued in a wide linguistic area.

The study on the treatment of *-kt-* (CHAPTER 4) assumes particular relevance regarding the issue of continuity and discontinuity of substrate phenomena. The analysis is inserted into the problem of the phonological value to attribute to the spelling <t>. It has shown, through the examination of the use of the *geminatio consonantium* within those texts presenting <t>, the high probability that the writing <t> had the phonological value /t/ rather than /tt/, thus confirming the picture exposed by Väänänen (1981) and Mancini (2000a, 2000b).

The examined documentary framework poses some intrinsic problems, complicated by the scarcity, in absolute terms, of the collected forms and the variability of the treatments affecting this cluster, implying complete coda reduction (*-kt- > -t-*), total assimilation (*-kt- > -tt-*), insertion (*-kt- > kVt-*), frication (*-kt- > -xt- / -ht-*). This fact led to conclude that in Standard Latin – with standard referring to each synchronic cut – there was a strong tendency to preserve the /kt/ cluster. This would explain, on the one hand, the scarcity of attestation of these misspellings as compared to other common “vulgar” Latin phenomena, such as, for instance, betacism and vowel mergers, and on the other, the variability of the attested spelling variants, all implying a development, often polygenetic, from /kt/. It is impossible to infer sure clues of geographic or even social variation as for the recorded spelling variants of /kt/. In this regard, a certain homogeneity of text types and a quite low amount of attestations, mainly circumscribed to a limited number of lexical types, notably onomastic material, are unfavorable factors. However, there is evidence that the <t> spelling was more attested in the early Imperial period, whereas the <tt> spelling turns out to be particularly attested at Rome, in Northern Africa, and Sardinia. Instead, the <ht> spelling shows a peculiar concentration in the areas of *Germania Superior* and *Inferior*. In this regard, we have assumed that this spelling, rather than being influenced by the Celtic languages, may be influenced by the Germanic languages.

The reconstructed picture allows us to infer that, in a dialectal variety of Latin, typical of municipal areas, coda weakening came to complete reduction, consistently with a tendency shared by the Sabellian languages and other *Restsprachen* of the Western Indo-European domain. The analysis confirms the picture already drawn by Mancini (2000a, 2000b). Chronologically, it is impossible to locate the first attestations in the 1st century BC since the examined testimonies are not exempt from doubts. However, coda reduction is indeed attested at Pompeii in the first half of the 1st century AD, affecting different lexical types with both heavy and superheavy rhymes. Conversely, such a tendency towards reduction is balanced by an inverse process of fortition, i.e., insertion, also occurring at Pompeii in Novius Eunus’ interlanguage. These two processes comply

symmetrically with the same phenomenon, i.e., syllabic restructuring of a C₁C₂ sequence. The *geminatio* of C₁, documented since the 1st century AD, may be considered a similar tendency to contrast coda reduction by defining iconically syllabic margins.

The *-kt- > -t-* outcome, despite its initial dialectal feature, progressively spreads out in all the Imperial territories, with a discreet concentration in the areas of *Venetia et Histria* and *Noricum*, mainly because of onomastic diffusion. Although the treatment *-kt- > -t-* is attested with a certain documentary continuity up to the end of the examined documentation, we ought to assume the recessive nature of this phenomenon, both because of the discontinuity with the Romance tradition and the fact that this outcome is limited to few lexemes (notably AUCT- and VICT-). As for AUCT-, moreover, the diffusion of this form is reinforced by the general tendency to lighten hyperheavy rhymes. This fact might explain the high number of attestations of AU(C)T- in Latin primary sources and the reference found in the *Appendix Probi* to the stigmatized forms of *autores* and *autoritas*.

From the 2nd century onwards, another process proceeding towards weakening is attested, i.e., total assimilation, which seems to be peculiar of Rome, with a possible isogloss joining Italy and Sardinia around the 5th century AD. Though less attested than *-kt- > -t-*, this treatment appears to be more productive. Although either phenomenon comply with a process of weakening, it is conceivable that the latter outcome was likely to fit better the phonological system of Latin of the Imperial Age than *-t-*. The outcome *-kt- > -tt-* indeed, converges into the drift towards the creation of geminated consonants and avoids creating homophonic pairs. Basically, between the variants [V:t] (< [Vht] < [Vkt]) and [Vtt] (< [Vkt]), the latter may have best fit Latin phonological system.

All in all, the issues presented in this work have highlighted how the analysis of known facts, rubricated in descriptive grammars, are enriched with historical, geolinguistic, and sociolinguistic thickness, in case, thanks to a richer data framework, it is possible to zoom in the documentation and examine the dynamics of diffusion, thus shifting from the plane of the diachronic fact to the historical one and trying to connect them to the communities of speakers.

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