CHAPTER 7

'Restsprachen' and Language Contact: Latin, Etruscan, and the Sabellic Languages

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1 Introduction

In this paper, I will focus on the reconstruction of contact-induced changes concerning 'Restsprachen', particularly through investigating the common hypothesis according to which the vowel reduction and deletion phenomena in Latin, Etruscan, and the Sabellic languages would depend on a first-syllable stress which would have spread from Etruscan by contact.

After some general remarks on methods for identifying the different types of contact-induced changes (§ 2) and the configuration of the language contact between Latin, Etruscan, and the Sabellic languages (§ 3), I will offer an overview of the vowel reduction and deletion phenomena attested in those languages as well as their accentual and rhythmic correlates (§ 4). Taking all this into account, I will discuss the plausibility of attributing such correlates to language contact and then try to reconstruct the underlying processes (§ 5).

2 Reconstructing Language Contact

The identification of contact-induced changes is sometimes rather difficult, especially in the case of structural borrowing, due to its covertness.[1] In this regard, Thomason (2010: 34–35) has proposed five main criteria for assessing the plausibility of a specific change being contact-induced:

> The first requisite is to consider the proposed receiving language (let's call it B) as a whole, not a single piece at a time: the chances that just one structural feature traveled from one language to another are vanishingly

1 Structural borrowing refers to "the copying of any abstract linguistic element (i.e., pattern) from one language to another" (Renner 2023). This kind of borrowing is also called 'pattern replication' (see, for example, Matras 2009: 234–237).

> small. Second, identify a source language (call it A). This means identifying a language—or, if all speakers of A shifted to B, one or more closely related languages—that is, or was, in sufficiently intimate contact with B to permit the transfer of structural features. Third, find some shared features in A and B. They need not be identical in the two languages, and very often they won't be, because transferred features often don't match in the source and receiving languages. They should, however, belong to a range of linguistic subsystems, e.g. both phonology and syntax, so as to rule out the possibility of structurally linked internal innovations. Fourth, prove that the features *are* old in A—that is, prove that the features are not innovations in A. And fifth, prove that the features *are* innovations in B, that is, that they did not exist in B before B came into close contact with A.

In general terms, it is evident that the identification of contact-induced changes depends on the knowledge of the languages in question as well as of their internal and external history. Therefore, such an identification is compromised if the source language or the target language or even both are fragmentary.[2]

As for loanwords, in his work on the dialectal elements of the Latin vocabulary, Ernout (1909: 30) points out "l'étude phonétique" and "le témoignage des grammairiens et des lexicographes" as guidelines for their identification. Specifically, "l'étude phonétique" consists in assuming the non-fulfilment of expectations based on the knowledge of Latin phonetics as an evidence of foreign origin.[3] Thus, for example, a voiceless labiodental fricative occurring medially in a Latin word (see, for example, *scrōfa*) is commonly considered as a clue to a Sabellic origin. However, the validity of this assumption depends, among other factors, on whether or not it is accepted that the voiceless labiodental fricative may be either an outcome of the Proto-Indo-European voiced labial, dental, and labiovelar aspirates also in Latin—or at least in a Latin variety subsequently marginalized—or the result of dissimilation.[4] Furthermore, the reconstruction of contact-induced changes may be validated by

2 See, for example, Rigobianco (2022), which focuses on Sabellicisms in Latin and Faliscan.

3 More precisely, according to Rix (2005: 567–568), the expectations relating to "die synchrone Lautstruktur" must be distinguished from those relating to "die vorhistorische, mittels der Etymologie feststellbare Lautstruktur".

4 See, for example, Goidanich (1929: 401), who attributes such an outcome to a dialectal speech rather than to a foreign influence, as well as Coleman (1990: 5), who considers it of little relevance for the distinction between the Sabellic languages and the Latin dialects. On the outcomes of the Proto-Indo-European voiced aspirates in Latin, see Leumann (1977: 163–171), Zamboni (1986–1987), Meiser (1998: 101–105), and Weiss (2020: 80–88).

what Rix (2005: 568) calls "sachliche Argumente". In this regard, Rix cites the alleged Sabellicisms in Latin which refer to names of animals (*bōs*, *lupus*, *scrōfa*, *asinus*) and colours (*heluus*, *callidus*, *rūfus*). According to Rix, the belonging of such sets of words, respectively, to the same lexical field would be a "sachliche Argumente" confirming the foreign origin which has been supposed on a phonetic basis. More generally, beyond the specific case of loanwords, the first guideline ("l'étude phonétique") may be understood as referring to the identification of any formal evidence of a possible contact-induced change—whatever may be the relevant level of linguistic analysis—, while "sachliche Argumente" to any linguistic and extra-linguistic evidence allowing a plausible historical frame to be reconstructed for the alleged contact-induced change.

The second guideline pointed out by Ernout, that is "le témoignage des grammairiens et des lexicographes", is in principle subordinated to "l'étude phonétique". In other words, the judgement on the reliability of the attribution of a lexical form or linguistic phenomenon to contact depends on eminently linguistic criteria. By way of example, on the basis of our prior knowledge about a specific language—on which, however, the caveats mentioned above should be kept in mind—, it is possible to recognise lexical forms erroneously attributed by the tradition to that language. Such erroneous attributions may anyway be relevant for defining the alleged source language, in particular in terms of its perception, but in most cases the details are not sufficient to draw any firm conclusions.

The reconstruction of contact-induced changes concerning fragmentary dead languages may take advantage of the studies on contact between living or better attested languages.[5] In particular, although theoretically "any linguistic feature can be transferred from any language to any other language" (Thomason & Kaufman 1988: 14), the probability that such a transfer has actually occurred may be evaluated in the light of the occurrence of similar transfers in comparable contexts of language contact. In this regard, several models which have been developed to describe the different kinds of language contact and their different outcomes may be used profitably.[6]

Taking all this into account, I intend to investigate whether the vowel reduction and deletion phenomena occurring in Latin, Etruscan, and the Sabellic languages may be considered as contact-induced changes and, if that is the case, try to reconstruct, as far as possible, the process which led to them.

5 As is evident, this assumption is based on the uniformitarian principle, regarding which see Baldi & Cuzzolin (2015) and Walkden (2019).

6 In addition to Thomason & Kaufman (1988), which remains the reference work, van Coetsem (2000) and Lucas (2015), among others, should be taken into consideration. Joseph (2002)

3 Language Contact between Latin, Etruscan, and the Sabellic Languages

In the studies on the languages of ancient Italy, numerous changes induced by the contact between Etruscan, on the one hand, and Latin and the Sabellic languages, on the other, have been identified.[7] Such changes differ according to typology (loanwords, calques, etc.), direction (from Etruscan to Latin and/or Sabellic languages and vice versa), diffusion (from the here-and-now of a communicative situation underlying a written text to a full integration into the linguistic system), and chronology. Furthermore, the identification of each of these changes has different degrees of plausibility.

In general, it should be noted that, since the 1980s, after a long phase of 'philo-Etruscanism',[8] that is to say aimed primarily at identifying the Etruscan influence on Latin (and the Sabellic languages),[9] the Latin and Sabellic influence on Etruscan has been gradually recognised.[10] Moreover, in 1978, Pisani put forward the hypothesis that ancient Italy constitutes a linguistic area, which would include not only Latin, Etruscan, and the Sabellic languages, but also Venetic, Cisalpine Celtic, Messapic, and Sicel.[11] It is not possible here to discuss such a hypothesis, nor to enumerate all the changes which may attributed to the contact between Etruscan, on the one hand, and Latin and Sabellic languages, on the other, due to the complexity of both the overall picture and the specific cases as well as for the risk of taking for granted contact-induced changes whose identification, as already mentioned, has different degrees of plausibility. I limit myself to recalling that, on the hand, there is no evidence in Latin and the Sabellic languages of significant changes consequent to contact with Etruscan, except for loanwords,[12] while, on the other, several phenomena attributable to the contact with Latin and/or the Sabellic languages are attested in Etruscan from the earliest times.[13] First, numerous loanwords, such

and Ross (2009) should also be mentioned, as they approach the question from a specifically historical perspective.

7 I leave the question of the contact between Latin and the Sabellic languages aside (but see below, § 5).

8 This label has been coined by Prosdocimi (1995: 41–42).

9 See, for example, Ernout (1929), De Simone (1988), Breyer (1993), and Watmough (1997).

10 See, for example, Rix (1981; 1998a), Steinbauer (1993), Canuti (2008), Meiser (2009), and Rigobianco (2013).

11 Pisani (1978). For an updated overview, see Filippin (2022). On areal linguistics, see, among others, Campbell (2006) and Muysken (2008).

12 For an overview, see Adams (2004: 159–184).

13 See Rigobianco (2024: 264–265).

as anthroponyms, theonyms, technical terms, institutional terms, and kinship terms, may be identified.[14] For some of them, Rix has shown that there are formal reasons which make a Sabellic origin more likely than a Latin origin.[15] In addition, it is possible to identify derivational morphemes which probably derive from Latin and/or the Sabellic languages. Such morphemes, most of which have been attested since the beginning of the Etruscan writing tradition, are: *-θe*/*-te* (cf. Proto-Italic **-ti-*), for deriving adjectives from nouns, in particular ethnics from toponyms[16] (see, for example, *kaiseriθe*-[17] 'Kaiseriθe (= Caeretan; masculine gentilicium)'); *-i* (cf. Proto-Italic **-ī*), for deriving feminine gentilicia[18] (see, for example, *puleisnai*[19] 'Puleisnai (feminine gentilicium)'); *-ia* (cf. Proto-Italic **-jā*), for deriving feminine anthroponyms[20] (see, for example, *velelia*(-)[21] 'Uelelia (feminine praenomen)'); *-ie* (cf. Proto-Italic **-jo-*), for deriving adjectives, in particular gentilicia, from nouns[22] (see, for example, *rasunie*-[23] 'Rasunie (= Etruscan; masculine gentilicium)'); *-le* (cf. Proto-Italic **-lo-*), for deriving hypocoristics[24] (see, for example, *venzile*(-)[25] 'Venzile (masculine gentilicium)'); *-ns* (cf. Proto-Italic **-no-s*), for deriving theonyms[26] (see, for example, *culśanś*-[27] 'Culsans (theonym)'); *-sie* (cf. Proto-Italic **-sjo-*?), for

14 A comprehensive review of such loanwords is still missing. By way of example, one may cite the masculine praenomina *mamarce*, *puplie-*, and *kavie* (cf. Latin *Māmercus*, *Publius*, *Gāius*; Rix 1995: 723), the theonyms *uni*, *menerva*, and *neθuns* (cf. Latin *Iūnō*, *Minerua*, and *Neptūnus*; Rix 1981), the vase name *putlum-* (cf. Latin *pōculum*; Prosdocimi 1979a: 159–161), the institutional term *macstre-* (cf. Latin *magister*; Maggiani 1996: 114), and the kinship term *nefts* 'nephew' (cf. Latin *nepōs*; Maggiani 2019).

15 See, for example, Rix (1981: 123–125).

16 Steinbauer (1999: 126–127).

17 *ET*^{2} AV 1.29 (6th century BCE). Etruscan inscriptions are cited according to Meiser (2014) = *ET*^{2}.

18 Rigobianco (2013: 139–146).

19 *ET*^{2} Pa 1.2 (second quarter of the 6th century BCE).

20 Rigobianco (2013: 171–178).

21 *ET*^{2} Fa 2.5 (archaic), Ve 3.47 (last quarter of the 7th century BCE) Cr 2.36 (third quarter of the 7th century BCE), 2.80 (end of the 6th/beginning of the 5th century BCE), 2.158 (end of the 7th century BCE), 7.1 (third quarter of the 7th century BCE), AT 2.1 (second half of the 7th century BCE), 2.2 (*velelііa*[*s*; 7th century BCE), Vs 1.66 (end of the 6th/beginning of the 5th century BCE), 1.85 (end of the 6th/beginning of the 5th century BCE), 1.112 (*velelia*[*s*; end of the 6th/beginning of the 5th century BCE).

22 De Simone (1989: 271–275).

23 *ET*^{2} Cm 3.2 (third quarter of the 7th century BCE).

24 van Heems (2008: 86–87; this morpheme is attested only in late Etruscan).

25 *ET*^{2} Cl 1.356, 1.1146, 1.1148, 1.1674 (*venzileś*), 1.2366 (*venzi*[*le*).

26 Rix (1998a: 213–216, 222).

27 *ET*^{2} Co 3.4, 4.11 (*culśanś*[).

deriving praenomina[28] (see, for example, *lauχusie*(-)[29] 'Lauχusie (masculine praenomen)'). Apart from the question of the feminine suffix *-i*, which is particularly controversial,[30] these morphemes have been identified as borrowed on the basis of their formal identity or similarity with approximately synonymous Italic morphemes of Proto-Indo-European origin, as well as of the finding in the Etruscan corpus of both Italic loanwords characterised by such derivational morphemes and words derived from Etruscan stems with the same morphemes.

In the light of this phenomenology, the contact between Etruscan and the Sabellic languages and/or Latin may be categorized as a "more intense contact" on a scale of four degrees ("casual contact"; "slightly more intense contact"; "more intense contact"; "intense contact"), as it is designed by Thomason. Specifically, although "any borrowing scale is a matter of probabilities", such a "more intense contact" is associated to the following outcomes (Thomason 2001: 70–71):

> 3. More intense contact (more bilinguals, attitudes and other social factors favoring borrowing): basic as well as nonbasic vocabulary borrowed, moderate structural borrowing.
>
> *Lexicon* More function words borrowed; basic vocabulary—the kinds of words that tend to be present in all languages—may also be borrowed at this stage, including such closed-class items as pronouns and low numerals as well as nouns and verbs and adjectives; derivational affixes may be borrowed too (e.g. *-able*/*ible*, which originally entered English on French loanwords and then spread from there to native English vocabulary).
>
> *Structure* More significant structural features are borrowed, though usually without resulting major typological change in the borrowing language. In phonology, the phonetic realizations of native phonemes, loss of some native phonemes not present in the source language, addition of new phonemes even in native vocabulary, prosodic features such as stress placement, loss or addition of syllable structure constraints (e.g. a bar against closed syllables), and morphophonemic rules (e.g. devoicing of word-final obstruents). In syntax, such features as word order (e.g. SVO beginning to replace SOV or vice versa) and the syntax of coordination and subordination (e.g. increasing or decreasing use of participial con-

28 De Simone (2006: 126–131).

29 *ET*^{2} Vs 1.81 (6th–5th century BCE), Vn 3.2 (*l*[*a*]*uχu*[*s*]*hie*; end of the 7th/beginning of the 6th century BCE), Vt 1.71 (end of the 6th century BCE).

30 See Rigobianco (2013: 139–146).

structions instead of constructions that employ conjunctions). In morphology, borrowed inflectional affixes and categories may be added to native words, especially if they fit well typologically with previously existing patterns.

4 Vowel Reduction and Deletion in Latin, Etruscan, and the Sabellic Languages

The identification of the vowel reduction and deletion phenomena in Latin, Etruscan, and the Sabellic languages is not always immediate, due to the problematic nature of the phonetic and phonological reconstruction based on writing[31] as well as the limited knowledge of the languages in question—especially in the case of Etruscan and the Sabellic languages—. For example, in the Etruscan inscriptions dating to the 7th and 6th century BCE, there are attested nomina gentilicia which show a sequence *-iena*(-), such as *lapaiena*[32] 'Lapaiena (masculine gentilicium)', alongside nomina gentilicia which show a sequence *-ina*(-), such as *velχaina-*[33] 'Velχaina (masculine gentilicium)'. The sequence *-iena*(-) may be analysed as a concatenation of the derivational morphemes *-ie*(-) and *-na*(-),[34] while the analysis of *-ina*(-) is theoretically dubious. In particular, *-ina*(-) may be analysed as an outcome of *-ie-na*(-) with deletion of *-e-*. However, it cannot be ruled out that *-ina*(-) is the concatenation of the derivational morphemes *-i*(-)[35] and *-na*(-), as already hypothesized for the nomina gentilicia ending in *-k/cina*(-) < **-k/c-i-na*(-) (see, for example, *tursikina*[36] 'Tur[ʃ]ikina (masculine gentilicium)'). Furthermore, if indeed *-ina*(-) is from *-ie-na*(-) with deletion of *-e-*, it would remain to be determined whether this deletion depends on the same phonetic and prosodic conditions which underlie the vowel deletion phenomena regularly written down in the Etruscan texts since the beginning of the 5th century BCE (see below, § 4.3). A further example of the difficulty in identifying the vowel reduction and deletion phenomena in the languages in question may be provided by South-Picene *múfqlúm*,[37] which

31 See Baglioni & Rigobianco in this volume.

32 *ET*^{2} Cr 1.209 (*la*[*p*]*aieṇa*).

33 *ET*^{2} La 3.1, Cr 3.10, 3.13.

34 *-ie*(-) and *-na*(-) are both used to derive adjectives from nouns (Belfiore 2020: 212). As seen above (§ 3), *-ie*(-) has been borrowed in Etruscan from the Italic languages.

35 *-i*(-) is a morpheme of Italic origin used to derive feminine gentilicia (see above, § 3).

36 *ET*^{2} Cl 2.3. See Prosdocimi (2009: 229–248).

37 *ST* SP Te 5 = *ImIt* Interamnia Praetuttiorum 1. Sabellic inscriptions are cited according to Rix (2002) = *ST* and Crawford (2011) = *ImIt*.

is commonly considered the Sabellic counterpart of Latin *monstrum*.[38] Specifically, *múfqlúm* has been claimed to be an evidence of the occurrence of medial syllable vowel deletion in an archaic Sabellic language[39] (see below, § 4.2). However, such an assumption is based on an etymological derivation from **monestlom* instead of from **monstlom*, which, however, cannot be definitively ascertained.[40]

In light of this, it is necessary to clarify as far as possible the vowel reduction and deletion phenomena which actually occurred in Latin, Etruscan, and the Sabellic languages respectively, in particular with regard to their outcomes and chronology, in order to then proceed to a valid comparison.[41]

4.1 *Vowel Reduction and Deletion in Latin (and Faliscan)*

The earliest Latin texts do not show any signs of vowel reduction or deletion.[42] For instance, the Praenestine fibula (second quarter of the 7th century BCE)[43] contains *vhevhaked*[44] and *numasioi*, the Duenos inscription (first half of the 6th century BCE)[45] *iouesat*[46] and *feced*,[47] the Forum Cippus (mid-6th century BCE)[48] *sacros*, *esed*,[49] and *iouestod*,[50] a fragmentary inscription on

38 See Marinetti (1981: 138).

39 See, for example, Nishimura (2012: 388–389).

40 See, for example, Machajdíková & Buzássyová (2021: 197).

41 Vowel reduction and deletion phenomena in Latin, Etruscan, and the Sabellic languages (§§ 4.1, 4.2, 4.3) and their analysis in terms of stress and rhythm (§ 4.4) as well as contact-induced phenomena (§§ 5, 6) have been extensively explored in Rigobianco (2024), although from a different perspective, which did not focus on the general issue of the reconstruction of contact-induced changes concerning 'Restsprachen', and are taken up as an exemplification of the preceding theoretical and methodological considerations (§§ 2, 3, and 4).

42 See, for example, Nishimura (2010a).

43 Colonna (1999: 439).

44 Unless *vhevaked* should be emended in *vhaked*, as suggested by Maras (2015) and Mancini (2021).

45 Colonna (1979: 167).

46 Some scholars hold that the change of *-ou̯V-* into *-ū-* should be considered apart from the phenomena in question (see, for example, Meiser 1998: 88). In any case, see also *iouo-* and *ioue-* on the Corcolle Altar fragments, dated to approximately 500 BCE (Prosdocimi 1979b: 197–216; Vine 1993: 65–83).

47 According to Weiss (2020: 149), the change of *-ed* to *-it* would not be a case of vowel reduction.

48 Coarelli (1983: 130).

49 See above, note 47.

50 See above, note 46.

a dolium from Satricum[51] (mid-6th century BCE)[52] *mamarcom*, and the Lapis Satricanus (end of the 6th/beginning of the 5th century BCE)[53] *mamartei*.

Before the start of the literary tradition in the 3rd century BCE, there was a process of vowel reduction and deletion in non-initial syllables. On the one hand, vowel reduction is noticeable in prefixed, compounded, and univerbated forms, mainly in verbs (see, for example, *conficio* beside *facio*), but also in consonant-stem nouns (see, for example, genitive *capitis* beside nominative *caput*), third conjugation verbs (see, for example, *legimus* beside *legere*), and early Greek loanwords (see, for example, *Tarentum* beside Greek Τάρας, Τάραντος). The trigger and outcome of vowel reduction depend on syllable position, syllable structure, and phonetic context[54] and analogical levelling may sometimes obscure its effects. On the other hand, vowel deletion is a phenomenon which occurred several times throughout the history of Latin and determining its rules is difficult.[55] In any case, the earliest instances of vowel deletion seem to have happened before rhotacism, which occurred in the 4th century BCE:[56] see, for example, *pōnō* < **posnō* < **posinō*[57] instead of ***pornō* < ***porinō* < **posinō*.

As for Faliscan, which should be considered as a Latin dialect or, alternatively, as a distinct language closely related to Latin,[58] the discussion regarding vowel reduction and deletion has been going on for a considerable time due to the lack of convincing examples. While it is commonly believed that such phenomena are absent in Faliscan,[59] Bakkum finds this unlikely because of the close relationship between Faliscan and Latin.[60] However, it should be noted that closely related dialects may exhibit very different patterns of vowel reduc-

51 Gnade & Colonna (2003). See also *mamarc*[on a urn from Osteria dell'Osa dated to 630–620 BCE (Colonna 1980a).

52 Gnade & Colonna (2003: 19).

53 Colonna (1980b: 48).

54 Leumann (1977: 79–91); Meiser (1998: 67–73); Weiss (2020: 126–131). See also Nishimura (2010b).

55 Leumann (1977: 95–99); Meiser (1998: 66–67, 73–74); Weiss (2020: 132–135). See also Rix (1966).

56 Cf. Cic. *Fam.* 9.21.2 "L. Papirium Crassum, qui primum Papi⟨s⟩ius est vocari desitus" (Lucius Papirius Crassus was consul in 336 and 330 BCE).

57 Ernout & Meillet (1959: 520–521); Walde & Hofmann (1938–1954: II, 335–336); de Vaan (2008: 479). As to the preliterary stage, Nishimura (2011: 14–17) has argued that vowel deletion took place under a metric constraint which would have prevented the sequence of two light syllables: see, for example, *ūsurpā-* < **oi̯sŭrŭpā-* and *repperī* < **rĕpĕpărī*.

58 See Rigobianco (2020: 314–316) and references therein.

59 See, for example, Giacomelli (2006: 104).

60 Bakkum (2009: 101).

tion and deletion. An example of this is seen in the contemporary Bolognese dialects, where the tendency towards vowel reduction and deletion increases from the Apennines to the city of Bologna (cf., for example, Monte di Badi dialect [sel'vadigo] and Bologna dialect [sal'va:dg] < Latin *siluāticum*).[61] Anyway, the available data in Faliscan are scarce and their analysis is often uncertain.[62] I only mention the form *maxomo*, which appears as a cognomen in at least three Faliscan inscriptions.[63] This form is particularly interesting because it seems to show the deletion of *-i-* (**magisomos* > **magsomos*; cf. Latin *maximus*/*maxumus*)[64] and the preservation of the vowel *-o-* in the middle syllable.[65] In the light of this, it may be speculated that Faliscan also exhibits a tendency towards vowel reduction and deletion in non-initial syllables, as seen in Latin, which could explain the deletion of *-i-* in **magisomos*. However, the results in Faliscan would be partially different from those in Latin. In any case, such a tendency would likely come later than the earliest documents, if the Faliscan form *pe*:*parai*, found in the so-called Ceres-inscription (7th century BCE), is indeed a reduplicative perfect with the preservation of the medial syllable vowel *-a-*, corresponding to Latin *peperī* 'I gave birth' with the expected reduction of the medial syllable vowel *-a-* to *-e-*.

4.2 *Vowel Reduction and Deletion in the Sabellic Languages*

Reconstructing the processes of vowel reduction and deletion in the Sabellic languages is challenging due to the fragmentary nature of their documentation. From the early stages of their writing traditions, the Sabellic languages exhibit the deletion of short vowels before *s* in final syllables, which may therefore be assumed as a Proto-Sabellic or at least a Common-Sabellic phenomenon:[66] see, for example, *setums* 'Setums (masculine praenomen)' < **septumos* in a Palaeo-Sabellic inscription of the 7th century BCE.[67] Contrarily, vowel deletion in medial syllables likely occurred independently in the different Sabellic languages, as evidenced by its occurrence after language-specific sound changes.

61 Filipponio (2012: 71–79). Monte di Badi is a village in the Apennines about sixty kilometres south west of Bologna.

62 For an updated review, see Bakkum (2009: 100–103).

63 Bakkum 98 (*ṃaxoṃ*[*o*]), 162 (*ma*]*xo̯mo*), and 220. Faliscan inscriptions are cited according to Bakkum (2009).

64 Weiss (2020: 90 n. 8). Cf. Ernout & Meillet (1959: 377–379), Walde & Hofmann (1938–1954: II, 14), and de Vaan (2008: 358–359).

65 Bakkum (2009: 101).

66 Clackson (2015: 10).

67 *ST* Um 4 = *ImIt* Caere 1. See Rix (1992).

For instance, Umbrian **struhçla**[68] < **struu̯ikelā*[69] demonstrates that the deletion of **-e-* occurred after the palatalization of the preceding velar stop, indicated by the use of the letter ⟨ç⟩.[70] Nevertheless, vowel deletion in medial syllables seems also to have taken place in archaic varieties.[71] The Tortora inscription (end of the 6th century BCE)[72] provides an example with (σ)τα[.]ιοσϙτοδ, which can be analysed as a so-called future imperative (-τοδ) of a **-sk-e/o-* verbal base with deletion of *-e-* (-σϙ- < **-ske-*).[73]

Regarding vowel reduction, in the various Sabellic languages it seems to affect different vowels, to be triggered by different phonetic contexts, and to yield different outcomes.[74] For example, in Oscan, *-a-*, *-e-*, and *-o-* changed to *-u-* in medial open syllables before or after a labial sound (see, for example, *pertumum*[75] 'to prevent (through intercession)'[76] < **pertemom*; cf. *pertemust*[77] '(he/she/it) will prevent (through intercession)', *pertemest*[78] '(he/she/it) will have prevented (through intercession)').[79] In Umbrian, *-a-* in medial syllables changed to *-o-* (see, for example, *prestota*[80] 'Praestota (theonym)'[81] < **praistata-;* cf. **prestate**[82]).[83] These phenomena seem to have occurred relatively late in both Oscan and Umbrian.[84] In the archaic varieties, the presence of vowel reduction is uncertain.[85] A possible example could be Pre-Samnite διποτερε⟨ς⟩ 'Jupiter' (beginning of the 5th century BCE),[86] if -ποτερ- is the outcome of **-pater-*, as suggested by Rix.[87]

68 **struhçla** probably refers to some kind of pastry added to the sacrificial meat (Untermann 2000: 704–705).

69 *ST* Um 1 (II a 18, 28, IV 4 **struhçla**, III 34 **struçla**, II a 41, IV 1 **struhçlas**, VI a 59 *strusla*, VI b 5, 23, VII a 8, 42, 54 *struśla*).

70 Nishimura (2012: 387). See also Nishimura (2016) on syncope of *u*-vocalism in Sabellic.

71 Nishimura (2012: 388–389). See also Lipp (2021).

72 *ST* Ps 20 = *ImIt* Blanda 1. For the dating, see Lazzarini & Poccetti (2001: 16).

73 Lazzarini & Poccetti (2001: 143, 173). Its exact meaning is unclear.

74 For an overview, see Nishimura (2012: 381–386) and Zair (2016: 300–312).

75 *ST* Lu 1 = *ImIt* Bantia 1 (line 7).

76 Untermann (2000: 219–221).

77 *ST* Lu 1 = *ImIt* Bantia 1 (line 4).

78 *ST* Lu 1 = *ImIt* Bantia 1 (line 7).

79 Zair (2016: 302–303).

80 For the many occurrences of *prestota*, see the index in Untermann (2000: 574).

81 Untermann (2000: 574–575).

82 *ST* Um 1 (Ib 27).

83 Zair (2016: 303–306).

84 Zair (2016: 299, 311–312).

85 Cf. Nishimura (2012: 383–386).

86 *ST* Ps 1 = *ImIt* Nerulum 1.

87 Rix (1997: 146–147). See, however, the remarks on the correction διποτερε⟨ς⟩ for διποτερεμ by Crawford (2011: 1341).

4.3 *Vowel Reduction and Deletion in Etruscan*

Etruscan shows a clear tendency towards vowel reduction and then deletion in non-initial syllables. For example, *avile*[88] 'Avile (masculine praenomen)' first underwent vowel reduction, resulting in *av*[ə]*le*, which could be written as *avile*, *avale*,[89] *avele*,[90] or *avule*,[91] and then deletion, becoming *avle*/*aule*.[92]

Vowel deletion is quite extensive and has been consistently written down since the early 5th century BCE,[93] although evidence of this phenomenon may be traced back to the 7th century BCE. For instance, alongside the form *muluvanice*/*muluvanike*[94] 'gave',[95] there are also attested forms such as *muluvunike*[96] (end of the 7th century BCE) with reduction of *-a-* to [ə] represented by ⟨u⟩, *muluveneke*[97] (last quarter of the 7th century BCE) with reduction of *-a-* and *-i-* to [ə] represented by ⟨e⟩, *muluvnice*[98] (last quarter of the 7th century BCE) with deletion of *-a-*, *mulvanice*[99] (end of the 7th/beginning of the 6th century BCE)/*mulvanike*[100] (second half of the 7th century BCE) and *mulvannice*[101] (end of the 7th/beginning of the 6th century BCE) with deletion of *-u-*, *mulvenike*[102] (third quarter of the 7th century BCE) with deletion of *-u-* and reduction of *-a-* to [ə] represented by ⟨e⟩, as well as *mulvenece*[103] (end of the

88 *ET*^{2} Ve 3.11, 3.29 (*avi*]*le*), Cr 2.99 (*avilesca*), 3.28 (*ạviḷe*), Ta 7.18, 7.35 (*avi*[*le*), AT 2.9, Vs 1.26, 1.84, 1.100 (*ạviles*), 1.165, 1.166, Vc 1.78 (*av*(*i*)*les*), 2.71, 3.4, 3.5 (*av*[*ile*), 0.23, Ru 2.1 ([*a*]*vileś*), Vt 1.154 (*aviḷeś*), AS 2.1 (*avil*[*eś*), 2.14, Pe 1.115 (*ạviles*), Fs 1.4, 1.5, 0.3 (*aṿiḷeṣ́*), Pa 1.1, OA 2.6. The notation of [s] as either ⟨s⟩ (sigma) or ⟨ś⟩ (san) depends on the orthographic habits of the different areas of Etruria.

89 *ET*^{2} Cr 3.23.

90 *ET*^{2} Cm 2.127, Ve 2.1, Vs 1.5, 1.13, 1.33 (*avele*{-}*s*), 1.38, 1.39, 1.45, 1.56, 1.121 (*aṿ*[*e*]*les*), 1.137 (*aveḷes*), 1.328, 1.344, AV 1.23 ([*a*]*veles*), Po 2.5 (*ave*(*le*)), Cl 2.15 (*avel*[*e*), OA 3.1 (*aṿẹ*[*lesi*), 6.1.

91 *ET*^{2} Cr 1.63, AV 2.17.

92 For the many occurrences of *avle*/*aule*, see the index in Meiser (2014).

93 Rix (2004: 950).

94 For the many occurrences of *muluvanice*/*muluvanike*, see the index in Meiser (2014). The notation of [k] as either ⟨c⟩ or ⟨k⟩ depends on the orthographic habits of the different areas of Etruria.

95 Rix (2004: 957).

96 *ET*^{2} Vt 3.5.

97 *ET*^{2} Cl 3.2 (*muluṿẹneke*).

98 *ET*^{2} Cr 3.27 (*mu*]*luvnice*).

99 *ET*^{2} Ve 3.18 (*mulṿanice*), Cr 3.11, Cr 3.15.

100 *ET*^{2} Ru 3.1 (*mulvaniḳe*).

101 *ET*^{2} Cr 3.14. The gemination of *-n-*, which also occurs in the form *ϑanursiannaś* in the same inscription, remains to be clarified.

102 *ET*^{2} Cl 2.3 (*mụḷvenike*).

103 *ET*^{2} Vc 3.3.

7th/beginning of the 6th century BCE) with deletion of *-u-* and reduction of *-a-* and *-i-* to [ə] represented by ⟨e⟩.

4.4 *Vowel Reduction and Deletion as Stress- and Rhythm-Related Phenomena*

As seen above, on the basis of writing, manifold phenomena of vowel reduction and deletion may be reconstructed for Latin, Etruscan, and the Sabellic languages. Since such phenomena affect only non-initial syllables, they are commonly ascribed to the effect of a first-syllable stress.

The reconstruction of the stress systems of both the Italic languages and Etruscan is quite complex. Specifically, for the Italic languages, it is generally assumed that the Proto-Indo-European mobile stress was maintained until the early Proto-Italic period, as proven by certain phonetic phenomena which seem sensitive to the stress position reconstructed for Proto-Indo-European (see, for example, Latin *et* < **éti* versus *pede* < **pedí*).[104] Subsequently, the Proto-Indo-European mobile stress would have been replaced by a first-syllable stress, which would be responsible for the vowel reduction and deletion phenomena in non-initial syllables attested in Latin and the Sabellic languages.[105] The Proto-Italic first-syllable stress would probably have been preserved in the Sabellic languages throughout their history.[106] In particular, with regard to Oscan, such an assumption is supported by the occurrence almost exclusively in the first syllable of a mean for signalling vowel length (see, for example, **aasaí**[107] 'at the altar',[108] with **aa**- for [a:]).[109] Conversely, in Latin, the Proto-Italic first-syllable stress would have been replaced by the Penultimate Law of stress placement.[110]

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104 See Vine (2012) and references therein as well as Höfler (2017).

105 The hypothesis of a first-syllable stress in Latin has been rejected on different grounds by Ballester (1990; 1996), Oniga (1990; 2006), Pultrová (2006; 2011), and Ohannesian (2020), who have provided different alternative explanations for the vowel reduction and deletion phenomena occurring in non-initial syllables. However, the traditional hypothesis seems to more convincingly account for the whole phenomenology in question—including vowel reduction in early Greek loanwords—than those put forward by Oniga, Pultrová, and Ohannesian. On Ballester's hypothesis, see below (§ 6).

106 See Nishimura (2014: 183–186).

107 *ST* Sa 1 (A 16, B 19) = *ImIT* Terventum 34 (A 16, B 19).

108 Untermann (2000: 43–44).

109 Thurneysen (1909). See Nishimura (2014: 186) for an analysis of the distribution of ⟨Vh⟩, ⟨VhV⟩, and ⟨VV⟩ as an orthographic device for [V̄] in Umbrian. The use of alliteration in archaic Italic poetic texts is also commonly considered an indication of a first-syllable stress: for an overview, see Nishimura (2014: 168 n. 23).

110 Leumann (1977: 237–246); Meiser (1998: 53); Weiss (2020: 119–122).

The Etruscan stress system has been studied only to a very limited extent and no attempt has yet been made to understand how it works by analysing the entire corpus of inscriptions. However, based on the vowel reduction and deletion in non-initial syllables, it is generally assumed that Etruscan had a first-syllable stress.[111] It is important to point out that this first-syllable stress may be an innovation in Etruscan. Specifically, starting from a prehistoric process of apocope reconstructed by Rix,[112] Prosdocimi has put forward the hypothesis that the original Etruscan stress system was characterised by stress on the penultimate syllable.[113] According to this hypothesis, for instance, the nominative-accusative form *seχ*[114] 'daughter' would be the result of an earlier form **séχi* and the corresponding genitive form *seχis*[115] the result of an earlier form **seχísi*.[116]

Anyway, it is important to acknowledge that stress position alone is not sufficient to determine the occurrence of the vowel reduction and deletion phenomena being discussed. This observation, along with the disagreement with the French School's theory supporting the existence of a pitch accent in Latin,[117] might explain why the accent responsible for these phenomena is often described as a dynamic, expiratory, or intensive accent which would have been notably strong.[118] Nevertheless, it is crucial to take into account other factors,[119] particularly rhythmic factors, which appear to have played a significant role.

Numerous theoretical models have been proposed to explain how rhythm works, taking into account both phonetic and phonological aspects. In this regard, Bertinetto, moving away from the traditional distinction between

111 Rix (2004: 949).

112 Rix (1984, 204; 1989, 173–182).

113 Prosdocimi (1986: 612–613). See also Rigobianco (2017). In any case, the innovative character of the tendency towards rhythmic compensation in Etruscan is confirmed by the absence of vowel reduction and deletion in Rhaetic, a language phylogenetically related to Etruscan (see Schumacher 2004: 316–317).

114 For the many occurrences of *seχ*, see the index in Meiser (2014).

115 *ET*[2] Cr 3.33, Vs 3.9, Pe 1.21 (*śeχis*), 1.1101 (*seχiś*).

116 The reconstruction of **-si* as the original genitive ending is based on the palatalisation of the stem-vowel in the ablative case (see, for example, nominative-accusative *rasna*, genitive *rasnas*, ablative *raśneś*), whose ending would arise from the addition to the genitive ending **-si*—with *-i* responsible for the palatalisation—of a further morpheme **-sV* (*raśneś* < **rasna-si-sV*); see Rix (2004, 952–953).

117 See Leumann (1977: 248–254).

118 See, by way of example, Fortson (2011: 102; "all the linguistic evidence strongly indicates that Latin had a strong expiratory stress-accent throughout its history").

119 In this regard, Flemming (2005: 3) claims that "[i]t is typical correlates of lack of stress that condition neutralization, not stress per se".

stress-timed and syllable-timed languages, has recently proposed a more appropriate classification of languages into compensating and controlling languages,[120] thus shedding light on the phenomena of vowel reduction and deletion. Specifically, Bertinetto builds upon Pike's idea of differentiating syllable-timed rhythm, where all the syllables tend to have equal durations, from stress-timed rhythm, where the intervals between stresses tend to be constant.[121] According to the traditional view, the stress-timed rhythm, exemplified by English, would lead to a "rhythmic crushing of syllables into short time limits", and, as a result, would be "partly responsible for many abbreviations—in which syllables may be omitted entirely—and the obscuring of vowels".[122] Despite experimental evidence contradicting such a distinction, Bertinetto has suggested that the core hypothesis may still be upheld by replacing the concepts of syllable-timed and stressed-time rhythm with those of compensation and control. The terms 'control' and 'compensation' refer to "how vocalic and consonantal gestures are coupled in the articulatory flow".[123] Specifically, in an ideal controlling language "all segments receive the same amount of expenditure, i.e. articulatory effort, and (ideally) tend to have the same duration", while an ideal compensating language is characterised by an "increased gestural overlap in unstressed syllables, where the segment most liable to compression / coarticulation is of course the vocalic nucleus".[124] Within such a framework, vowel reduction and deletion in non-initial syllables may be explained by the interaction between a first-syllable stress and the tendency to compensate, i.e., at the prosodic level, the tendency to the tolerance of unstressed vowels towards very high levels of coarticulation. Evidently, the strength of this tendency as well as language-specific features, such as the acceptability of complex consonants clusters, may account for different outcomes in different languages.

5 Vowel Reduction and Deletion in Latin, Etruscan, and the Sabellic Languages as Contact-Induced Phenomena

The vowel reduction and deletion phenomena which occurred in Etruscan and in the Sabellic languages since the earliest epigraphic records (7th century BCE; see above, §§ 4.2, 4.3) and in Latin in the period between the earliest epigraphic

120 See Bertinetto (1989), Bertinetto & Bertini (2009), and Bertinetto & Bertini (2010).
121 Pike (1945: 34–36).
122 Pike (1945: 34).
123 Bertinetto (2009: 427).
124 Bertinetto (2009: 427).

records (7th–6th century BCE) and the emergence of literary works (3rd century BCE; see above, §4.1) resemble each other. In particular, they reflect a tendency towards rhythmic compensation and affect non-initial syllables, thus implying a first-syllable stress (see above, §4.5).

Since the early 20th century, it has been assumed that the sharing of a first-syllable stress among Latin, Etruscan, and the Sabellic languages would be a feature spread by contact.[125] Etruscan, in particular, has repeatedly been proposed as the source language. This proposal is probably influenced by both a tendency to overestimate the impact of Etruscan on Latin and the Sabellic languages (see above, §3), as well as the pervasiveness of vowel deletion in Etruscan (see above, §4.3). However, it should not be dismissed that the strength of the tendency towards rhythmic compensation may be influenced by language-specific developments and, therefore, in case of spread by contact, be greater in the target language than in the source language.

Recently, the hypothesis of a contact-induced feature has been proposed, albeit in broad terms, by Zair.[126] In contrast, Nishimura, in his studies on the stress system and the vowel reduction and deletion phenomena in Latin and the Sabellic languages, has cast doubts about such a hypothesis.[127] In particular, Nishimura argues that any influence from Etruscan should be excluded, as the earliest instances of vowel reduction and deletion in the Sabellic languages would predate the same phenomena in Etruscan. However, as shown above (§3.3), evidence for vowel deletion in Etruscan may be found as early as the second half of the 7th century BCE.

Changes in prosodic features resulting from contact are not surprising. Salmons has observed both direct and indirect evidence of such changes.[128] For instance, in the Zaonežje dialect of Russian, a shift in stress position occurred after contact with Karelian, a Uralic language with fixed initial-syllable stress. Specifically, stress, when on the final syllable, was shifted onto the initial syllable, as shown by the contrast between Zaonežje dialect *žýv'æt* '(he/she/it) lives' and standard Russian *živ'ót*.[129] Moreover, in various geographic regions, phylogenetically unrelated languages exhibit similar stress systems.[130] However, it is important to note that, when stress systems change due to contact,

125 See, for example, Skutsch (1913: 196). For an overview, see Leumann (1977: 247–248).
126 Zair (2016).
127 Nishimura (2012: 392–394; 2014: 168–169).
128 Salmons (1992: 25–27). See, also, van der Hulst, Goedemans & Rice (2017).
129 The example is from Pronk (2018: 555).
130 Salmons (1992: 43–49).

it does not mean that the target language adopts the whole stress system of the source language.[131]

Taking all this into account and considering the similarity of the phenomena, their chronology, the geographic proximity, the lack of genetic relationship between, on the one hand, Etruscan[132] and, on the other, Latin and the Sabellic languages, and the presence of changes induced by the contact between them (see above, § 3), it appears reasonable to conclude that these phenomena are contact-induced. Therefore, the issue is determining their origin and development. In theory, two broad scenarios are plausible: a contact-induced change "in language maintenance" or a contact-induced change "in language shift".[133] In the first scenario, we should assume an "intensive contact, including much bilingualism among borrowing-language speakers over a long period of time", in the second, a "large shifting group and imperfect learning".[134] Based on linguistic and archaeological evidence, it is possible to reconstruct a scenario similar to the former for the Etruscan and Sabellic groups in the centuries just prior to the start of their writing traditions. As already seen, several phenomena attributable to the contact with the Italic languages are attested in Etruscan from the earliest times (see above, § 3). Furthermore, from a historical perspective, this linguistic situation match with the processes of formation of proto-urban centres in the 9th century BCE by Etruscan populations with the participation of Sabellic groups.[135]

Conversely, as noted above, the processes of vowel reduction and deletion in Latin seem to have occurred at a later stage compared to Etruscan and the Sabellic languages (see above, §§ 4.1, 4.2, and 4.3). Moreover, with the exception of a few loanwords, there is no evidence in Latin indicating contact-induced phenomena resulting from long-term bilingualism in Etruscan or a Sabellic language.[136] Nonetheless, the rhythmic tendency towards compensation, which led to vowel reduction and deletion in Latin, may have been caused by large groups of Etruscan and/or Sabellic speakers shifting to Latin with consequent

131 Pronk (2018: 564–567). More generally, this lack of precise correspondence applies to any contact-induced change: see for example, Thomason & Kaufman (1988: 246), who consider it an "erroneous assumption that an exact correspondence between source-language structures and target-language structures is to be expected".

132 Etruscan belongs to the Tyrsenian family alongside with Lemnian and Rhaetic: see Rix (1998b: 59–60).

133 Thomason & Kaufman (1988: 50).

134 Thomason & Kaufman (1988: 50).

135 Maggiani (2012: 402).

136 On the contact between Latin, on the one hand, and Oscan, Umbrian, and Etruscan, on the other, see, for example, Adams (2004: 112–184).

imperfect learning. In this respect, as Thomason and Kaufmann note, "unlike borrowing, interference through imperfect learning does *not* begin with vocabulary: it begins instead with sounds and syntax".[137] Specifically, it would be a case of 'imposition', in which the agent(s) of transfer are dominant in the source language.[138] In Ross' terms, such a speech community may be defined as 'open', 'looseknit' and 'polylectal'.[139] From an historical point of view, this scenario seems entirely plausible. Specifically, this assumption may be supported by various evidence, such as the period of Etruscan dominance in the 6th century BCE and the existence of a vicus Tuscus in Rome,[140] as well as the migration of Sabellic groups to Rome, such as when Attius Clausus arrived from the Sabine territory with a large group of clients at the end of the 6th century BCE.[141] In these processes, the perceived prestige of those imperfect learners within the Roman society may have played a significant role in encouraging native Latin speakers to imitate them.

It is possible to argue against such a reconstruction by pointing out the natural occurrence of vowel reduction and deletion in numerous languages across the world and, therefore, suggesting that these phenomena may have occurred independently in Latin.[142] However, this objection becomes less significant when we acknowledge that both internal and external factors frequently play a role in driving linguistic changes.[143] In this particular case, linguistic and historical factors, as mentioned earlier, strongly indicate that contact was the cause, or at least one of the causes, for the change in the rhythmic pattern.

6 Conclusion

The initial formal evidence of a possible contact-induced change (see above, § 2) is the sharing by Latin, Etruscan, and the Sabellic languages of a tendency

137 Thomason & Kaufmann (1988: 39). On language shift as a trigger for phonological reshaping of the secondary language on the model of the primary language, see also Ross (2009: 191–193).

138 van Coetsem (2000: 74–75).

139 Ross (2009: 179).

140 See Colonna (1978). Some Etruscan inscriptions from the archaic period have been found in Rome and Latium.

141 Cf. Liv. 2.16.3–4 "Attius Clausus, cui postea Appio Claudio fuit Romae nomen, […] ab Inregillo, magna clientium comitatus manu, Romam transfugit".

142 I thank Professor Cuzzolin for this remark.

143 See, for example, Thomason (2001: 61–63). For language contact as an either direct or indirect actuator of change see also Joseph (2002: 51–55).

towards vowel reduction and deletion in non-initial syllables (see above, §§ 4.1, 4.2, and 4.3). Furthermore, "sachliche Argumente" (see above, § 2) may be made for such a hypothesis, namely the historical relationships between the Latin, Etruscan, and Sabellic ethne (see above, § 5) and the related contact-induced linguistic changes (see above, § 3).

In summary, it appears possible to reconstruct the following processes. In late Proto-Italic, the Proto-Indo-European mobile stress, would have been replaced by a first-syllable stress (see above, § 4.4). Subsequently, in Proto-Sabellic, there would have been a tendency towards rhythmic compensation, leading to the deletion of short vowels before *s* in final syllables and, later, to vowel reduction and deletion in non-initial syllables. These later changes occurred independently in the various Sabellic languages (§ 4.2).

In Etruscan, the original penultimate-syllable stress, which triggered a prehistoric process of apocope, would have been replaced by a first-syllable stress. Such a stress, along with the tendency towards rhythmic compensation, would account for the vowel reduction and subsequent deletion in non-initial syllables attested since the second half of the 7th century BCE and consistently written down since the beginning of the 5th century BCE (§ 4.3). Both the stress position and the rhythmic pattern would be the result of a change brought about by contact between Etruscan and the Sabellic languages, due to a widespread bilingualism among Etruscan speakers. Such a bilingualism is also evident in the numerous Etruscan words and derivational morphemes borrowed from the Italic languages (§ 3).

For its part, Latin would have inherited a first-syllable stress from late Proto-Italic (§ 4.4). The vowel reduction and deletion phenomena in non-initial syllable, which are observed only after the earliest texts (§ 2), may be attributed to the interaction between the inherited first-syllable stress and an innovative tendency towards rhythmic compensation. Such a tendency would have become widespread in Latin as a result of the imperfect learning of large Etruscan and/or Sabellic speaking groups shifting to Latin.[144]

144 In this regard, it should be noted that, assuming a tendency towards rhythmic compensation borrowed from Etruscan and/or the Sabellic languages, the vowel reduction and deletion phenomena in Latin may also be explained if the hypothesis of a Proto-Italic first-syllable accent is rejected and an archaic Latin stress system as reconstructed by Ballester (1990) is accepted.

References

Adams, James N. 2004. *Bilingualism and the Latin Language*. Cambridge: Cambridge University Press.

Bakkum, Gabriël C.L.M. 2009. *The Latin Dialect of the Ager Faliscus*. Amsterdam: University of Amsterdam.

Baldi, Philip & Pierluigi Cuzzolin. 2015. 'Uniformitarian Principle': dalle scienze naturali alla linguistica storica? *Modelli epistemologici, metodologie della ricerca e qualità del dato. Dalla linguistica storica alla sociolinguistica storica*, 37–49. Milano: FrancoAngeli.

Ballester, Xaviero. 1990. La posición del acento prehistórico latino. *Emerita* 58: 33–50.

Ballester, Xaviero. 1996. La tipología y el acento prehistórico latino. *Emerita* 64: 59–63.

Belfiore, Valentina. 2020. Etrusco. *Palaeohispanica* 20: 199–262.

Bertinetto, Pier Marco. 1989. Reflections on the dichotomy "stress" vs. "syllable-timing". *Revue de Phonétique Appliquée* 91–93: 99–130.

Bertinetto, Pier Marco & Chiara Bertini. 2009. On modeling the rhythm of natural languages. *Speech Prosody 2008. Fourth Conference on Speech Prosody. May 6–9, Campinas, Brazil. Proceedings*, ed. by Plinio A. Barbosa et al., 427–430. Campinas: International Speech Communication Association.

Bertinetto, Pier Marco & Chiara Bertini. 2010. Towards a unified predictive model of Natural Language Rhythm. *Prosodic Universals. Comparative Studies in Rhythmic Modeling and Rhythm Typology*, ed. by Michela Russo, 43–78. Roma: Aracne editrice.

Breyer, Gertraud. 1993. *Etruskisches Sprachgut im Lateinischen unter Ausschluss der spezifisch onomastichen Bereiches*. Leuven: Uttgeverij Peeters.

Campbell, Lyle. 2006. Areal Linguistics: A Closer Scrutiny. *Linguistic Areas. Convergence in Historical and Typological Perspective*, ed. by Yaron Matras, April McMahon & Nigel Vincent, 1–31. Basingstoke: Palagrave MacMillan.

Canuti, Massimiliano. 2008. *Basco ed etrusco. Due lingue sottoposte all'influsso indoeuropeo*. Pisa/Roma: Fabrizio Serra Editore.

Clackson, James. 2015. Subgrouping in the Sabellian branch of Indo-European. *Transactions of the Philological Society* 113(1): 4–37.

Coarelli, Filippo. 1983. *Il Foro Romano. Periodo arcaico*. Roma: Edizioni Quasar.

Coleman, Robert. 1990. Dialectal variation in Republican Latin, with special reference to Praenestine. *Proceedings of the Cambridge Philological Society* 36: 1–25.

Colonna, Giovanni. 1978. Etruria e Lazio nell'età dei Tarquini. *Etruria e Lazio arcaico*, ed. by Mauro Cristofani, 55–66. Roma: Consiglio Nazionale delle Ricerche.

Colonna, Giovanni. 1979. Duenos. *Studi Etruschi* 47: 163–172.

Colonna, Giovanni. 1980a. *Graeco more bibere*: l'iscrizione della tomba 115 dell'Osteria dell'Osa. *Archeologia laziale. III*, 51–55. Roma: Consiglio Nazionale delle Ricerche.

Colonna, Giovanni. 1980b. L'aspetto epigrafico. *Lapis Satricanus. Archaeological, epi-*

graphical, linguistic and historical aspects of the new inscription from Satricum, ed. by Conrad M. Stibbe et al., 41–69. The Hague: Nederlands Instituut te Rome.

Colonna, Giovanni. 1999. Epigrafi etrusche e latine a confronto. *XI Congresso Internazionale di Epigrafia Greca e Latina. Roma, 18–24 settembre 1997. Atti. I*, 435–450. Roma: Edizioni Quasar.

Crawford, Michael H. 2011. *Imagines Italicae*. London: Institute of Classical Studies.

De Simone, Carlo. 1988. Gli imprestiti etruschi nel latino arcaico. *Alle origini di Roma*, ed. by Enrico Campanile, 27–41. Pisa: Giardini Editori e Stampatori.

De Simone, Carlo. 1989. Etrusco *Acvilna* ~ latino *Aquilius*. Un problema di intercambio onomastico. *La Parola del Passato* 44: 263–280.

De Simone, Carlo. 2006. I 'Rossi' in Etruria: il nome dei *Rutuli*. *Incidenza dell'Antico* 4: 111–139.

de Vaan, Michiel. 2008. *Etymological Dictionary of Latin and the other Italic Languages*. Leiden/Boston: Brill.

Ernout, Alfred. 1909. *Les éléments dialectaux du vocabulaire latin*. Paris: Librairie Ancienne Honoré Champion.

Ernout, Alfred. 1929. Les éléments étrusques du vocabulaire latin. *Bulletin de la Société de Linguistique de Paris* 30: 82–124.

Ernout, Alfred & Antoine Meillet. 1959. *Dictionnaire étymologique de la langue latine*. Paris: Klincksieck.

Filippin, Antonio. 2022. Una 'lega linguistica' nell'Italia antica? Alcune considerazioni di metodo. *Lingvarum varietas* 11: 167–178.

Filipponio, Lorenzo. 2012. Reflexionen über die Diachronie des galloitalienischen Rhythmus. *Testo e ritmi. Zum Rhythmus in der italienischen Sprache*, ed. by Emma Schafroth & Maria Selig, 61–87. Frankfurt am Main/Berlin/Bern/Bruxelles/New York/Oxford/Wien: Peter Lang.

Flemming, Edward. 2005. *A Phonetically-Based Model of Phonological Vowel Reduction*. Manuscript.

Fortson, Benjamin W. 2011. Latin Prosody and Metrics. *A Companion to the Latin Language*, ed. by James Clackson, 92–104. Malden/Oxford/Chichester: Wiley-Blackwell.

Giacomelli, Roberto. 2006. *Nuove ricerche falische*. Roma: Il Calamo.

Gnade, Marijke & Giovanni Colonna. 2003. Dolio con iscrizioni latine arcaiche da Satricum. *Archeologia classica* 54: 1–21.

Goidanich, Pier Gabriele. 1929. Varietà etniche e varietà idiomatiche in Roma antica. *Atti del I Congresso Nazionale di Studi Romani*, 396–414. Roma: Istituto di Studi Romani.

Joseph, Brian D. 2002. Language Contact and Historical Linguistics. *The Cambridge Handbook of Language Contact. Volume 1*, ed. by Salikoko S. Mufwene & Anna María Escobar, 43–63. Cambridge: Cambridge University Press.

Höfler, Stefan. 2017. Observations on the *palma* rule. *Pallas* 103: 15–23.

Lazzarini, Maria Letizia & Paolo Poccetti. 2001. *Il mondo enotrio tra VI e V secolo a.C. Atti dei seminari napoletani (1996–1998). L'iscrizione paleoitalica da Tortora.* Napoli: Loffredo Editore.

Leumann, Manu. 1977. *Lateinische Laut- und Formenlehre*. München: C.H. Beck.

Lipp, Reiner. 2021. The medial syllable syncope in South Picene inscriptions. *Studies in General and Historical Linguistics Offered to Jón Axel Harðarson On the Occasion of his 65th Birhday*, ed. by Matteo Tarsi, 269–328. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Lucas, Christopher. 2015. Contact-induced language change. *The Routledge Handbook of Historical Linguistics*, ed. by Claire Bowern & Bethwin Evans, 519–536. London: Routledge.

Machajdíková, Barbora & Ľudmilla E. Buzássyová. 2021. Vowel deletion before sibilant-stop clusters in Latin: issues of syllabification, lexicon and diachrony. *Journal of Latin Linguistics* 20(2): 191–237.

Maggiani, Adriano. 1996. Appunti sulle magistrature etrusche. *Studi Etruschi* 62: 95–138.

Maggiani, Adriano. 2012. La religione. *Introduzione all'Etruscologia,* ed. by Gilda Bartoloni, 395–418. Milano: Hoepli.

Maggiani, Adriano. 2019. *Papals*, *nefts*, *prumts*. Termini di parentela in etrusco. Due nuove proposte di lettura. *Studi Etruschi* 82: 145–167.

Mancini, Marco. 2021. Does Prenestinian *fe*: *faked* actually exist?. *Journal of Latin Linguistics* 20(1): 75–108.

Maras, Daniele F. 2015. La prima stesura dell'iscrizione di *Manios* e l'uso epigrafico dell'interpunzione espuntiva. *Bullettino di Paletnologia italiana* 99: 113–122.

Marinetti, Anna. 1981. Il sudpiceno come italico (e 'sabino'?). Note preliminari. *Studi Etruschi* 49: 113–158.

Matras, Yaron. 2009. *Language Contact*. Cambridge: Cambridge University Press.

Meiser, Gerhard. 1998. *Historische Laut- und Formenlehre der lateinischen Sprache*. Darmstadt: Wissenschaftliche Buchgesellschaft.

Meiser, Gerhard. 2009. Le relazioni fra la lingua umbra e la lingua etrusca. *L'umbro e le altre lingue dell'Italia mediana antica*, ed. by Augusto Ancillotti & Alberto Calderini, 137–164. Perugia: Jama.

Meiser, Gerhard. 2014. *Etruskische Texte. Editio Minor*. Hamburg: Baar-Verlag.

Muysken, Pieter. 2008. Introduction. Conceptual and methodological issues in areal linguistics. *From Linguistics Areas to Areal Linguistics*, ed. by Pieter Muysken, 1–23. Amsterdam/Philadelphia: John Benjamins.

Nishimura, Kanehiro. 2010a. Chronology between word-internal and word-final vowel reduction in Latin. *Incontri linguistici* 33: 167–177.

Nishimura, Kanehiro. 2010b. Patterns of Vowel Reduction in Latin: Phonetics and Phonology. *Historische Sprachforschung* 123: 217–257.

Nishimura, Kanehiro. 2011. Syncope in Latin: A Historical Restatement of Its Condi-

tions. *Internation Journal of Diachronic Linguistics and Linguistic Reconstruction* 8: 1–41.

Nishimura, Kanehiro. 2012. Vowel reduction and deletion in Sabellic: A synchronic and diachronic interface. *The Sound of Indo-European. Phonetics, Phonemics, and Morphophonemics*, ed. by Benedict Nielsen Whitehead et al., 381–398. København: Museum Tusculanum Press.

Nishimura, Kanehiro. 2014. On accent in the Italic languages: nature, position, and history. *Studia Linguistica Universitatis Iagellonicae Cracoviensis* 131: 161–192.

Nishimura, Kanehiro. 2016. On syncope of *u*-vocalism in Sabellic. *Indogermanische Forschungen* 121(1): 199–211.

Ohanessian, Maria. 2020. Prefijación y apofonía en latín. *Lingue antiche e moderne* 9, 185–204.

Oniga, Renato. 1990. L'apofonia nei composti e l'ipotesi dell' 'intensità' in latino. *Metrica classica e linguistica*, ed. by Roberto M. Danese et al., 195–236. Urbino: QuattroVenti.

Oniga, Renato. 2006. Un'eccezione all'apofonia latina. *Studi linguistici in onore di Roberto Gusmani*, ed. by Raffaella Bombi et. al., 1337–1339. Alessandria: Edizioni dell'Orso.

Pike, Kenneth L. 1945. *The Intonation of American English*. Ann Arbor: University of Michigan Press.

Pisani, Vittore. 1978. La lega linguistica italica nel I millennio a.C. *Testi e monumenti. Studi storico-linguistici in onore di Francesco Ribezzo*, ed. by Ciro Santoro & Cesare Marangio, 117–127. Mesagne: Museo civico archeologico «Ugo Granafei».

Pronk, Tijmen. 2018. Language contact and prosodic change in Slavic and Baltic. *Diachronica* 35(4): 552–580.

Prosdocimi, Aldo Luigi. 1979a. Le iscrizioni italiche. Acquisizioni temi problemi. *Le iscrizioni prelatine in Italia*, 119–204. Roma: Accademia Nazionale dei Lincei.

Prosdocimi, Aldo Luigi. 1979b. Studi sul latino arcaico. *Studi Etruschi* 47: 173–221.

Prosdocimi, Aldo Luigi. 1986. Sull'accento latino e italico. *o-o-pe-ro-si. Festschrift für Ernst Risch zum 75. Geburtstag*, ed. by Annemarie Etter, 601–618. Berlin/New York: de Gruyter.

Prosdocimi, Aldo Luigi. 1995. Filoni indoeuropei in Italia. Riflessioni e appunti. *L'Italia e il Mediterraneo antico*, ed. by Addolorata Landi, II, 7–163. Pisa: Giardini Editori e Stampatori.

Prosdocimi, Aldo Luigi. 2009. Italia, Roma ed Etruria: aspetti degli scambi di lingua. *Annali della Fondazione per il Museo «Claudio Faina»* 16: 261–308.

Pultrová, Lucie. 2006. *The vocalism of Latin medial syllables*. Praha: Univerzita Karlova v Praze, Nakladatelství Karolinum.

Pultrová, Lucie. 2011. From the Proto-Indo-European to the Classical Latin accent. *Listy filologické* 134: 219–243.

Renner, Vincent. 2023. Structural Borrowing. *Oxford Bibliographies in Linguistics*, ed. by Mark Aronoff. New York: Oxford University Press.

Rigobianco, Luca. 2013. *Su* numerus, genus *e* sexus. *Elementi per una grammatica dell'etrusco*. Roma: Edizioni Quasar.

Rigobianco, Luca. 2017. Per una grammatica dell'etrusco. Considerazioni morfonologiche sulla derivazione di nomi e aggettivi in etrusco arcaico. *Mediterranea* 14: 185–203.

Rigobianco, Luca. 2020. Falisco. *Palaeohispánica* 20: 299–333.

Rigobianco, Luca. 2022. Sabellismi in latino e falisco. *Lingvarum Varietas* 11: 147–166.

Rigobianco, Luca. 2024. Vowel reduction and deletion in Archaic Latin: contact-induced phenomena? *Ancient Greek and Latin in the linguistic context of the Ancient Mediterranean*, ed. by Carlotta Viti, 255–271. Tübingen: Narr Francke Attempto.

Rix, Helmut. 1966. Die lateinische Synkope als historisches und phonologisches Problem. *Kratylos* 11: 156–165.

Rix, Helmut. 1981. Rapporti onomastici fra il panteon etrusco e quello romano. *Gli Etruschi e Roma*, 104–126. Roma: Giorgio Bretschneider Editore.

Rix, Helmut. 1984. La scrittura e la lingua. *Gli Etruschi. Una nuova immagine*, ed. by Mauro Cristofani, 199–227. Firenze: Giunti.

Rix, Helmut. 1989. Zur Morphostruktur des etruskischen *s*-Genetivs. *Studi Etruschi* 55: 169–193.

Rix, Helmut. 1992. Una firma paleo-umbra. *Archivio Glottologico Italiano* 67: 243–252.

Rix, Helmut. 1995. Etruskische Personennamen. *Namenforschung / Name Studies / Les noms propres. 1. Halbband*, ed. by Ernst Eichler, 719–724. Berlin/New York: de Gruyter.

Rix, Helmut. 1997. The Pre-Lucanian Inscriptions of Southern Italy. *Festschrift for Eric P. Hamp. Volume II*, ed. by Douglas Q. Adams, 144–154. Washington D.C.: Institute for the Study of Man.

Rix, Helmut. 1998a. Teonimi etruschi e teonimi italici. *Annali della Fondazione per il Museo «Claudio Faina»* 5: 207–229.

Rix, Helmut. 1998b. *Rätisch und Etruskisch*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Rix, Helmut. 2002. *Sabellische Texte*. Heidelberg: Universitätsverlag C. Winter.

Rix, Helmut. 2004. Etruscan. *The Cambridge Encyclopedia of the World's Ancient Languages*, ed. by Roger D. Woodard, 943–966. Cambridge: Cambridge University Press.

Rix, Helmut. 2005. Lehnbeziehungen zwischen den Sprachen Altitaliens. *Sprachkontakt und Sprachwandel*, ed. by Gerhard Meiser & Olav Hackstein, 559–572. Wiesbaden: Dr. Ludwig Reichert Verlag.

Ross, Malcom. 2009. Diagnosing prehistoric language contact. *Motives for Language Change*, ed. by Raymond Hickey, 174–198. Cambridge: Cambridge University Press.

Salmons, Joe. 1992. *Accentual Change and Language Contact*. London: Routledge.

Schumacher, Stefan. 2004. *Die rätischen Inschriften*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Skutsch, Franz. 1913. Der lateinische Accent. *Glotta* 4: 187–200.

Steinbauer, Dieter H. 1993. Etruskisch-ostitalische Lehnbeziehungen. *Oskisch-Umbrisch. Texte und Grammatik*, ed. by Helmut Rix, 287–306. Wiesbaden: Dr. Ludwig Reichert Verlag.

Steinbauer, Dieter H. 1999. *Neues Handbuch des Etruskischen*. St. Katharinen: Scripta Mercaturae Verlag.

Thomason, Sarah G. & Terrence Kaufman. 1988. *Language Contact, Creolization, and Genetic Linguistics*. Berkeley/Los Angeles/London: University of California Press.

Thomason, Sarah G. 2001. *Language Contact*. Edinburgh: Edinburgh University Press.

Thomason, Sarah G. 2010. Contact Explanation in Linguistics. *The Handbook of Language Contact*, ed. by Raymond Hickey, 31–47. Malden/Oxford/Chichester: Wiley-Blackwell.

Thurneysen, Rudolf. 1909. Italisches. 1. Die Betonung des Oskischen. *Glotta* 1: 240–242.

Untermann, Jürgen. 2000. *Wörterbuch des Oskisch-Umbrischen*. Heidelberg: Universitätsverlag C. Winter.

van Coetsem, Frans. 2000. *A General and Unified Theory of the Transmission Process in Language Contact*. Heidelberg: Universitätsverlag C. Winter.

van der Hulst, Harry, Rob Goedemans & Keren Rice. 2017. Word Prominence and Areal Linguistics. *The Cambridge Handbook of Areal Linguistics*, ed. by Raymond Hickey, 161–203. Cambridge: Cambridge University Press.

van Heems, Gilles. 2008. Diminutifs, sobriquets et hypocoristiques étrusques. *Les prénoms de l'Italie antique*, ed. by Paolo Poccetti, 69–110. Pisa/Roma: Fabrizio Serra Editore.

Vine, Brent. 1993. *Studies in Archaic Latin Inscriptions*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Vine, Brent. 2012. PIE mobile accent in Italic: Further evidence. *The Sound of Indo-European. Phonetics, Phonemics, and Morphophonemics*, ed. by Benedict Nielsen Whitehead et al., 545–575. København: Museum Tusculanum Press.

Walde, Alois & Johann Baptist Hofmann. 1938–1954. *Lateinisches etymologisches Wörterbuch*. Heidelberg: Carl Winter's Universitätsbuchhandlung.

Walkden, George. 2019. The many faces of uniformitarianism in linguistics. *Glossa* 4: 1–17.

Watmough, Margaret M.T. 1997. *Studies in the Etruscan Loanwords in Latin*. Firenze: Leo S. Olschki Editore.

Weiss, Michael. 2020. *Outline of the Historical and Comparative Grammar of Latin. Second Edition*. Ann Arbor/New York: Beech Stave Press.

Zair, Nicholas. 2016. Vowel weakening in the Sabellic languages as language contact. *Indogermanische Forschungen* 121(1): 295–316.

Zamboni, Alberto. 1986–1987. Tra latino e neolatino: l'evoluzione delle medie aspirate indoeuropee e le successive ristrutturazioni del consonantismo. *Indogermanische Forschungen* 91: 205–235; 92: 112–134.