Studia Linguistica Universitatis Iagellonicae Cracoviensis 131 (2014): 161–192
doi:10.4467/20834624SL.14.009.2017
www.ejournals.eu/Studia-Linguistica

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ON ACCENT IN THE ITALIC LANGUAGES: NATURE, POSITION, AND HISTORY

Keywords: vowel reduction (weakening), vowel deletion (syncope), initial-stress theory, accent shift, long-vowel notation

Abstract

The Italic languages show a number of cases of vowel reduction and deletion. When working on the actual data, it is crucial to understand the role that accent played in such phonological changes. As for the qualitative nature of Italic accent, recent typological studies suggest that the Italic accent most likely had a dominant stress nature, rather than pitch nature, in the period when vowel reduction and deletion took place. The fact that these changes occurred primarily in non-initial syllables strongly supports the hypothesis that initial syllables were consistently stressed at some point in the history of Italic. Objections to this theory should thus be rejected as groundless. The systematic difference between the initial-stress rule of Pre-Literary Latin and the Penultimate Law of Literary Latin can also be explained within a metrical framework. On the other hand, although it is not immediately clear whether Sabellic acquired an accentual system like that of Literary Latin, the long-vowel notations in Oscan and Umbrian seem to point to the retention of the older system.

0. Introduction

Over the past years I have published a series of papers on vowel reduction and deletion in the Italic languages (Nishimura 2010a, b, 2011a, b, 2012) which derive from my 2008 doctoral dissertation. These works reflect most of the essential points of the dissertation. Data that was treated there includes the following: e.g. [vowel reduction] Lat. *cōn-ficiō* 'complete' vs. *faciō* 'make'; Lat. *dēligō* 'select' vs. *legō* 'gather'; [vowel deletion] OLat. *balineum* 'bath' (< **balaneom* ← Gk. *βαλανεῖον*) > *balneum*;

Pre-Lat. **pri(s)mo-kap-s* > *prīnceps* 'chief' (n./adj.); Osc. *actud* 'plead a case' (3.sg. fut.impv.) vs. Lat. *agitō*;[1] Lat. *aut* 'or' vs. Osc. *auti* 'id.'; etc.[2]

Before confronting the actual linguistic data, my dissertation also included a discussion of what activated such a process of vowel reduction and deletion. The present work is devoted to presenting that introductory part, that is, a consideration of the accent of the Italic languages, which may be of some use to readers interested in these phonological phenomema. I will first examine the qualitative aspect of Italic accent in light of information provided by phonetics and phonology (§1). Second, I will work on the accent distribution rule on which vowel reduction and deletion were based (§2). We will thereby reconfirm the necessity of positing the traditional initial-stress theory for the Italic languages; arguments against this theory are refuted (§3). These matters are all required to understand various aspects of vowel reduction and deletion. Finally, I will also briefly survey two separate problems in Italic accentuation (§4) which were discussed in the final chapter (and the penultimate chapter in part) of my dissertation; the issues addressed will serve as subsidiary pieces for creating a complete historical picture of accentology for both Latin and Sabellic.

1. The Nature of Accent and Vowel Reduction / Deletion

The qualitative nature of Italic accent, especially that of Latin, has been the subject of much discussion, which, in its early days, created a split between scholars of the "German School" and the "French School" (see Abbott 1907: 444–445 and Leumann 1977: 244–254; less debate, however, for other Italic languages). The German School insisted on the intensive, stress nature of the accent in Classical Latin, and claimed that this was also valid for Pre-Classical Latin (= Old Latin) and, further, Prehistorical Latin,[3] while the French School argued that Classical Latin had pitch

[1] Umbrian **aitu** (≈ **ai-t**^{o} < **ak-t*^{o} < PItal. **ag-e-t*^{o}) is traditionally connected with these forms. Untermann (1995: 345–349, 2000: 72) supports a different etymology, appealing to the PIE root *h*$_{1}$*aiH-* 'to give' and the reconstruction **aiH-ie-tōd*.

[2] Vowels are only tentatively reconstructed in some cases that are controversial and require caution: e.g. *claudō* 'close' < **klāu̯i-dō*? (Gk. Ion. *κληίς*, Att. *κλείς* 'bar; key'); see Ciardi-Dupré (1901: 206), Leumann (1977: 97), and Monteil (1979: 100); but cf. Ernout, Meillet (1985: 126).

[3] Skutsch (1913: 188) argues that the positional coincidence of verse ictus and word accent in the Pre-Classical theatrical works proves the stress nature of the Latin accent (already in Lindsay 1894a: 412–14; also in Allen 1973: 153), saying that "ein musikalischer Accent konnte unmöglich irgendwie an den Iktus gebunden sein". Though some doubt has been cast on the existence of an ictus itself in Roman poetry by, e.g. Lepschy (1962: 206–215) and Oniga (1990: 217–225), the evidence emerging from statistical works is undeniable (see also footnote 23).

Likewise, some scholars, such as Lindsay (1894a: 412) and Liénard (1977a: 611–615), maintain that the persistent stress nature of the Latin accent is justified by the regular coincidence of ictus and word accent in the fifth and sixth feet in hexameter, as is suggested by Sturtevant (1919b: 385) with statistical data, and again more explicitly by Sturtevant (1940: 184–189), who considers pitch accent to have been borrowed from Greek. Allen (1973: 154, 1978: 92) also argues that the fifth foot mirrors normal spoken stress, and Sihler (1995: 241–242) similarly considers that "vigorous stress accent" lies in this position, based on the distribution of the ictus. On the other hand, Leumann (1977: 250–253) suggests that this perhaps originated only

accent – i.e. a musical accent as Greek did – and that this phonological feature can also be projected back to earlier periods.[4] As Mignot (1975: 422) says, phonetic science in the nineteenth century distinguished a rigid dichotomy between stress accent and pitch accent, and scholars tended to opt for either one or the other when describing a language, as evidenced by the clear split between the German School and French School. Progress in the field, however, revealed that these two types of accent can coexist based on different phonetic parameters such as amplitude (intensity) and frequency. Cross-linguistically, pitch accent often accompanies some stress in its high peak, and stress accent may induce some rise in pitch (see Allen 1973: 74, 94–95 and Pulgram 1975: 87, 113, and passim).[5] Thus, as Mignot remarks (1975: 422), "l'opposition des thèses française et allemande perd beaucoup de son importance".

While stress- and pitch-based accent systems are not necessarily mutually exclusive, one is nevertheless relatively more essential than the other for a given language. Based on recent typological studies provided by phoneticians and phonologists, it is most likely that the Italic accent had a dominant stress nature in the period when vowel reduction (and deletion as its extreme form) occurred – a conclusion that partly favours the views of German School. Lindblom (1963: 1773) states that "[v]owel reduction is said to be a characteristic feature of languages with heavy stress, such as, for instance, English and Swedish". Similar remarks can be found in more recent works by theoretical phonologists, e.g. Crosswhite (2001: 53, 2004: 223): "prominence-reduction appears to occur only in stress-timed languages (or dialects)"[6] and Flemming (2005: 18): "If stress is marked only by pitch movements…, no vowel reduction is expected". Recall also Meillet's description (1900: 169) that any kind of vowel in Latin was subject to vowel reduction.[7] Although it needs some elaboration

from some poets' aesthetic tastes, especially Virgil's, stating that "die Feststellungen über eventuellen beabsichtigten Zusammenfall von Wortton und „Versiktus" sind nach meiner Meinung nicht schlüssig" (Leumann 1977: 253). Laurand (1938: 137–138) is also cautious.

4 The French School mainly relied on descriptions made by ancient grammarians such as Cicero and Quintilian; however, a number of these descriptions are now generally taken as being imitative of Greek grammar or imperfect observations, which thus disguise the facts (but cf. Pedersen 1906: 232); for evaluations on these grammarians' descriptions, see, e.g. Lindsay (1894a: 407–408), Brugmann (1897: 975), Palmer (1954: 211), Lepschy (1962: 200–204), Pulgram (1975: 77, 82, and passim), Leumann (1977: 237), Laurand (1938: 137–138), Liénard (1977a: 609, 1977b: 830), Allen (1978: 84), and Sihler (1995: 241).

5 As already pointed out by Abbott (1907: 457), Sturtevant (1919a: 244), Hartmann (1923: 242), Shewring (1933: 46), and Laurand (1938: 136–137). Liénard (1977a: 615 n. 50) also writes that "[i]l est de toute façon admis qu'un accent n'est jamais purement intensif ou purement musical". Further, see Pultrová (2006: 35–36 n. 34).

6 Prominence-reduction is "based on the desire to avoid particularly long or otherwise salient vowel qualities in unstressed positions" (Crosswhite 2001: 34, 2004: 204). Given such a state of affairs, the occurrence of unstressed [a], a highly sonorous vowel, is highly disfavored. This type of reduction is distinguished from "contrast-enhancing reduction", whose object is the "elimination of noncorner vowels, especially mid vowels" (Crosswhite 2004: 192); unstressed [a] is then favored. Parker (1988: 234–236) claims different patterns of vowel reduction, like *i*, *u* > *e* and *a* > *e*, *e* > *i*. From a typological standpoint, his hodgepodge of various kinds of vowel reduction is hard to justify.

7 Note that there is some difference in frequency among vowels targeted by vowel reduction. Though the "apophonie" *a* ~ *i*, *a* ~ *e*, and *e* ~ *i* is frequently observed, reduction of back vowels

and restatement, his remark is basically accurate. See also his (1918: 107) other statement that "[l]es langues où les voyelles inaccentuées s'altèrent sans considération du degré d'ouverture sont celles où l'accent est, de manière dominante, un accent d'intensité: l'allemand, l'anglais, le grand russe".[8] Moreover, as Hayes (1995: 49) suggests, languages with pitch accent may have accentual contrasts within a single syllable: for a heavy syllable, two kinds of prominence {rising/falling}, as seen in Ancient Greek, Lithuanian, and so forth. There seems to be no such phenomenon observable for Latin or Italic in general.[9]

This does not imply total exclusion of "the presence of associated pitch-phenomena" (Allen 1969: 193; already in Brugmann 1897: 975). In the historical scenario claimed by Niedermann (1953: 11), pitch accent emerges in the Literary period (from ca. 250 BCE),[10] as inferred from ancient grammarians' descriptions,[11] though Allen (1973: 151–154) accuses them of slavish misapplication of Greek principles, thus assuming the maintenance of a stress accent feature throughout the history of Latin. Leumann (1977: 248–254) also proposes that pitch accent became dominant in Literary Latin, though he claims that this was accompanied by stress accent (cf. the reverse in Lindsay 1894a: 408).[12] From a sociolinguistic standpoint, Abbott (1907: 451–460), Kent (1932: 66), Pulgram (1975: 118–122), and Deroy (1981: 227–228) argue that stress accent was subsumed by the "high-style" Greek pitch accent during the Literary

like *o* and *u* is relatively limited; see also Oniga (1990: 210–217). Rix (1966: 162) also suggests that *o*- or *u*-vocalism is often restored by analogy. The mechanism of analogy for *o*-vocalism as well as *e*-vocalism is presented in Nishimura (2010b: 234–249). As for the relatively stable nature of *u*-vocalism in this regard, see Nishimura (2010b: 223–225). Juret (1919: 94) says that "les composés dont la voyelle radicale est *ŏ*, *ŭ*, ont presque toujours conservé ces timbres, sans doute parce que la soudure des éléments de ces composés a été tardive et s'est faite alors que la transformation de ces timbres n'était plus exigée : *invocō*, *colloquor*, *ēducāre*, etc". Note, however, that the time of attestation and the date of creation are two different things; Juret's view is thus circular.

[8] See also Brugmann (1904: 63), Abbott (1907: 452), and Laurand (1938: 135–139). In contrast to syncope, Skutsch (1913: 194) ascribes vowel reduction to musical accent, which is without foundation; see Hayes (1989: 294).

[9] On terms such as "acute", "grave", and "circumflex" used by Roman grammarians (e.g. Quint. 1.5.30–31), critical comments are provided by Lindsay (1891: 373), Pulgram (1975: 92), and Allen (1978: 83–84); but cf. Pisani (1930: 169).

Schmid (1954: 33 n. 1) argues that anaptyxis is a feature of languages with stress accent (Osc. **aragetud** 'money' = Lat. *argentō*, Osc. **teremníss** 'boundary stones' = Lat. *terminibus*), but cf. Hall's work (2003) on vowel intrusion, especially Chapter 5 concerning Hocank (Winnebago), a Siouan language with pitch accent and anaptyxis.

[10] I assume a dichotomy between "Pre-Literary (Latin)" and "Literary (Latin)" (cf. Clackson 2004: 790). Note, however, that this distinction is in fact misleading, as Liénard (1977a: 602 n. 9) correctly points out, since there should have been some forms of literary works, like Saturnian verses, before ca. 250 BCE. The term "Literary Latin" will be used for the sake of convenience, in order to name the period from Livius Andronicus onwards, including more familiar appellations of stages like "Old (Pre-Classical) Latin", "Classical Latin", and "Post-Classical Latin".

[11] See also Abbott (1907: 449) and Questa (2007: 150); but cf. Brown (2009: 448–449).

[12] Both Niedermann (1953: 11) and Leumann (1977: 246–248), however, assume stress accent on initial syllables in the Pre-Literary period. Maniet (1957: 28) notes that the nature of the accent is a matter of degree, and varies depending on factors like linguistic substrata and social rank.

period, though it survived in vulgar forms.[13] Vowel deletion sporadically continued in the Literary period, which may imply a predominance of stress accent over pitch accent; but it is hard to know how to evaluate this.

2. Position of Accent: The Initial-stress Rule in the Italic Languages

From the discussion above, it follows that vowel reduction and deletion in Italic were undoubtedly triggered by stress accent, and took place most frequently in unstressed syllables.[14] The question then arises as to which syllables were stressed and which were unstressed. The answer to this question requires a diachronic perspective, since the accent distribution was determined by different rules in different periods.

Leumann (1977: 246) relates that since Verner's Law was discovered in 1877, people have tried to trace several sound changes in Latin (and perhaps Sabellic as well) back to the accentual system reconstructed for Proto-Indo-European (PIE). In the parent language, the position of the accent is connected morphologically with the ablaut of the root, suffix, and ending, and in principle the accent may fall on any syllable of the word according to PIE morphophonemic rules. Though Leumann stated that such attempts had mostly failed, it is now believed by some scholars that Proto-Italic may have preserved some remnants of the PIE accentual system.[15] For instance, Vine (2004: 623, 2006) demonstrates that the change **-ou̯-* > *-au̯-* ("Thurneysen-Havet's Law") in Latin was sensitive to the position of the PIE accent.[16] Some scholars, such as Rix (1996: 158 n. 7), Meiser (1998: 74), and Meier-Brügger (2010: 289), ascribe the retention of the final syllable of Latin *pede* 'foot' (abl.sg.) to the PIE accent (< **ped-í*, and also *nocte* ≈ Gk. *νυκτί* 'night', *ante* ≈ Gk. *ἀντί* 'opposite'; cf. apocope in unaccented verbal endings **-mi*, **-si*, **-ti*, **-nti* > *-m*, *-s*, *-t*, *-nt*).[17] The two-way development of syllablic resonant + laryngeal in interconsonantal position may depend on whether the sequence was accented or not (*plānus* 'flat' < **pl̥h₂-nó-* vs.

[13] See also Shewring (1933: 49). On the later resurgence of stress over pitch in the development to the Romance languages, see also Biville (1990: 19).

[14] Oniga (1990: 215 and passim) objects that the vocalic alternation in Latin discussed here was not motivated by accent but a morphological factor, claiming that only in a syllable after a morpheme boundary (e.g. after a prefix or a reduplicated syllable) can the vowel undergo a qualitative change, as in the compound *con+ficiō* (cf. *cale#faciō*, in which the two elements are not sufficiently univerbated as to trigger the vowel change) (Oniga 1990: 215–216). However, his view is not satisfactorily motivated. If such a development had nothing to do with the phonetic feature of accent, we could have utterly different types of sound changes, for example, *i* > *e* or *u* > *o*. Based on the behaviour of unstressed vowels, there is no doubt that stress (or more precisely, the absence of stress) played a role in our cases.

[15] Though Brugmann (1897: 971) considers his evidence insufficient, Hirt (1895: 42–43) already suggests the same idea, adducing the following examples: **-mi*, **-si*, **-ti* > *-m*, *-s*, *-t*; *tot* 'so many', *quot* 'how many; as many as' (≈ Ved. *táti*, *káti*); *per* 'through' (≈ Ved. *pári*, Gk. *πέρι*); *et* 'and' (≈ Gk. *ἔτι*) vs. *rūre* 'in the country'; *pede* (≈ Gk. *ποδί*).

[16] See also Pike (2008: 54) and Hackstein (2011: 110). The very early application of this change in Italic, prior to *-eu̯-* > *-ou̯-*, is also pointed to by Tadani (2005: 91–93), who however does not mention the name of the law.

[17] But cf. Clackson and Horrocks (2007: 52–53).

palma 'palm' < **palamā* < **pl̥̂h₂-meh₂*; see Vine 2012a: 546, 568). In addition, Dybo's Law perhaps belongs here: e.g. **u̯īró-* > *vĭr* 'man' (see Meiser 1998: 75; cf. Vine 2012a: 547 n. 8). Still, our knowledge about accent in the Proto-Italic period is rather limited; vowel deletion seems marginal (cf. a recent approach in Vine 2012b) and vowel reduction is almost never observed.[18]

The accentual system of Literary Latin, the so-called Penultimate Law[19] (or three-syllable rule), is the best understood part of the accentual history of Italic: stress falls on the penult if it is a heavy syllable, otherwise on the antepenult in words of more than two syllables; monosyllabic words bear stress on their only syllable. This rule obviously does not continue a PIE accentual rule, as was pointed out by many scholars, such as Dietrich (1852: 545), Sommer (1914: 84), Pisani (1930: 151–152), Leumann (1977: 246), Prosdocimi (1986: 613), Sihler (1995: 59), and Meier-Brügger (2010: 289).[20] It is securely established by evidence internal to Literary Latin, that is, testimony provided by ancient grammarians and later manifestations in the Ro-

[18] Vine's proposal (2012a) that **-e-*, when unaccented according to the PIE mobile accentuation rule, was raised to **-i-* before *-i̯V-*, in order to explain forms such as causative *sōpiō* 'cause to sleep' (< **su̯ŏp-ei̯e-*) and denominative *serviō* 'wait on' (< **seru̯e-i̯é-*), may be regarded as a very early type of vowel reduction.

[19] The terminology is in fact misleading, as Allen (1983: 1) points out; for if the penult is a light syllable, the accent is shifted to the antepenult. Regarding the possible participation of the ultima in accentuation, see the same work of Allen and Kent (1932: 66); according to Allen, a super-heavy ultima may have rendered words oxytone, as in *audĭt*, *fūmăt*, *nostrās*, *tantŏn*, *illĭc*, and *illínc*, which come from *audĭvit*, *fūmāvit*, *nostrātis*, *tantŏ-ne*, *illĭce*, and *illínce*, respectively (1983: 2; see also Maniet 1957: 158 and Allen 1978: 87). But another factor, i.e. leveling to keep the accent on the same syllable, may have prevented words from becoming oxytone (Allen 1983: 8–10). Leumann (1977: 238–240, 601), on the other hand, suspects that a major part of the description by ancient grammarians concerning the existence of oxytones is their arbitrary invention or is based on inaccurate observations; see also a similar comment by Lindsay (1894a: 410). Leumann also takes another type of divergence from the Penultimate Law as dubious, as with *trĭgintā* (Consentius 5.392.4K). But some forms from Romance languages prove that the accent was on the antepenult in the higher decades: e.g. **quadrá(g)inta* '40' > *CIL* XIII 7645 **QVARRANTA** > Ital. *quaranta* and OFr. *quarante* (see Weiss 2009: 372–373, and also Lindsay 1891: 407–408). Menéndez Pidal (1973: 243–244) notes that while Spanish and Portuguese usually continue the Classical Latin accent (OSp. *veínte*, *treínta*), other Romance dialects reflect one of Vulgar Latin, assuming a historical development something like *-ā(g)intā* > *-āíntā* ("Classical" type) > *-ăíntă* ("Vulgar" type) > *-anta*. As Menéndez Pidal adds, the "Vulgar" type encroached in Iberia as well, appearing in Catalan *seixanta*, *vuytant*, etc., Leonese *cinquanta*, *novanta*, etc., Aragonese *quaranta*, *xixanta*, etc.; for the vulgarism in 'twenty' and 'thirty', see Portuguese *vinte* and Portuguese Leonese *trinta* (< **ví-*, **trí-*). For further implications of this evidence, see Nishimura (2010b: 245–246 n. 67).

Prosdocimi (1986: 603) argues that the accent in an accentual system with no morphological motivation should be fixed in location "per sua natura", and that languages like Latin where the syllabic weight of the penult determines whether it will take the accent or shift it to the antepenult are not normal. Typologically, however, the accentual pattern found in Latin is also seen in a number of languages (see Hayes 1995: 92 and also Kager 1999: 279). His rigid restriction of accent to the penult at some point in the history of Italic is not well-grounded, and undermines his whole argument.

[20] Nyman (1983: 34) argues for a certain similarity of accentuation between PIE and Latin (cf. Devoto 1925: 46), so as to suggest that the accent of Pre-Literary Latin is relatively free in terms of its location (see also Oniga 1990: 203–204); but the evidence he provides is mostly dubious.

mance languages. Under this system, vowel deletion was relatively more frequently observed than when a PIE accentual pattern was still operative. But many of the forms that underwent vowel deletion cannot be explained by this rule; as a matter of fact, most appear in a syncopated form already by the Literary period. Vowel reduction also seems to have been mostly completed (see more details in §2.1).

It follows that there was an intermediate stage between PIE and Literary Latin where vowel reduction and deletion were often triggered. Indeed, scholars have long attempted to elucidate what the accentual system looked like in Pre-Literary Latin. As the Sabellic dialects have no direct offshoot themselves as Latin does with the Romance languages, the evaluation of their limited number of linguistic remains is the only way to investigate their accentuation system. This difficulty may be partly overcome by applying findings from Latin to the Sabellic context.

The most remarkable feature of vowel reduction and deletion in Italic is that the overwhelming majority of examples show changes in *non-initial* syllables, as is observed by many scholars, such as Thurneysen (1883–85: 313), Meillet (1933: 56, 133), Sturtevant (1940: 28, 177), Palmer (1954: 211), Benediktsson (1960: 281), and Jiménez Zamudio (1980: 149).[21] This fact strongly suggests that initial syllables bore stress at some point in the history of Italic, thus triggering vocalic changes in non-initial unstressed syllables. Indeed, the most common idea among scholars is this initial-stress theory,[22] initially supported by the German School; according to this idea, the accent in Pre-Literary Latin and Sabellic was placed on the initial syllable of

[21] Ballester (1990: 41) claims that the vocalic alternations in question are marginally seen in initial syllables as well, giving the following forms and their reconstructions: "¿—*bĭtūmen* < **betu*-; *cīcātrix*, cf. **cecare*?; *cīcĭndēla* < **cecand*-?; *cīcōnia*; *cīsōrium* < **caesōrium*; *ĭmāgō* cf. *aemulus*?; *lĭdūna* cf. *ledō*; *Nĕptūnus* < **năp*-?; *sĭmītū* < **semeitus*?; *lŭcūna* = *lacuna*—?". But none of the examples are well-grounded enough to support his argument. Some are based only on vague etymologies or late attestations, and others can be explained by assimilation to the vocalism of the following syllables. The form *imāgō* is currently explained as the zero-grade of the root (**h₂eim*-), equated with Hitt. *ḫimma*- 'substitute'; see Martzloff (2007: 125).

[22] This theory is said to have originated from Dietrich (1852: esp. 546), though his definition is not purely phonological, but rather morphologically motivated (see also Möller 1922: 169 nn. 1, 3). The concept of "initial stress" seems to have been "mistakenly" deduced from Dietrich's theory by someone, perhaps Thurneysen (1883–85: 313); see Pederson (1895–96: 67; 1905: 338 "die Thurneysen'sche hypothese"), and also Oniga (1990: 203). Though Corssen is honoured as the author of the theory by Lindsay (1891: 406, 1894a: 408), Corssen (1870: 892–906) in fact made no contribution to its establishment, rather claiming a different (less binding and unnatural) system. Since Dietrich (or Thurneysen), it has acquired so many followers that it has repeatedly appeared in most of the standard (hand)books of Latin: e.g. Lindsay (1894a: 157–159), Sommer (1914: 84–86), Palmer (1954: 212), Leumann (1977: 246–248), Allen (1973: 93–94, 133, 151; 1978: 83), Sihler (1995: 239), Meiser (1998: 53, 66, and passim), Baldi (2002: 269); non-Latin Italic: e.g. von Planta (1892: 589), Conway (1897: 495), Buck (1928: 101), Bottiglioni (1954: 23), Poultney (1959: 30), Meiser (1986: 32–33), Wallace (2007: 17); and of Indo-European: e.g. Hirt (1895: 41), Brugmann (1897: 213), Vineis (1994: 298–299), Villar (1997: 476), and Meier-Brügger (2010: 289–290); as well as in specialised studies of Latin and Sabellic prosody: e.g. Thurneysen (1908: 240–242), Skutsch (1913: 187), Götze (1923: 80), Kent (1931: 177, 188–189), Sturtevant (1940: 177–178), Kuryłowicz (1958: 381), Benediktsson (1960: 281–283), Mignot (1975: 425–426), Liénard (1977a: 609–611), Allen (1983: 2), Deroy (1981: 223–224, 228, 232–234), Biville (1990: 19–20), Parsons (1999: 133–134), and Dupraz (2006: 300).

each word.[23] In this hypothesis, Latin is assumed to have changed the placement of the accent before (ca. 4th c. BCE, by Leumann 1977: 246; cf. "im frühen dritten Jahrhundert" in 1977: 253) or around the beginning of the Literary period (ca. 250 BCE, by Baldi 2002: 269). A possible shift in accent placement in Sabellic will be briefly examined in §4.2. Initial stress might possibly be interpreted as a Proto-Italic feature, as is assumed by Brugmann (1897: 971), Kent (1932: 65), Sturtevant (1940: 178), and Benediktsson (1960: 281).

In Brugmann's view, initial stress developed as a secondary accent under the PIE accentuation system (see also Durante 1958: 98), the latter of which was then abandoned. Skutsch (1913: 199) does not accept a Proto-Italic origin, because it cannot explain the difference in accentual effects between Latin (mostly vowel reduction) and Sabellic (mostly vowel deletion). Some scholars have suggested that contact with a neighbouring language (or languages) with strong initial stress secondarily induced Latin and Sabellic to gain the same or a similar stress system. Among others, Etruscan is often adduced as the source of such a system; in Etruscan, vowels in an unstressed position are believed to have all merged into [ə], represented graphically in a haphazard way from the first half of the fifth century, and later syncopated: e.g. Gk. *Ἀχιλλεύς* → *Aχale ~ Aχile ~ Aχele ~ Aχule* vs. *Aχle*.[24] However, the discus-

[23] Besides vowel reduction and deletion, some scholars appeal to metrical evidence. The podic ictus in iambo-trochaic verse has been regarded as evidence for initial stress (but cf. Pedersen 1905: 337–338). Poets of Pre-Classical Latin, such as Plautus and Terence, are said to have tried to make word accent and ictus coincide with each other. This traditional view is found in many scholarly works, as in Lindsay (1894a: 158, 1894b: 408–409, 1900: 357), Sommer (1914: 86), Sturtevant (1919a, 1940: 181–186), Allen (1978: 83), and Palmer (1954: 213). For the history of research on this issue, see Corssen (1870: 892–893) and Fortson (2008: 30–33). As noted in footnote 3, theories based on the ictus are not entirely without problems (see Ernout 1929: 112 and Gratwick 1993: 59–60). Yet, among the arguments for such theories, despite Corssen's objection (1870: 893, 906), the fact that forms of ⏑¯⏑¯#, as in *facilius* (*facilis* 'easy'), *sequiminī* (*sequor* 'follow'), *ceciderō* (*cadō* 'fall'), *mulierem* (*mulier* 'woman'), *voluerat* (*volō* 'want'), *capitibus* (*caput* 'head'), *miseria* 'distress', *meminerō* (*meminī* 'remember'), *parietem* (*pariēs* 'wall'), *hariolum* (*hariolus* 'soothsayer'), are often so arranged in iambo-trochaic verse for the ictus to be posed on the initial syllable, is noteworthy. The reason seems to be that the word accent is situated there, i.e. *fácilius*, etc.; see Lindsay (1892a, b) and Brugmann (1904: 63). Sturtevant (1919a), following Lindsay's formulation (1894: 158) on the *fácilius*-type accent, conducts a statistical study on harmony between accent and the ictus. The accentuation has been interpreted as a relic of the initial-stress period (see, e.g, Brugmann 1897: 973–974), eliminated toward the beginning of the Classical period; some reformulation of this matter is presented in Nishimura (2011a: 10–14).

Alliteration has been invoked as evidence for initial stress by many scholars: e.g. Altheim (1951: 301), Durante (1958: 62, 81), Meiser (1998: 53), and Meier-Brügger (2010: 290). Even Havet (1889: 13), who disagrees with the initial-stress theory, accepts alliteration as evidence for his theory of intensive pronunciation of initial syllables (see §3.1). Meillet and Vendryes (1948: 115), however, are not convinced by such a correlation, saying that "l'allitération n'est pas en latin un procédé essentiel comme elle l'est dans la plus ancienne versification des Irlandais, des Anglo-Saxons et des Scandinaves"; nor are Pulgram (1975: 95 n. 43) and Oniga (1990: 226). See also Sturtevant's citation (1940: 180) of Enn.*Ann*.104Sk: *O Tite tute tibi tanta tyranne tulisti*; then, "[i]t is perhaps open to question whether this feature of early Latin was a survival from the time of the prehistoric initial stress or whether it was still favored by the accent of Ennius' own time".

[24] For general descriptions of the Etruscan accent, see de Simone (1970: 91–92), Leumann (1977: 247), Cristofani (1991: 42), and Rix (2004: 949). On borrowings from Greek in particular,

sion does not seem to go beyond the level of speculation (cf. Devoto 1925: 46). In the case of Sabellic, influence from Etruscan is almost inconceivable chronologically, as discussed at some length in Nishimura (2012: 392–394).[25]

Whatever the origin of initial stress, an accentual pattern based on it is required to explain non-initial vowel reduction and deletion in the Italic languages. In what follows, linguistic evidence that supports such an accentual system will be presented.

2.1. Vowel Reduction in Latin[26]

Latin exhibits a wide range of vowel reduction in non-initial unstressed syllables, which requires a fairly detailed description. Chronologically, most scholars agree that it began later than the first layer of attested Latin and predated the Literary period (since ca. 250 BCE). Though an absolute date cannot be easily specified, there are a few inscriptions that are of some interest for this purpose. *CIL* I² 4 ("the *Duenos* inscription"; Rome, ca. 600–575 BCE) provides the forms **IOVESAT** '*iurat*, swears' and **FECED** 'made' instead of ****IOVISAT** and ****FECID**, respectively. This is also the case with **IOẏE**[**S**]**A** '*iura*, oaths' in the Corcolle Altar fragments (ca. 500 BCE), based on Vine's interpretation (1993: 76–78), followed tentatively by Hartmann (2005: 167). The form **FHE : FHAKED** '*fecit*, made' in the Praenestine Fibula can be added here (i.e. neither ****FHE : FHIKID** nor ****FHE : FHIKED**).[27] Further, the personal name **MAMARCOM** (Gnade and Colonna 2003; Satricum, 575–525 BCE)[28] and the theonym **MAMARTEI** '*Marti*' in the *CIL* I² 2832a ("Lapis Satricanus"; Satricum, ca. 500 BCE), contrasting with Classical *Māmertīnī* (inhabitans of Messana), etc., may indicate that reduction in closed (and perhaps diphthongal) syllables was an event that occurred within the recorded history of Latin.[29]

More important is to acknowledge that vowel reduction has its origin in Pre-Literary Latin, which means that the Penultimate Law is in principle irrelevant to the

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where stress seems to have been shifted to initial syllables, see Deecke (1878: 176). Concerning other hypotheses, with reference to different sources such as Germanic and Celtic (e.g. Thurneysen 1883–85: 313), see a brief survey by Leumann (1977: 247–248). Similarity of Latin with Germanic, as well as Etruscan, in terms of accentuation is already mentioned by Dietrich (1852: 545). Skutsch (1913: 188) reports that attempts to connect Latin with Celtic and/or Germanic were generally abandoned (see also Durante 1958: 87). He (1913: 190, 198–199) then strongly argues for Etruscan influence on the Italic languages (cf. Pisani 1930: 150, who assumes the opposite direction of influence), though the idea is refuted by de Simone (1970: 92) on the basis of the different patterns of subsequent sound changes.

[25] Cf. Durante (1958: 90–91) for the opposite direction of influence, which does not seem so compelling.

[26] See Nishimura (2010a, 2010b, 2011b) for more details.

[27] See Maras (2012: 20) for the recently proved authenticity of the inscription by means of a scientific probe.

[28] I am grateful to Giovanna Rocca for informing me of this form.

[29] The retention of original vowels in these cases is perhaps only the graphic, concealing the real phonetic value. Phonemically non-neutralising vowel reduction (cf. Nishimura 2010b: 217–227) is difficult to identify from orthography alone. However, as there are no other linguistic indications of such a reduction, it is better not to entertain too much speculation on these issues.

instantiation of this vocalic change (yet, I have proposed that this accentual rule played a certain role in finalising the whole process of vowel reduction; see Nishimura 2010b: 230–245). True, as Nyman (1983: 33) points out, arguing against the initial-stress theory, the majority of cases of vowel reduction can also be explained even within the Penultimate Law framework, as the accent would fall on the initial syllable in trisyllabic words with a light penult: e.g. **pér-fakit* > *pérficit* 'finish', **kón-tenet* > *cóntinet* 'hold', **ánamos* > *ánimus* 'mind' (cf. Gk. *ἄνεμος* 'wind'). There are, however, a group of forms in which heavy medial syllables underwent vowel reduction; they are difficult to explain under the Penultimate Law (as already pointed out by Corssen 1870: 896): e.g. *aestimō* (< **ai-*) 'estimate' vs. *exīstimō* 'id.' (< **eks-aistimō*); *Tarentum* [toponym] (< **Tárantum* ← Gk. *Τάρας*, *Τάραντος*). Initial stress may better account for such vowel reduction in the following heavy syllables.

It is also less likely that the change took place under the PIE accentuation system; though some sound changes, such as apocope, may have been triggered by that system, **pedí*, for instance, never became ***pidí* (> ***píde*). Thus, vowel reduction is to be regarded as a process that occurred in a period not much earlier than Literary Latin.

With initial stress as a conditioning factor, vowel reduction followed somewhat regular patterns which have been repeatedly described in many handbooks and articles. Different vowels in the root of simplex verbs and prefixed verbs (and the latter's derivatives as well) are frequently cited, as has already been done at the beginning of this work. In the case of *faciō* 'make' and its prefixed verb *cōn-ficiō* 'complete', we notice the vocalic alternation *-a- ~ -i-*, one type of the so-called "apophonie latine", in the French-School terminology. Within the initial-stress theory, this phenomenon could be historically explained as follows: *cōn-ficiō* begins as something like **kón-fakiō*, with a stress accent on the first syllable; the vowel *a* in the following syllable is weakened to *i*; later, the accent is transposed to the antepenult in accordance with the newly established Penultimate Law, and *-ficiō* remains as a relic of the earlier stage. There are many other examples of simplex/prefixed verbs that can be explained by assuming the same type of diachronic process: e.g. *agō* 'lead' vs. *ex-igō* 'drive out' (< **éx-agō*); *cadō* 'fall' vs. *ac-cidō* 'fall upon' (< **ád-cadō*); *capiō* 'take' vs. *in-cipiō* 'I take in hand' (< **ín-capiō*); *legō* 'collect' vs. *dē-ligō* 'single out' (< **dḗ-legō*); *rapiō* 'snatch' vs. *sur-ripiō* 'snatch away' (< **súb-rapiō*); *arguō* 'declare' vs. *rederguō* (~ *redarguō*) 'disprove'; *scandō* 'climb' vs. *inscendō* 'climb in' (< **en-skandō*), etc. A vocalic alternation seen in the Pre-Classical Latin subjunctive *tagam* vs. *at-tigās* (< **th_2ĝ/g-*, cf. *tangō* 'touch') most likely belongs here also; see *LIV* (2001: 616–617). On the other hand, there are quite a few examples that exhibit no vowel change: e.g. *edō* 'eat' vs. *comedō* 'eat up'; *gemō* 'groan' vs. *ingemō* 'groan over'; *medeor* 'heal' vs. *remedium* 'remedy'; *petō* 'seek' vs. *appetō* 'strive for'; *veniō* 'come' vs. *subveniō* 'come to help', etc. besides doublets with or without a reduced vowel: e.g. *arguō* 'declare' vs. *rederguō* 'refute' (cf. *redarguō*); *canō* 'sing' vs. *occinō* '(of birds) to break in with a song' (cf. *occanō* '[of trumpets] to interpose a call'), *occentō* 'sing at' (cf. *occantō*); etc. On the surface, it might seem that these examples involve analogical retention of the root vowel of the simplex verb;[30] however, such analogical retention should be restricted, as shown in Nishimura (2010b: 234–245).

Reduplicated perfect forms can also be taken to show the same vocalic alternation. This could also be explained by assuming a stress accent on the initial syllable, whence vowel reduction of the following syllable: e.g. *canō* 'sing' vs. *cecinī* < **ké-kan-aḭ*; *cadō* 'fall' vs. *cecidī* < **ké-kad-aḭ*; *meminī* 'remember' (< **mémon-*); *pangō* 'fasten' vs. *pepigī* (< **pépag-* < **-ph$_2$ĝ-*); etc. Forms such as *dedī* (*dō* 'give') and *stetī* (*stō* / *sistō* 'stand [intr./tr.]') are also formed by reduplication, but have only two syllables, one syllable less than the other forms above. However, when they are prefixed, the whole number of syllables is increased. Given that the stress accent falls on the prefix, the vowel in the following syllable that was originally the reduplicant is normally reduced: *perdō* 'destroy' vs. *perdidī*; *perstō* 'stand firmly' vs. *perstitī*; *resistō* 'resist' vs. *restitī*; *trādō* 'deliver' vs. *trādidī*; etc. Note that the formation of the perfect by means of reduplication is no longer productive in Latin, so examples of this type are quite limited.

In addition to verbal categories, the paradigms of consonant-stem nouns can also be regarded as showing vocalic alternation due to initial stress. Within a given paradigm, the number of syllables in the nominative singular is different from that of other case forms, and this motivates vowel reduction. When a nominative singular consists of two syllables, other case forms have more than two. Therefore, provided that the stress accent falls on initial syllables, vowels in the following syllables in non-nominative cases become reduced: e.g. nom.sg. *caput* 'head', gen.sg. *capitis*; nom.sg. *manceps* 'legal purchaser', gen.sg. *mancipis*; nom.sg. *pecten* 'comb', gen.sg. *pectinis*; etc. This does not take place in all consonant-stem nouns; cf. nom.sg. *anas*, gen.sg. *anatis* 'duck'; nom.sg. *seges*, gen.sg. *segetis* 'cornfield'; etc. It is likely that such cases involve analogy with the nominative singular form or an assimilative effect caused by the vowel of the initial syllable, as in *alacer* 'cheerful', *alapa* 'box on the ear', *calamitās* 'disaster', and *vegetus* 'lively'.[31]

The categories above are those that commonly show vowel reduction. There are, however, some other sporadic cases such as prefixed nouns or adjectives and univerbated prepositional phrases in which the reduction process is parallel to that of

[30] This view is repeated in the literature, such as Juret (1919: 5), Niedermann (1953: 3), and Biville (1990: 9–10). Oniga (1990: 212), however, claims that "si suole affermare che i composti non apofonici sono tutti formazioni recenti o ricomposizioni analogiche, ma queste affermazioni sono in molti casi sostenute solo dall'ipotizzata legge fonetica, per cui il ragionamento è circolare", adducing the word *accentus*, which he argues was formed in a relatively late period. The same caveat is also applicable to Adiego Lajara (1994: 262) and perhaps to his entire analysis of anaptyxis.

As Lindsay (1891: 407) indicates, the accent seems to have shifted to the stem in Vulgar Latin: e.g. *recípit* 'hold back' (Ital. *riceve*, Fr. *reçoit*), *dēmóra* (Ital. *dimora*, Fr. *demeure*). Thus, Lindsay argues that "[w]ith this we may connect the tendency in the spelling of post-classical Inscriptions and of our earliest MSS. to restore the Vowels in Compound Verbs to their undecayed form, e.g. *consacro*, *compremo*". In Nishimura (2010b: 234–239), I claim that there is no need to posit that vocalic restoration occurred only since the Vulgar Latin period.

[31] This assimilation process is discussed in many works, such as Juret (1919: 94, 104), Kent (1932: 99–101), Leumann (1977: 81, 100), and Biville (1990: 10). In the manuscripts of Plautus and Cicero, we have *anites* (*Capt.* 1003) and *anitum* (*N. D.* 2.124), respectively, as Biville notes. The form *alacer* must also have had variants like **alicer* and **alecrem* which were taken over by the Romance languages, as in Sardinian *allirgu* (< **-i-*), Old French *aliegre*, Italian *allegro*, Spanish *alegre* (< **-e-*). See more details in Juret (1919: 105) and Biville (1990: 11).

prefixed verbs: e.g. *medius* 'middle' vs. *dīmidius* 'half'; *datus* (*dō* 'give') vs. *-ditus*; *peregrī* 'abroad' < **per* + **agro-*; *inimīcus* 'unfriendly' vs. *amīcus* 'friendly'; *facilis* 'easy' vs. *difficilis* 'difficult'; *ēminus* 'at a distance', *comminus* 'hand to hand' (cf. *manus* 'hand'); *prōtinus* 'straightforwards' (~ *prōtenus*; cf. *tenus* 'reaching to'); OLat. *propitius* 'favourable' < **pró-petios* ← *petō* 'seek' (or *prope* 'near'); *assiduus* 'persistent' < **ád-seduos* (cf. *admodum* 'up to the measure', *affatim* 'sufficiently', *advena* 'newcomer'); *locus* 'place' vs. *īlicō* 'on the spot' (< **en stlokōd*); *sēdulō* 'diligently' (cf. *dolus* 'wile'); *dēnuō* 'again' (cf. *novus* 'new'); *profectō* 'actually' (cf. *factum* 'action'). Some nominal derivatives and compounds also belong here: e.g. *genitor* 'father' (Gk. *γενέτωρ*, Ved. *janitár-*); *capitālem* 'mortal' < **kaput-* (cf. the archaised CAPVTALEM in *CIL* I² 581 "Senatus Consultum de Bacchanalibus"; see Wachter 1987: 295–296); *hospitem* 'host' < **hosti-potem*; *Iuppiter* [theonym] vs. *pater* 'father'. Further, some cliticised forms: e.g. *quīlibet* 'no matter who/what' < **-lubet* (see Havet 1889: 16 n. 2); *ita* 'thus' vs. *itidem* 'in the same way';[32] *undique* 'everywhere' vs. *unde* 'whence'. More importantly, reduction of the thematic vowel is remarkably common in the third conjugation: e.g. *agite*, *agitō* 'drive' vs. Gk. *ἄγετε*, *ἀγέτω*.

Further, borrowings from Greek represent a massive group of examples of vowel reduction:[33] *ἀγχόνη* → Lat. **ángona* > *angina* 'angina'; *Ἀκράγας* → Lat. **Ágrag*(*-entum*) > *Agrigentum* [toponym]; *Ἀλαλία* → Lat. *Aleria* [toponym];[34] *καμάρα* → Lat. *cámara*[35] > *camera* 'vault'; *Κατάνα* (Dor.) → Lat. **Cátana* > *Catina* [toponym]; *Μασσαλία* → Lat. **Mássalia* > *Massilia* [toponym]; *μᾱχανά* (Dor.) → Lat. **mắchana* > *māchina* 'machine'; *πατάνη* → Lat. **pátana* > *patina* 'pan, dish'; *σκόπελος* → Lat. **scópelos* > *scopulus* 'projecting rock'; *Σικελία* → Lat. **Sícelia* > *Sicilia* [island name]; *τάλαντον* → Lat. **tálantom* > *talentum* [unit of weight]; *Τάρας*, *Τάραντος* (gen.) → Lat. **Tárantom* > *Tarentum* [toponym]; *τρυτάνη* → Lat. **trútana* > *trutina* 'balance'; *φάλαρα* → Lat. **phálarae* > *phalerae* 'metal plates'.

Whether borrowings underwent vowel reduction or not partly depends on the time of their entry into the Latin vocabulary. Leumann (1977: 81) contrasts ancient loanwords with vowel reduction (*camera*, *phalera*) to recent ones without it (*hilaris* ~ *hilarus* 'cheerful' ← *ἱλαρός*, *barbarus* 'foreign' ← *βάρβαρος*). But as Biville (1990: 10–16) claims, the situation is far more complicated than it may seem. The vowel

[32] Cf. Kent (1932: 104) for an explanation invoking analogy with words in *-idem*, such as *tantidem* and *indidem*. The retention of *-a-* in *itaque* is probably due to analogy with *ita*. Leumann (1977: 240) suggests that the accent difference between *ítaque* 'daher' vs. *itáque* 'und so' is an invention of the grammarians; cf. the treatment of this problem by Probert (2002: esp. 201–205). The suggested presence of *itáque* (with stress shifted rightward by *-que*) may have contributed to the retention of *-a-*, but there are difficulties with this view, as pointed out by Blumenfeld (2007).

[33] The following examples are selected from Sommer (1914: 85), Ernout and Meillet (1985), Leumann (1977: 81, 373, 457), Biville (1990: 9), Oniga (1990: 198), and Poccetti (1999: 80). As I mentioned elsewhere (Nishimura 2010a: 167 n. 1), Pultrová (2006: 31, 34, 36), in dismissing the idea of vowel reduction based on the initial-stress theory, unduly excludes from her discussion such borrowings, though their patterns of vocalic change exactly match those in other lexical categories. See also Vine (2012a: 574 n. 9).

[34] For the consonant dissimilation in Latin, see Leumann (1977: 231).

[35] As for comments on this form by ancient grammarians, see Biville (1990: 20–21).

alternation patterns resulting from vowel reduction became somewhat normative, restricting the appearance of low and mid vowels in non-initial syllables. Hence a certain number of words borrowed into Latin even from the Literary period onward copied such vocalic alternation synchronically. While Classical Latin adapted Greek *καστάνεια* and *κέρασος* as *castanea* 'chestnut (tree)' and *cerasus* 'cherry (tree)', variants like *castinea* and *ceresia* appeared at a later stage of Latin, and were then inherited by the Romance languages (see Biville 1990: 11; for *castanea* ~ *castinea*, see some more information in Adams 2007: 477). Unless *castinea* and *ceresia* already existed in the Pre-Literary period and then were forced to the background during Classical Latin under the influence of educated forms like *castanea* and *cerasus* (which, though less likely, is theoretically possible), the *i*-vocalism in the non-Classical forms may have arisen as a secondary synchronic phenomenon.[36] The examples provided by Biville (1990: 16), such as *monisterium* (vs. *monasterium*), *episcupus* (vs. *episcopus*), and *monichus* (vs. *monachus*), are no doubt recent creations in the Christian period, even if they exhibit the "apophonie"-type variation.

2.2. Vowel Deletion in Latin[37]

Vowel Deletion, particularly syncope, is not as widely operative in Latin as in Sabellic, but the number of its occurrences is not at all negligible. The precise conditions for syncope are known to be fairly complicated.[38] Part of the reason is that its date cannot be precisely determined, as Juret (1919: 96–97, 99) points out. It occurred a number of times throughout the history of Latin, not only in the Pre-Literary period but also during the Literary period, in contrast to vowel reduction, which was a relatively short-lived event in Latin (see Ballester 1990: 42). Therefore, it is most likely that different conditions were involved in this sound change in different periods, as Lindsay (1894a: 170–171) and Exon (1906: 119–121) have suggested.[39]

As for the Pre-Literary stage, people have traditionally considered syncope to be an effect of initial stress, which would have triggered the total loss of a vowel in the immediately following syllable. As Dietrich (1852: 544), Lindsay (1894a: 158), and von Planta (1892: 589–590) indicate, syncopated vowels often occupied the third syllable from the end of the word; if the Penultimate Law had operated then, such vowels may have been accented, and thus might be expected to have been preserved. Therefore, it seems desirable to assign these changes to a linguistic stage when the

[36] See also other possible cases provided by Biville (1990: 13): *cithara* 'lyre' [Var.+] vs. *citera*, *Tartarus* 'underworld' [Lucr.+] vs. *Tarterus*, *adamās* 'adamant' [Verg.+] vs. **adimans* (Fr. *aiment*).

[37] See Nishimura (2011a) for more details.

[38] On this point, see the pessimistic remarks by Sommer (1914: 133–134), Buck (1928: 57), Moorhouse (1940: 308), and Leumann (1977: 249). In this situation, Rix (1966) does not seek to provide a systematic description of the conditions for syncope, but instead tries to clarify its phonetic (phonological) mechanism, as discussed in detail in Nishimura (2010b: 218–219).

[39] This seems to be true, despite Anderson's statement (1965: 71) in opposition to Lindsay. Though Exon claims that all instances can be explained under a single law (1906: 143), the identification of two different types of syncope (for one of them, see Mester 1994) in terms of both chronology and conditioning has been presented in Nishimura (2011a).

location of the accent was determined by a rule different from the Penultimate Law, such as the one with initial stress, as is commonly thought: e.g. *ūndecim* '11' [Pl.+] < **ói̯no-dekem*; *quīndecim* '15' [Pl.+] < **kʷínkʷe-dekem*; *dexter* 'right' [Pl.+] < **déksiteros* (Gk. *δεξιτερός*).[40] In a later period, on the other hand, the Penultimate Law may also account for syncope: e.g. **kalēfákiō* 'make warm' > *calĕfáciō* [Pl.+] > *calfíciō* [Cic.];[41] *validē* [Pl.+] > *valdē* 'very' [Pl.+] vs. *validus* 'strong'.[42]

2.3. Vowel Reduction in Sabellic[43]

Vowel reduction is said to be poorly attested in Sabellic (see, e.g. Solmsen 1894: 153). But as Buck (1928: 55–57) describes, the position before or, in some cases, after a labial serves as a locus of this change, which results graphically in either *-u-* or *-i-* in some cases (it is somewhat likely that the vowel in the preceding or following syllable also played a certain role in this vocalic alternation): Osc. **últiumam** '*ultimam*, furthest' < **-tomo-* < **-tm̥mo-*;[44] Osc. *pertumum* '*perimere*, prevent' < **pert-emom*; Umb. **prehubia** '*praehibeat*, provide' (perhaps influenced by forms such as **prehubust*; cf. **prehabia**);[45] Osc. *praefucus* '*praefectus*, governor' (cf. *facus* '*factus*, be made'; see also de Simone 1980: 87); etc. The occurrence of this phonological change in non-initial syllables strongly supports the initial-stress theory.

2.4. Vowel Deletion in Sabellic[46]

While in Sabellic we do not observe vowel reduction on as large a scale as in Latin, vowel deletion, especially syncope, is remarkably common in non-initial syllables. Traditionally, this frequency has also been explained by positing a linguistic phase with initial stress (see Thurneysen 1908: 240–242 and Pisani 1964: 6–7). Buck (1928: 57) remarks that "for Oscan-Umbrian, with the limited amount of material before us, it is

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[40] Cf. Ernout and Meillet (1985: 171), who insist on a reconstruction **dexteros* without *-i-*; but the idea is rightly criticised by Ciardi-Dupré (1901: 209). If reconstructed as **dek̂stero-*, the consonant cluster would have ended up as *-st-*, as in *Sestius* [personal name] < **sextios* (cf. *sextus*), *illūstris* 'bright' < **-l(e)uks-tri-* (see also in Götze 1923: 123, Benediktsson 1960: 213 n. 61, and Leumann 1977: 203).

[41] On the details of this process, which involves iambic shortening and syncope that was perhaps triggered by the secondary stress on the initial syllable, see Leumann (1977: 109, 248). As regards the syncope of a secondarily shortened vowel, see Rix (1966: 156).

[42] Proclitic use of *validē* (> *valdē*) as an adverb, in contrast to the adjective *validus*, may have been responsible for the deletion.

[43] See Nishimura (2012) for more details.

[44] The reconstruction involves a prevocalic **-m̥-*; thus, **-tm̥(m)o-* would be a more accurate representation with a homorganic glide in parentheses. The outcome **-om-* is based on Vine (1993: 247–249).

[45] Meiser (1986: 268–271), adducing this and some other Umbrian forms, seems to consider a treatment peculiar to Umbrian, but the Oscan forms above, as well as others from different Sabellic dialects, lead us to consider the phonological development from a wider, perhaps Pan-Sabellic, standpoint; see more details in Nishimura (2012: 381–386).

[46] See Nishimura (2012) for more details.

almost useless to speculate upon the original conditions of the syncope". Despite these difficulties, Benediktsson (1960) was the first to quite successfully conduct an extensive study of syncope in non-initial syllables in Oscan and Umbrian and confirm the conventional idea, stating that "a stress accent on the initial syllable is the only probable explanation of the syncope" (1960: 283). Examples may include **deĥsitero-* (Gk. *δεξι-τερός*) > Osc. **destr**-, Umb. **testru**, etc. 'right'; **medes-to-* or **medos-to-* (cf. Lat. *modestus*) > Umb. *mersto*, etc. 'propitious (?)'; PIE **pt-n-h_2-s-eh_1-nt* > PItal. **p^{a}t-na-s-ē-nt* > Osc. **patensíns** '*aperirent*, open' (3.pl. subj.impf.); etc.[47]

3. Objections to the Initial-Stress Theory and Their Problems

Throughout the history of research on these matters, many objections or other options have been raised against the initial-stress theory, particularly by French-School scholars, who assumed that the placement of the accent was basically unchanged from an archaic stage to Literary Latin. Most of their points, however, seem to be groundless.

3.1. "Intensité initiale"

Havet (1889: 11) labels the initial-stress theory as "chimérique", though claiming a special intensity of initial syllables that may affect the following syllables (1889: 11–17).[48] Vendryes (1902: 41), supporting Havet's view, elaborates the concept of "intensité initiale", which coexisted with the pitch accent ("ton", "hauteur") inherited from PIE in his "période préhistorique" before his "période classique", set in the second century BCE (1902: 99, 316).[49] According to him, this coexistence ended in favour of

[47] Note that some of his phonological and morphological treatments are obsolete. For instance, see Benediktsson's scenario (1960: 208) for Osc. **patensíns**: PItal. **pátenesē-* > **pátnesē-* > **patn̥sē-* > **patensíns**; based on the reconstruction above, the two medial *e*'s cannot be explained.

[48] Juret (1919: 99 n. 1), however, reports that Havet later changed his view to something closer to that of Juret; see footnote 51. Meillet (1900) also already uses the term "intensité", which seems to imply stress accent, as the title of his article ("De l'accent d'intensité") indicates. But as is clear from other terms used in Meillet (1933: 56, 129–130, 241) without reference to stress, such as "le rôle particulier de l'initiale", "l'importance particulière" (of the initial), and "la valeur de l'initiale", as well as his description of the quality of the Latin accent (1933: 128–129), he seems to side with more traditional French-School views. The same idea is recapitulated in Meillet and Vendryes (1948: 115, 125) as "caractère spécial" and "valeur spécial", though Mignot (1975: 421) refers to these terms as more ambiguous than "intensité initiale". Kent (1931: 180 n. 4) suggests that the term "intensité initiale" inevitably implies the existence of stress accent. He further points out that vowels in initial syllables are not always exempt from sound changes if they are unaccented (Kent 1931: 184), listing and discussing examples from Romance, Germanic, Slavic languages, and Modern Greek. However, that there is a certain stability of the position is still somewhat true, as based on Flemming's claim (2005: 4, 29–30), making the whole argument more complicated.

[49] Regarding the location of pitch accent, Vendryes (1902: 99–100) provides no decisive remark, only raising the question: "était-il [= the pitch accent] déjà restreint à la pénultième et à l'antépénultième ou jouissait-il de la liberté qu'il a en sanskrit védique?". According to him, the origin

the pitch accent by the start of his "période classique".[50] These two different types of accentual elements are phonetically distinguishable (cf. Maniet 1957: 27), but his theory seems to involve too much speculation and without a decent description of how the two were *phonologically* operative in different positions of the word when they did not coincide. Leumann (1977: 247, 254) denies the possibility that a high-pitched position and a stress-accented position can coexist in different places within a word. This view is already addressed by the French scholar Mignot (1975: 422–424), who takes an anti-French-School stance, and is also followed by Oniga (1990: 204). As Sturtevant (1940: 178 n. 4) suggests, "intensité initiale" can hardly be methodologically differentiated from "initial stress" as conceived by the German School. It can therefore be said that Vendryes was, or may have been, somewhat influenced by the initial-stress theory.[51] In fact, Niedermann (1953: 13) was more deeply influenced by the German School; while endorsing the French-School stance for Literary Latin, he fully accepted the initial-stress stage for Pre-Literary Latin.

3.2. "Dynamique de mot"

Monteil (1979: 91) also rejects the initial-stress theory and proclaims "la dynamique de mot" ("dynamique phonatoire" in 1979: 99) to be the cause of vowel reduction and deletion. His notion is summarised as a set of phonological principles: 1) length provides vowels with stability; 2) openness of vowels is proportionate to length; 3) the word-length effect; 4) the nearer a vowel is to word-initial position, the longer it is; and 5) closed syllables are more stable than open syllables (Monteil 1979: 91–92). While most of these seem reasonable, item 4 is questionable, since the position of the accent is not considered at all. Monteil (1979: 91) maintains that the accent fell on either initial or medial syllables (perhaps bearing in mind the Penultimate Law). If medial syllables had been accented, vowels there would have been strengthened and prolonged phonetically, thus not being targeted by vowel reduction or deletion. Item 5 is not without its own problems as well, since the duration of vowels in closed syllables may be shorter than in open syllables. His discussion does not deal with this issue, undermining his entire argument.[52]

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of the initial intensity is to be sought in neighboring non-Indo-European languages such as Etruscan (Vendryes 1902: 52, 100). Juret (1919: 103–107), on the other hand, rejects Vendryes' "intensité initiale", insisting that Latin directly continued the PIE musical accent.

[50] Vendryes (1902: 48–51) reports that von Planta (1892: 589) gives an analogous picture in Sabellic, and underscores that von Planta's discussion is an unreliable compromise between the theory of initial accent and the one of penultimate accent. But since von Planta makes no reference to the co-existence of two different types of accent, and rather suggests that there would be a diachronic gap between them, Vendryes' criticism is off the mark. See §4.2.

[51] Juret, rejecting Vendryes' "intensité initiale" (1919: 99, 103), argues that initial syllables hold special stability or distinctness ("netteté"), both phonetically and psychologically (Vendryes 1919: 103, 107; cf. 1938: 76). The same terminology is used by Maniet (1957: 143). Mignot (1975: 422 n. 9) asserts that Juret's idea became "l'objet d'un certain ostracisme" among scholars (the same tone is found in Hartmann 1923: 240–242 and Lepschy 1962: 228–229). However, recent typological studies such as those by Flemming (2005: 4, 29–30) and Barnes (2006: 94) show that in some languages initial syllables are durationally stabilised, thus granting Juret's view a certain amnesty.

3.3. An Accentual Rule for Composite Formations

A morphological factor has also been incorporated by some other scholars to explain vowel reduction and deletion. Möller (1922: 170–178) deals with northern Germanic languages in which simplex verbs were provided with grave accent, while such an accent was altered to acute accent in prefixed verbs; vowels with such an acute accent underwent a sound change. Möller (1922: 179–185) applies the same process to the Latin "apophonie", ascribing vocalic changes in medial syllables to an acute accent distributed there. Möller's idea is followed by Bonfante (1930: 55–56).

The apparent similarity with Germanic is, in fact, already mentioned by Dietrich (1852: 545). His definition is not entirely phonological as occasionally purported, but refers to morphological information. According to him, the accent fell on the syllables of the stem or, in the case of composite (i.e. morphologically complex) words, the syllables of the first element (i.e. prefixes, etc.). Pedersen (1895–96: 67), rejecting the initial-stress theory (as in 1905: 338–339, 1906: 232–235), suggests that the PIE accentuation pattern was responsible for vowel reduction, which he implicitly assigns to the prefix (e.g. *inimīcus* < **én-amīkos*). Similarly, though not in the same way, Exon (1906: 129), alongside the Penultimate Law (with some additional rules of his own) in his analysis of syncope in Republican Latin, acknowledges another type of accentuation that operated in Prehistoric Latin: "the accent of all compounds lay on the first syllable". His examples include the following nominal compounds (Exon 1906: 138–39): *anculi* 'servants' (P. F. 18.18L) < **ámbicolo-* (cf. Gk. *ἀμπίφολος*), *nūncupō* 'declare' < **nṓmocapō*, *naufragus* 'shipwrecked' < **nā́vifragos* (but cf. Nishimura 2011a: 4 n. 7), and *officium* 'duty, obligations' < **ópifacium*. Such accent distribution is entirely incompatible with the normal Penultimate Law.

There is, however, a crucial problem in these scholars' discussions. Based on their theory, as Skutsch (1913: 188 n. 4), Juret (1919: 98–99), and Leumann (1977: 247) properly point out, we must acknowledge a typological distinction between vocalic changes in complex words and non-complex words, such as third declension nouns (*nōmen*, gen.sg. *nōminis* < **-men-*) and Greek loan words (*angina* 'angina' < Lat. **ángonă* ← Gk. *ἀγχόνη*). However, there is no difference between these two categories as regards their patterns of vocalic changes, which makes such a dichotomy unnecessary. Even Pedersen (1895–96) admits that for perfect forms like *pepercī* (pres. *parcō* 'spare') and *fefellī* (pres. *fallō* 'deceive'), a supposed accent on the initial syllables to explain vowel reduction in second syllables cannot be Indo-European. He insists that such evidence is not sufficient to claim initial stress in the pre-history of Latin, but when combined with other counterexamples, these examples are a final blow to his theory.

More recently, Nyman (1983) likewise argues for the same type of accentual rule for nominal compounds in Latin from a wider Indo-European standpoint,[53] though he misleadingly (even mistakenly) confounds all types of compounds, except

[52] Nor is Liénard (1977a: 610) convinced, though his disagreement is not expressed in verifiable terms.

[53] As already suggested by Pisani (1930: 148), appealing to Celtic and Germanic.

coordinating ones (*Dvandva* in Sanskrit terms), into a single semantic category as "determinative compounds" (encompassing the *Tatpuruṣa*, *Karmadhāraya*, *Dvigu*, and *Bahuvrīhi* types), and automatically distributing the accent on the first element (Nyman 1983: 35–36). While the *Bahuvrīhi* compound generally has the accent on its first member (though not always on the *initial* syllable) as in *sū́ryatejas-* 'possessing the brightness of the sun' and *yajñá-kāma-* 'having desire of sacrifice', *Tatpuruṣa* and *Karmadhāraya* compounds generally have accent on the second member, e.g. *nr̥-páti-* 'lord of man' and *agni-taptá-* 'heated by fire' (see Whitney 1889: 501–511 and Jamison 2004: 693–694). Note also his misuse of the term "determinative compound", which should strictly refer only to the *Tatpuruṣa* type. He even overzealously attempts to include verbal forms such as reduplicated perfect forms, collapsing composition and reduplication under one category to explain vowel reduction: e.g. *pepercī* < **pé#park-ai*, *fefellī* < **fé#fall-ai* (Nyman 1983: 42). Compare Vedic forms that have no accent on their reduplicated syllables: *ca-kā́r-a*, *ca-kr̥-máhe*, *ca-kr̥-úr*, *ca-kr-vā́ṃs*, *ca-kr-āṇá* (← √*kr̥-* 'make'; for exceptions in some modal forms, see Whitney 1889: 293).

3.4. Emphatic Initial Stress

Pulgram (1975: 100–109), appealing to prosodic features in French sentences, such as *c'est un événement ĭncroyȧble* and *j'ai dit prŏduịre, et non pas conduịre* (˟ is emphatic accent and ˈ is grammatical accent; the former is a modification from his notation system for the typographical reasons), hypothesises that an accentuation like **cŏnfȧcere* with emphatic accent on the initial syllable was also possible in Latin. He further elaborates that "its original task was merely to distinguish… the various compounds of *facere* whenever such emphasis was necessary or helpful" (Pulgram 1975: 104). Such an accent driven by semantics (or, perhaps more precisely, pragmatics) was, according to him, strong enough to cause vowel reduction in unstressed syllables. He also adduces **dĕxịteros* 'right' and **quĭnquėdecem* '15', invoking a semantic contrast with *sĭnịster* 'left' and "a general tendency to accent the first syllable of the numeral in counting", respectively. The theory has exactly the same problem as the preceding one that claims an all-encompassing rule for composite formations. The lack of sufficient mention of non-complex words with vowel reduction, such as *nōminis* and *angina*, undermines his entire argument. It is scarcely possible to claim such a pragmatic contrast for all nouns as a primary factor that underlies phonological changes. Misgivings are also raised by Liénard (1977b: 832) and Nyman (1983: 34).

3.5. Leftward Scansion with Exceptional Rules about Syllable Weight

For the Penultimate Law in Classical Latin, metrical scanning to distribute the accent starts from the right edge of the word, final syllables being extra-metrical. In some of the previous studies, this direction from right to left has been tacitly agreed upon as a fundamental factor in accentual distribution for Pre-Literary Latin

as well. As already mentioned in §2.1, Nyman (1983: 33) argues that many cases of vowel reduction took place in trisyllabic words with a light penult: e.g. **pér-fakit* > *pérficit*, **kón-tenet* > *cóntinet*, **ánamos* > *ánimus*. For such a claim, however, vowel reduction in heavy medial syllables is the crux: e.g. *aestimō* vs. *exīstimō* (< **éks-aistimō*), *Tarentum* (< **Tárantum* ← Gk. *Τάρας*, *Τάραντος*). Likewise, syncopated vowels often occupied the third syllable from the end of the word, which might be expected to have been accented and preserved if the Penultimate Law had operated then: e.g. *ūndecim* '11' < **ói̯no-decim*, *bálineum* 'bath' (← Gk. *βαλανεῖον*) > *balneum* (see Dietrich 1852: 544; Lindsay 1894a: 158 and von Planta 1892: 589–590).

For a possible solution, as already suggested by Dietrich (1852: 543), the distinction between short vowels in syllables long by position (.CVC.) and other short vowels (.CV.) might not have always been made. A similar presumption can be found in Prosdocimi (1986: 617), who claims that there was a linguistic period when syllables with long vowels (.CV:.) and closed or diphthongal syllables (.CVC. and. CVY.) were treated differently in terms of syllable weight. Ballester (1990), who considers the initial-stress theory to be without foundation, presents such an argument more explicitly. He describes the above cases, like *exīstimō* and *Tarentum*, as deviant from the Penultimate Law and tries to formulate exceptional rules for them. He hypothesises that in Pre-Literary Latin, though accent placement was determined by scanning syllables from the word end as in the standard Penultimate Law, it was not syllable weight but only vowel length that played a role in its determination (Ballester 1990: 36–37). In other words, even when the penult was a heavy syllable (except with a long vowel), the accent could shift further to the antepenult, which was likely to be the initial syllable of the word. Later on, according to Ballester, this special treatment vanished as the standard Penultimate Law became established. With this claim of an "earlier version" of the Penultimate Law, the vowel reduction in *inscendō*-type forms could be explained in the same way for "ŏ̆ ŏ ‹σ›"-type words such as *subigō* 'move below' (< **súb-agō*).

Ballester's claim could be considered useful to a certain extent in explaining vocalic reduction in closed or diphthongal medial syllables. Typologically, distinctive treatment in terms of syllable weight between long-vowel syllables (heavy) and closed/diphthongal syllables (light) is not surprising at all; see Gordon's studies (2004). Yet, it is not certain whether there existed such a distinction throughout the history of Latin. There seems to be no conclusive trace of it in what we have of the language. In the verse of Latin comedy, for instance, both long-vowel syllables and closed syllables may be scanned as short in some cases: Py. *quid ĭllúc quod díco?* Ar. *ĕhĕm, sci̯ĭ̯ŏ iam quíd vis díceré* (Pl.*Mil*.36); the *-ĭ-* in *ĭllúc* and the second *-ĕ-* in *ĕhĕm* before the initial consonant of the following *sci̯ŏ* are scanned as short in anapestic (⏑⏑–) and proceleusmatic (⏑⏑⏑⏑) feet, respectively; the *-ŏ-* in *sci̯ŏ* loses its original length in a proceleusmatic foot; both cases result from iambic shortening or its subtype. The so-called "*Iuppiter*-rule" would be another example, whereby *Iuppiter* with gemination was generated from *Iūpiter* by change of syllable *structure*. Despite the recentness of this alternation (see Leumann 1977: 183) and some restriction on the vowels which undergo this process (see Nussbaum 1976: 8 and Weiss 2010a; cf. Nishimura,

forthcoming, n. 37), such occasional interchangeability between a long vowel and a short vowel + a geminate consonant reveals the inherent nature of syllable weight in Latin, that is, equal treatment of. CV:. and. CVC./.CVY.

* * *

I have not exhaustively cited the immense literature on the topic. But in viewing commonly used literature, I have provided an overview of the theory that Pre-Literary Latin and Sabellic located *stress* accent on the *initial* syllable, and have examined supporting evidence to conclude that this theory is reasonable and indispensable. Given the fact that vowel reduction and deletion are well explained by means of this hypothesis, we cannot do without "initial stress" in dealing with the data cited above.

4. Miscellaneous Problems in Italic Accentuation

In §2 we grounded our discussion by establishing historically separate layers of accentual rules in Latin. Scholars have long noticed particularly the systematic difference in the initial-stress rule of Pre-Literary Latin and the Penultimate Law of Literary Latin. The question as to what diachronic process motivated the accent shift from initial syllables to penults or antepenults has thus been repeatedly raised and regarded by several scholars as the crux of the initial-stress theory.[54] In what follows, we will first consider this problem (§4.1). In contrast to the relatively clear history of Latin accentuation rules, it is uncertain whether Sabellic went through the same or a similar development. Discussion of this issue will be resumed later below (§4.2).

4.1. Secondary Accent and Shift in Accent Position in Latin

Among scholars who advocate the initial-stress rule, the concept of so-called "secondary accent" has commonly been held to explain the shift in accent position from Pre-Literary Latin to Literary Latin. This idea is seen as early as, e.g. Dietrich (1852: 554), Thurneysen (1883–85: 313), and Brugmann (1897: 973).[55] Secondary accent is thought of as a phonetic counterbalance to primary accent, for the purpose of facilitating pronunciation of the entire word. Its occurrence is generally conditioned by the number of syllables in a word. Historically speaking, primary and secondary accent are thought to have switched their status. Dietrich suggests that Greek influence triggered

[54] See Juret (1919: 102–104), Nyman (1983: 31), and Ballester (1990: 33). Von Planta (1892: 589) also acknowledges a large discrepancy between these two types of accent, suggesting "zwei so grosse Accentumwälzungen [= the initial stress and the Penultimate Law] aber kaum bald nach einander stattgefunden haben werden".

[55] See also Abbott (1907: 458). Though Pedersen (1905: 338) does not accept the initial-stress theory, he nevertheless posits a secondary accent that emerged under the PIE accentuation (Pedersen 1905: 339). According to him, it always fell on antepenults, and the Penultimate Law was established in a later period by the processes ˊ–× > ˘ˊ× and ˊ–× > –ˊ×. His view is, however, hard to justify.

the switch.[56] Lindsay (1891: 406, 1894a: 158–159, 1894b: 409), on the other hand, seeks motivation within Latin, positing historical scenarios such as **sápièntia* > *sàpiéntia* 'wisdom', **témpestàtibus* > *tèmpestátibus* 'a portion of time; weather', **pótestàtibus* > *pòtestátibus* 'power, control', **lánificium* > *lànifícium* 'spinning, weaving', and **bénefícium* > *bènefícium* 'service, kindness'. Kent (1932: 66) likewise assumes that the change was internally motivated. Ballester (1990: 38–39) also, based on his own accentual rules for Pre-Literary Latin (see §3.5), illustrates the process as **dḗperìre* > *dḕperíre* 'to perish'. Leumann (1977: 248) elaborates the mechanism, by assuming that secondary accent first occurred in heavy antepenults, and then replaced initial primary accent in terms of status: **sápièntia* > *sàpiéntia*.[57]

What is crucial to this theory is determining the location of the secondary accent. It may be worth citing Allen's discussion (1969: 200–202) based on foot structure. In Nishimura (2011a: 8–14), I already reviewed basic facts about the shape of the foot and its parsing process in Latin, elaborated by Mester (1994) as well as Hayes (1995) and Parsons (1999). By way of example, the accent distribution in *fácilius* 'more easily' in Pre-Classical Latin (see footnote 23; later, *facílius*) can be deduced from the following algorithm: (1) parsing based on a moraic trochee (⏑⏑ = LL or – = H) on *left-to-right* footing, thus (faci)li‹us› (‹ › = extrametrical, disregarded in parsing); (2) trochaic stress assignment ⏑́ or –́)[58] on the only complete foot, thus (fáci)li‹us›. Consideration of the *malefícium*-type accent further illustrates the profile of metrical framework in that period. This word is footed as (male)(fici)‹um› with two moraic trochees, and the *rightmost* foot is to be counted as the head of the prosodic word, thus (male)(fíci)‹um›. Thus, *fácilius* and *malefícium* can exist side by side under a single accentual rule. In a previous stage, the *leftmost* foot hosted the accent, thus *(mále)(fici)‹um›; this is taken as a function of the initial-stress rule.

This framework correctly predicts the difference in the location of stress between *adsímiliter* 'similarly' (later, *adsimíliter*) and *malefícium* 'misdeed' at the Pre-Classical stage. If we start from the initial-stress period to sketch a diachronic scenario for these forms and assume that non-main feet host at least the secondary accent, the following development would present itself: *(ád)(sìmi)li‹ter›, *(mále)(fìci)‹um› → (àd)(símì)li‹ter›, (màle)(fíci)‹um›; namely, the secondary accent which emerges in a foot different from the one that hosts primary accent later becomes primary. This scenario operates well up to this point. However, whereas *malefícium* already has the Classical accentuation and thus requires nothing further, we need an

[56] See also Poccetti (1999: 77–78). But the question arises as to why Latin did not come to have oxytones like Greek. We can hardly prove, or disprove, some sort of sociolinguistic factors.

[57] Deroy (1981: 234) argues that initial stress did not become obsolete but survived as a dialect feature which caused consonant gemination in some Italian forms, e.g. *pellegrino*, *tollerare*, *seppelire*, *rettorica*. But the possibility that initial secondary accent newly emerged under the Penultimate Law cannot be excluded.

[58] Following the premise that the "cadence" of stress on a light syllable is carried over into a following light syllable, Allen (1969: 197) posits the metrical foot ⏑́⏑ as "an indissoluble unit" (also in Allen 1973: 164–178; already in Kuryłowicz 1958: 382). He also posits equivalent status for a heavy syllable, which may carry both the peak and cadence of stress.

additional step to get from *adsímiliter* to its Classical form *adsimíliter*. There is no straightforward explanation by means of secondary accent. See the following process by Allen (1969: 201): *ădsímìliter* > *âdsimílìter* (″ = peak of primary accent; ´ = peak of secondary accent; ̀ = cadence; ̂ = peak + cadence). A similar pattern is seen in *făcìlius* > *facílìus*. In these scenarios, it is the cadence in the left-hand stages that came to host the primary accent in the right-hand ones, which is theoretically difficult to accept. Allen (1969: 202) is therefore forced to regard such examples as "special cases" (see also Allen 1973: 189–190), in effect admitting that no systematic account can be given. As regards the examples adduced above by Lindsay, Ballester, and Leumann, which are all favourable to the theory of secondary accent,[59] their selection seems designed to avoid the problem of *adsimiliter* and *facilius*.

There is yet another potential difficulty in the theory. Oniga (1990: 201) maintains that two accented syllables cannot be adjacent to one another. Though we require further research regarding Latin, this is now known as a constraint on stress clash, widely found in many languages.[60] The adverb **ádsìmiliter* (→ *àdsímiliter*) violates this constraint. The same is true of **rélàtus* (p.p. of *referō* 'bring back'), as reconstructed by Allen (1969: 200–201) and Liénard (1977a: 611). The fact that they are composite forms may partly account for their marked accent distribution (cf. Eng. *backwoodsman* [´˙˙–, ˙´˙–]), but we must confront the enormous amount of non-composite forms (*amātus* 'loved', *amāre* 'to love', etc.).[61]

What we can assume at most is indirectly suggested by Kuryłowicz (1958: 382–384) in his attempt to illustrate the historical process of stress movement based on the foot structure of Latin. Though the development ´˙× > ˘´× (e.g. *relātus*) which he posits, and his abrupt appeal to ´˘ = ´ (i.e. moraic trochee) to explain the shift are only vaguely defined,[62] we can see his intention to base movement solely on the metrical shape of the word. As considered in Nishimura (2011a: 12–14), an initial light

[59] In his study on the Saturnian, Parsons (1999: 132) provisionally supports "a re-analysis whereby speakers swapped the primary and secondary accents", citing forms across two dipodes, … **TEMPES**|**TÁTEBVS**, … *ministrā*|*tṓrēs*, … *expedīti*|*ṓnem*, where the head of a dipode (metrically strong position) coincides with the syllable that would bear primary stress under the Penultimate Law. On the other hand, Parsons notes that "[t]hese lines are the only concrete evidence I know of for this hypothesis".

[60] See brief descriptions on this matter in Myers (1991: 318) and Kager (1999: 165).

[61] Cf. Deroy's list of examples (1981: 233–234) to prove the theory of secondary stress; alongside *maledīxit*, *disciplīna*, *perīculōsus*, *officīna*, *cīvitātēs*, *gubernāculum*, and *mancipāre*, it contains *perīculum* (< **périklom*?), an analogous pattern to **rélàtus*.

Liénard (1977a: 615–616) focuses on the cadence such as *cónde sepúlcrō* (cf. *cóndere géntem*). According to him, *sepúlcrō* resulted from **sépùlcrō*, by means of the change of accent status. It seems that he suggests that hexameter induced such a change, but the point of departure, that is, the existence of *sépùlcrō*, is not entirely guaranteed.

[62] Cf. the misgivings in Oniga (1990: 202–203 n. 27) and Ballester (1990: 38–39). Nor is Mignot (1980: 305) convinced by Kuryłowicz's theory, but his attempt to refute it by using *voluptās* is not successful. Based on Kuryłowicz's framework, the original "syllabification" (something close to metrical parsing) and accentuation **vó-lup-tās* should have changed through *vólup-tās* to *volúp-tās*. Mignot argues that *vólup-* is syllabically as well-formed as *sénex* and must have been stable as "un bloc accentué" without triggering accent reassignment. But he entirely ignores extrametricality in *sénex*, which then cannot be compared to *vólup-* in word-internal position.

syllable cannot be parsed if moraic trochees are strictly assigned. But the constraint that every prosodic word must begin with a foot (Align-Wd-Left), if ranked more highly, can produce a stress distribution like ˊ-× (thus, *(ré)(lā)‹tos›). The shift to ˘ˊ× may have been caused by outranking of the metrical constraint on foot-binarity that banned a degenerate foot like a single ˘ from being parsed.[63]

The historical development *adsímiliter/fácilius* → *adsimíliter/facílius*, on the other hand, can be explained by conjecturing a change in direction of parsing, that is, from *left-to-right* to *right-to-left*, whereby (ad)si(míli)ter and fa(cíli)‹us› are regularly realised (that is, as results of the Penultimate Law).

The metrical framework thus seems to better account for the diachronic shift of the accent location. Note, on the other hand, that I do not deny the possible synchronic existence of secondary accent. However, it is not readily recast for purposes of diachronic considerations. We should bear in mind that secondary accent is often post-phonological and is itself not easy to analyse.

4.2. An Accentual Rule in Late Sabellic

The problem as to whether or not Sabellic acquired an accentual system like Literary Latin has often been discussed by scholars. In the earlier literature, there is less agreement on the matter. For example, Corssen (1870: 913), von Planta (1892: 592), Hirt (1895: 41), Muller (1916/17), and Kuryłowicz (1958: 381), assume a parallel development between Latin and Sabellic, while Conway (1887: 18) maintains that Oscan and Umbrian retained initial stress throughout their history and Thurneysen (1908: 241) also claims the same at least for Oscan. Brugmann (1897: 976) cautiously notes that it is hard to decide whether Sabellic came to have a different accentual rule similar to the Latin Penultimate Law; in his opinion, though, the evidence presented by von Planta is not convincing (von Planta's view is concisely summarised and also refuted by Benediktsson 1960: 283–284; see also Solmsen 1894: 151–158). Note also Buck's neutral and pessimistic statement (1928: 101).

Disagreement among scholars continued well into the middle of the last century. Schmid (1954: 43, 46) argues for the same innovation in Sabellic as in Latin, though he presents an implausible accentual rule which ignores the weight of penults and invariably lays accent on antepenults. On the other hand, Benediktsson's work (1960) on Sabellic syncope seems to have played a decisive role in enforcing the thesis that Sabellic was conservative about accent location (1960: 230 n. 77). Still, Bottiglioni (1954: 23) takes a neutral stance, noting that whether Sabellic

[63] Lepschy (1962: 221–226) tries to strengthen Kuryłowicz's framework by adducing experimental phonetic studies, in which tape-recorded words, for example, *sŏrrăgĭs* and *ăttĭgăs* with marked intensive accent in the initial position, when reproduced in reverse, sound respectively like *sĭgărrŏs* and *săgĭttă*. From this data he arrives at the conclusion that syllable weight contributes to the perception of accent. His idea, however, does not help in understanding the development ˊ-× > ˘ˊ×, with accent shifted to the heavy syllable, since Lepschy provides no account of how words with a configuration like ˊ-×, with accent on the light syllable, could exist as the starting point in the development of words such as *sĭgărrŏs* and *săgittă*.

developed like Latin in terms of accent location and quality remains unclear due to the scant amount of data.[64]

Meiser (1986: 33), based on the observation that "Verdumpfung" in the Umbrian ethnonym **tesenakes** ~ *tesenocir* ~ *tesonocir* is seen in non-initial syllables, argues that initial stress was retained in a much later stage of Umbrian. The same type of sound development can be observed in the contrast **prestate** ~ *prestote* [theonym].[65] Since this form is a compound, analogy between the simplex and its compound (i.e. "recomposition"), which is more common in Sabellic than Latin (e.g. Osc. **aflukad** ~ **aflakus** '?'; see Götze 1923: 130 and Haug 2004: 235), must have served to preserve the original vocalism. But in contrast to some other compositions that were still related to their constituents (e.g. Umb. *procanurent*, semantically associable with 'sing'), **prestate** ~ *prestote* may have lost such a connection, being used as a divine name (i.e. with the literal meaning 'stand' of *sta-t-*, or p.p. *sta-to-*, bleached out). The failure of recomposition may have provided leverage for representing a vowel that is reduced, but retained, in an unstressed medial syllable. The phonetic entity in this position was most likely a schwa-like sound, and its height, remarkably reduced from [a] (cf. Nishimura 2010b: 239–247 for Latin), did not allow the sound to be represented by ‹a›, but ‹o›, which is similar to [ə] in height. The persistent use not of ‹e› (cf. forms in *-eto-* such as *tasetur* ≈ Lat. *tacitus*) but ‹o› for *prestot-* (26 times in Iguvine Tables) is most likely due to the clear qualitative difference, as perceived by the inscriber, between stressed /e/ (ideal for ‹e›) in the initial syllable and the following [ə]. Meiser's description (1986: 33, 268–271) of "Verdumpfung" of *a* ‹a› to *å* ‹o› in medial syllables has thus been restated both phonetically and orthographically.

For the toponymic adjectives **tesenakes** ~ *tesenocir* ~ *tesonocir*, a certain degree of conservatism is always conceivable as with proper nouns. For this reason (and others, if any), these forms presumably retain unsyncopated [ə]'s in medial syllables that resulted from vowel reduction.[66] The mechanism of reduction in the third syllable, where [ə] is no longer represented by ‹a›, is much the same as we have

[64] Durante (1958: 83–84) suggests that Paelignian realised a regression of accent based on forms such as *hanustu* '*honesta* (?)', *pperci* '?' (cf. Vine 1993: 333), and *ptruna* '*Petronia*', respectively. But possible syllabic notation (‹p› used as /pe/) for the last two examples muddies the waters (cf. Vine 1993: 323–344). Cf. also Mercado (2012: 318–327) for a metrical analysis for the Paelignian text where *hanustu* appears.

[65] Several forms have long been known to exhibit this change, but they need to be sorted out chronologically. While **prehabia** vs. **prehubia** '*praebeat*, provide' and **kumaltu** vs. **kumultu**/*comoltu* 'grind' already show graphic variation of vowels within the old native alphabets, the contrast in **prestate** vs. *prestote* and **tesenakes** vs. *tesenocir*, *tesonocir* is distributed in the different – old and new – notations. Therefore, *pace* Meiser (1986: 268–271), it seems that the sound change in the latter was relatively late and should be separated from that in **prehabia** vs. **prehubia** and **kumaltu** vs. **kumultu** in my theory; the vocalic development in these forms can be attributed to early reduction in a labial context commonly found in various Sabellic dialects (see §2.3).

[66] The assumption that only unstressed vowels adjacent to stressed syllables are subject to change is not always true, as seen from typological evidence; cf. vowel reduction in Russian (e.g. /sadovód/ as [sədavót] 'gardener') and Etruscan (e.g. *mulvanice* ~ *mulvenece* ~ *mulvunuke* 'gave as a present') (see Nishimura 2010a: 170–171, 2012: 390 and n. 24). It is important to note that unstressed vowels can be the target of change regardless of their position relative to stress, although how they are reduced differs according to position.

seen in **prestate** ~ *prestote*. Note that the second syllable also shows a graphic fluctuation, ‹e› ~ ‹o›. The choice of ‹o› for the reduced vowel in this position as well as in the third syllalble, though Meiser (1986: 33) posits "Verdumpfung" into *å* ‹o› even for non-low front vowels like *-e-*,[67] can be attributed to exactly the same reason as argued in **prestate** ~ *prestote*, that is, a qualitative difference between stressed /e/ in the initial syllable and the following [ə]'s.

As is clear from the above description, Meiser's "Verdumpfung" occurred in non-initial syllables. This means that the vocalism of the initial syllable was stable and thus points to the existence of accent on that syllable. Such an accent distribution seems to coincide with the Italic initial-stress rule. One may thus want to claim that this old accentual rule was retained throughout the history of Umbrian, or even Sabellic in general, unlike in Latin.

Note, however, that the forms **tesenakes** ~ *tesenocir* ~ *tesonocir* are quadrisyllabic. This feature is reminiscent of the *fácilius*-type accentuation in Pre-Classical Latin (see §4.1), if the vowel in the initial syllable of these forms is short, that is, something like (**tése**)**na**‹**kes**›. Since *fácilius* coexists with *malefícium* with accent in a non-initial syllable in a single accentual system (an earlier version of the Penultimate Law), assignment of stress on the initial syllable of **tesenakes** ~ *tesenocir* ~ *tesonocir* does not entirely guarantee the retention of the initial-stress rule in the original state.

On the other hand, the most informative and relatively reliable piece of evidence for our problem would be the orthographic device for representing long vowels. While conjectures about accent location based on sound changes such as syncope or anaptyxis must be more or less indirect, the evidence from notation possesses a more direct power, given the general agreement that, because they are accented, vowels written as long are phonetically long (phonologically in initial syllables?). The idea is entertained by Thurneysen (1908: 241–242), particularly in regard to Oscan, where the long-vowel notation, that is, the gemination of vowels, appears mostly in initial syllables: e.g. **fiísnú** '*fanum*, temple' < Proto-Sab. **fēs-nā-* < PIE **dʰeh₁s-* (cf. Lat. *fānum* < Pre-Lat. **fasno-* < PIE **dʰh₁s-*); **biítam** '*vitam*, life' < PIE **gʷih₃-teh₂-* (= Lat. *vīta*); **ḍuunated** '*donavit*, gave' < Pre-Osc. **dōn-ā-* (cf. **dúnúm**, Lat. *dōnum*, *dōnāre*); **trííbarak**[**avúm**], **tríbarakavúm** '*aedificare*, build' < Pre-Osc. **trēb-ark-ā-* (cf. **trííbúm** 'house'). The last two examples are particularly important for detecting the location of the accent, since they historically contain two long vowels (**-ē-* and **-ā-*), both in the initial syllable and elsewhere; the former position shows the orthographic length. From this observation, it can be said that accent consistently fell on initial syllables, causing vowels there to become phonetically long. Potential counterexamples, such as *αfαaματτεδ* 'order' (< **ā-fāmā-*) and **trístaamentud** '*testamento*' (< **tri-stā-mento-*; cf. **trstus** '*testes*' < **tristi-*), are not so compelling as to weaken the argument, since in form they are either derivative or inflected from a composite word; hence, the gemination of the vowel in the second member can be attributed to their free-standing

[67] Meiser's other example **atropusatu** 'perform a *tripudium* (dance)' (< **-tri-*) should be referred to the labial consonant **p**, which is responsible for the rounding of the preceding **i* (see §2.3).

forms (cf. **faamat**, **faamated**, Umb. *stahmei*, *stahmito*). Modern Italian reflexes of Latin toponyms in Oscan-speaking areas seem to agree with this line of reasoning, such as *Ótranto*, *Bríndisi*, *Pésaro* (cf. Lat. *Hydrūntum* [← Gk. Ὑδροῦντ-], *Brundisium*, *Pisaurum*), as cited by Leumann (1977: 239). He explains them as caused by 'epichorische Anfangsbetonung', which I assume is referring to that of Oscan.

An orthographic device for the treatment of long vowels is also well-established in Umbrian as either ‹Vh›, ‹VhV›, or ‹VV›. This sequence is frequently found in initial syllables of either simplex words or the second member of composite forms:[68] e.g. **sehmeniar** (**furu** ~) '*(forum) seminarium*' < Proto-Ital. **sēmen-i̯i̯ā-*; **sahta** '*sanctam*', *sahatam*, *Sahata* < **sānχto-* < **sank-to-* (cf. Lat. *sānctus*; see Meiser 1986: 55, 92, 106, 139); *meersta* '*iustam*' < **mede/os-to-*; **a|anfehtaf** 'unfashioned (?)' (see Weiss 2010b: 161) < **n̥-dʰeh₁-to-*. This seems parallel to the Oscan material and thus strengthens the argument that Sabellic generally preserved the old initial accent. Note that Umbrian possesses several examples in which ‹Vh› or ‹VhV› is not employed in initial syllables of simplex words or the second members of composite forms, but in medial syllables that are part of suffixes: e.g. *eheturstahamu* '*exterminato*' < **-tudes-ā-*; **persnihmu** '*precator*' < **perk-sk-i̯n-i̯-* < **perk̂-sk̂-i̯i̯on-i̯e/o-*;[69] *anouihimu* '*induitor*' < **-ou̯-i̯-* < **-ou̯-i̯e/o-* (or < **-ou̯-i̯-* < Proto-Sab. **-ou̯-ē-* < *PIE **-ou̯-ei̯e/o-*). But the appearance of ‹Vh› / ‹VhV› is limited to the position before the imperative marker *-mōd*,[70] which might have served as an enclitic and shifted the accent onto the penult (cf. *seipodruhpei* '*seorsum utroque*' < **sē-poterōd-pid* < **-kʷo-terōd-*); as a result, these examples cannot be regarded as sufficient evidence for positing as accent shift. In light of this observation, Meiser's data **tesenakes** ~ *tesenocir* ~ *tesonocir* may be counted as evidence for initial-stress assignment.

The fact that vowel reduction and deletion in Italic are overwhelmingly common in non-initial syllables enables us to securely posit the initial-stress *system*. On the other hand, we do not have much evidence to visualise a new different *system*. The long-vowel notations in Oscan and Umbrian (with some reservations for the latter) seem to point to the preservation of the older stage.

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[68] In this regard, the spelling *frateer* '*fratres*, brothers' (< **frāter(e)s*) with geminatio vocalium in the last syllable is surprising. Cf. **frater** and *frater*.

[69] The suffix reconstructed as **-(t)i̯i̯on-* in Proto-Italic (see Weiss 1993: 3 n. 3, 31, Nussbaum 2005, 2006), producing abstract nouns (cf. nom.sg. in *-f#* < *-n-s#*: e.g. Osc. **tríbarakkiuf** '*aedificium*, building', **fruktatiuf** '*fructus*, profit'), clearly altered its shape in oblique cases (e.g. Osc. *tanginud* '*sententiā*, opinion', Osc. *medicatinom* '*iudicium*, legal proceedings', Osc. **leginum**, **leginei** '?', Umb. **natine** '*gente*, patrician family', Umb. *duti* 'a second time', Umb. *tertim*, etc. 'third'). It is **-(t)īn-* that has traditionally been reconstructed for oblique stem (by, e.g. Buck 1928: 182, Livingston 2004: 6, and Nussbaum 2005, 2006), which could eventually end up as **-(t)i̯n-*. Yet, if starting instead from Heidermanns' reconstruction of the suffix **-(t)i̯on-* (1996: 139–144), which is acceptable as a Proto-Sabellic (or at least Pan-Sabellic) form due to the gemitation in Oscan of the consonant before the glide (e.g. **úíttiuf** 'use'), one may advance syncope followed by vocalisation of the glide (known as *samprasāraṇa*) that enables the suffix to turn to **-(t)i̯n-* directly (see Buck 1928: 35), as Heidermanns (1996: 142) tentatively suggests. This issue needs further study.

[70] Seidl (1994: 353) puts as if the long-vowel notation is more widely found before nasals, but this does not reflect the reality.

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