THE FUTURE PERFECT IN OSCAN AND UMBRIAN, AND THE Ō-PERFECT IN SOUTH PICENE

By Nicholas Zair
University of Cambridge

Abstract

Oscan and Umbrian have a future perfect suffix *-us-/–ur–*. Although various sources for this suffix have been suggested, none satisfactorily explain its origin. This article evaluates these previous attempts and makes a new proposal: the Oscan and Umbrian future perfect can be identified as a perfect suffix *-ō- plus the future suffix *-s-. The perfect suffix *-ō-, although not directly attested in Oscan and Umbrian, is found in the related language South Picene. The origin of the *-ō- suffix is traced back to inherited perfects of the type 3sg. *Ce-CoH-e, e.g. *de-doh₃-e 'gave' > *dedō → Umbrian **teřust** '(s)he will have given', with subsequent reanalysis of the root vowel *-ō- as a suffix. A parallel for this development is found in Gaulish.

1. Introduction[1]

The Sabellic languages were a group of languages spoken in ancient Italy in the first millennium BC. Together with Latin and its sister language Faliscan, they make up the Italic family, a sub-group of Indo-European.[2] Within the family, the best-attested languages are Umbrian in North Italy, and Oscan in South Italy. The majority of inscriptions in these languages are found between the fourth and first centuries BC (although a small number are datable earlier). Also attested in the second half of the millennium are a number of languages whose attestation is much less secure, including Paelignian, Marrucinian, Volscian and Vestinian. It seems likely that Oscan, Umbrian and these languages developed out of a prehistoric dialect continuum. From here on, the phrase 'Oscan and Umbrian' will be taken to include these less well-attested languages (but without implying any model of subgrouping).[3]

---

[1] I am grateful to James Clackson, Katherine McDonald, John Penney and Andreas Willi, who read an earlier version of this paper, and to the anonymous reviewers. Their comments, observations and scepticism saved me from some ghastly mistakes, and forced me to improve my argument considerably. All remaining errors and implausibilities are of course my own responsibility. The following abbreviations are used in this article. Languages: Gk. = Greek, Lat. = Latin, Osc. = Oscan, U. = Umbrian. Linguistic categories: ABL = ablative, ACC = accusative, ADJ = adjective, DAT = dative, FUT = future, GEN = genitive, IMP = imperative, INF = infinitive, LOC = locative, M = masculine, NEG = negative, NEUT = neuter, NOM = nominative, PASS = passive, PERF = perfect, PL = plural, PRES = present, PTC = participle, REL = relative, SG = singular, SUBJ = subjunctive.

[2] For introductions to the Italic group and the Sabellic languages, with further references, see Fortson (2010: 274–308), Clackson & Horrocks (2007: 37–76) and Wallace (2007).

[3] For the relationships between the Sabellic languages see Meiser (1987), Adiego Lajara (1992: 9–24), Rix (2003; 2009), Crawford et al. (2011: 16, 447–9), Dupraz (2012: 60 fn. 120) and Clackson (forthcoming). It will be seen below that I posit a morphological innovation in Oscan and Umbrian which is not shared by South Picene. This does not necessarily imply an Osco-Umbrian sub-family. It is clear that these languages share both morphological and phonological traits. These may be due to coincidental identical generalisation of variants available in Proto-Sabellic and/or contact rather than shared inheritance.

Table 1. Attested persons of the future perfect

	Oscan	Umbrian	Volscian	Proto-Sabellic
2SG	**aflakus** (Capua 34/Cp 37)	**kuvurtus** (IT Ib 11)		*-us-s
3SG	cebnust (Bantia 1/Lu 1)	**teřust** (IT Ib 34)	atahus (Velitrae 1/VM 2)	*-us-t
		apelust (IT Va 17)		
3PL	**tríbarakattuset** (Abella 1/Cm 1)	**fakurent** (IT Ib 34)		*-us-ent
	angetuzet (Bantia 1/Lu 1)	facurent (IT VIIa 43)		

South Picene, attested in inscriptions from the North and East of Italy between the sixth and fourth centuries BC, is another member of the family. A small number of inscriptions are found in the sixth and fifth centuries in the area later occupied by Oscan. These are often taken to represent 'Pre-Samnite', a language spoken across this area prior to the arrival of the Oscan speakers. But it is not clear that these inscriptions in fact represent a single language, or what its precise relationship to the other languages may be.

In this paper I attempt to explain the origin of the future perfect suffix attested in Oscan, Umbrian and Volscian. These languages form the future perfect with a suffix which appears in Oscan as -us-/-**us**- and in Umbrian as -us-/-**us**-, -ur-/-**ur**- (in Umbrian intervocalic *-s- became -r-).[4] As a shorthand I refer to this suffix as -us-, without implications for its etymological or phonemic status. This suffix was added to the Sabellic perfect stem, which, except in verbs of secondary (de-nominal or -adjectival) origin, is historically descended from the Proto-Indo-European (PIE) perfect or aorist stem, and was then followed by the primary verbal endings (PIE 1SG *-mi, 3SG *-ti, 3PL *-nti > Proto-Italic *-m, *-t, *-nt).[5] The following persons are attested (Table 1).[6]

The origin of this suffix has been debated periodically over the years, without any firm conclusion being reached. I propose a new origin, which connects it with the equally mysterious ō-perfect of South Picene (and perhaps 'Pre-Samnite'). We begin by surveying the origins proposed so far for the future perfect.[7] These fall into three main types: univerbation of an original periphrastic construction (section 2.1); comparison with the Latin u-perfect (section 2.2); analogy from the verb 'to be' (section 2.3).[8]

---

[4] Forms written in the alphabets specifically developed for writing Sabellic languages from Etruscan and Greek exemplars are conventionally printed in bold. Those in italics are written in the Latin alphabet. Inscriptions in the Greek alphabet are also given in roman italics, but I will note that the inscriptions were written in the Greek alphabet.

[5] The PIE aorist expressed perfective aspect and, at least in indicative forms, past tense. It used the secondary verbal endings 1SG *-m, 3SG *-t (> Proto-Italic *-d), 3PL *-(e)nt (> Proto-Italic *-(e)nd). The perfect had a resultative/stative meaning, and was characterised by reduplication and its own set of endings (1SG *-h_2e, 3 SG *-e, 3PL *-ēr/-r̥s). In both Latin and the Sabellic languages, these categories fell together semantically as the so-called 'perfect', with each verb generalising one or other of the original aorist and perfect stems. In (Classical) Latin, the endings of the 'perfect' broadly reflect the original perfect endings, with considerable alterations, although the aorist endings evidently carried on into Old Latin. In Oscan and Umbrian at least, the aorist endings were generalised. In addition to the ('athematic') endings given above for the aorist, PIE also had 'thematic' aorists, in which the endings were added to a vowel *-e/o- (1SG *-o-m, 3SG *-e-t, 3PL *-o-nt). In Oscan and Umbrian we find 3SG *-et > *-ed alongside 3PL *-ent > *-end, either due to confusion between the thematic and athematic endings, or by generalising the *-e- of the thematic 3SG into the 3PL. I will make it clear in the text when I am referring to the inherited Indo-European perfect (distinct from the aorist) and when the Latin or Sabellic perfect (from original aorist and perfect).

[6] Sabellic inscriptions are given first the numeration of Crawford et al. (2011), followed by that of Rix (2002), except for Umbrian forms from the Iguvine Tables (IT), which are not included in Crawford's edition, and inscriptions which are in Crawford's edition and not in Rix's.

[7] Summarised by Beeler (1980) and Piwowarczyk (2011: 114–15).

[8] These types of explanation are in fact not to be so neatly distinguished, since, for example, Schulze (1887) and Rix (1992) derive both the Latin u-perfect and the Sabellic future perfect from univerbations involving the perfect participle. For scepticism about Rix's explanation of the u-perfect in Latin see Willi (2009 [2010]: 233–4).

2. Earlier theories of the origin of the future perfect suffix

2.1. Univerbation of a periphrastic construction

The idea that the Sabellic future perfect reflects the univerbation of a periphrastic phrase goes back to an idea of Bronisch (Brugmann 1890: 223–5; Bronisch 1892: 192–3), who derived it from an original perfect participle plus subjunctive of the verb 'to be'.[9] Brugmann (1886–93: 2.1241–2; 1892; followed by Buck 1904: 173) considers the perfect participle in Italic to have generalised the zero-grade suffix *-us, while Bronisch prefers the lengthened grade *-u̯ōs. Ultimately, both of these would give a sequence *-us, since *-u̯ōs > *-u̯ūs would lose the *-u̯- after most consonants, and long *-ū- was shortened in non-initial syllables in Oscan and Umbrian. Consequently, these scholars trace the future perfect back to a sequence of the sort *-us set, whence, by syncope *-us(s)t. Such an origin would not explain all the attested forms, however, as they themselves observe: in the 3PL, *-us-sent > *-ussent would not be rhotacised in Umbrian (cf. osato /ossatu/ < *opsatu < *opesāi̯etōd, frosetom < *frau̯ssitom ← *frau̯d-to-; see Meiser 1986: 239–56 on rhotacism in Umbrian). And in the Oscan legal inscription on the Tabula Bantina (Bantia 1/Lu 1), *-ss- would be written with <s> (cf. osins < *opsīns, nesimum < *nessimōm), rather than <z> as in angetuzet 'they will have pronounced' (cf. censazet 'they will carry out a census' < *kensā-s-ent). Consequently, the 3PL future perfect in *-usent has to be explained by analogy with the future (on the model 3SG -ast : 3PL -asent :: -ust : x, x = -usent). In addition to this complication, there is a major disadvantage to this picture: the original PIE subjunctive stem was *h₁es-e/o- > *ese/o-, as in the Vedic subjunctive ásat(i) and the Latin future erō. We would expect, therefore, that the Sabellic equivalent would also be *ese/o- rather than *se/o- as assumed by these scholars. An even greater problem is that in Sabellic, the future of the verb 'to be' comes from a different root *bʰuH- which gives, for example, Osc. fust '(s)he will be' (on which see below), rather than from the root *h₁es- which gives Lat. erō, and which is the basis for the 3SG *set, 3PL *sent required in these constructions. Indeed, unlike in Latin, where future stems can in general be traced back to original present subjunctives, Sabellic uses a suffix *-s- to form the future, so it is unlikely that *se/o- would have future semantics in Sabellic anyway.[10]

A slightly different conception of the perfect participle theory was proposed by Schulze (1887: esp. 272–4). Exactly what developments he envisages for the Sabellic forms are not entirely clear to me; he seems to operate with a NEUT.NOM.SG. participle in *-u̯es plus the subjunctive of the verb 'to be' (this time with the inherited full grade root as in Latin), so that, e.g., 3SG *-u̯es eset would become *-u̯eset by haplology, followed by syncope to give *-ust. However, there is no good evidence for an e-grade in the suffix of the perfect participle (Sihler 1995: 619–21), apart from the same problem with syncope as the other versions of this theory. Altogether none of the versions of this theory are tenable any longer.

---

[9] The Proto-Indo-European perfect participle had a stem *-u̯ōs, *-u̯os-, *-us- in different parts of the paradigm, cf. Gk. M.NOM.SG εἰδώς 'knowing', NEUT.NOM.SG εἰδός, Skt. M/NEUT.GEN.SG vidúṣas 'knowing' (Sihler 1995: 618–20). As an anonymous reviewer reminds me, there is no (or very little) evidence for the continuation of the perfect participle into Proto-Italic apart from that of the theories discussed here (for possible Latin examples see Leumann 1977: 610; for the non-existence of examples in the Sabellic languages see Wallace 1985). However, it cannot be altogether ruled out that the perfect participle was grammaticalised in originally periphrastic constructions and subsequently lost as an independent formation.

[10] These scholars also operate with a conception of syncope which is not congruent with the current picture: final syncope only took place before *-s in Sabellic (Benediktsson 1960: esp. 280–1), so the 3SG should have remained *-us-set rather than becoming *-us(s)t.

Rix's (1992: 239–40) more recent discussion posits a perfect participle plus the future stem *fus- of the verb 'to be'[11] as the source of the future perfect, so that a form like *g^weg^wen-$u̯os$ b^husti > *bebenus fust gives *bebenust by means of 'Univerbierung und Pseudo-Haplologie' > Osc. bebnust 'he will have come'.[12] This approach avoids the problems raised above that result from using the original subjunctive as the verb in the paraphrase, but at the price of accepting a 'Pseudo-Haplologie' instead. Since we have no other example of the sequence *-usfust it cannot be entirely ruled out that the result would be *-ust, but it is reasonable to be sceptical about theories that require this sort of sound change, unless there is no better explanation available. Rix's view also shares the problem of the other versions of the periphrastic theory, except Bronisch's, that they start from the NEUT.NOM.SG of the perfect participle, which seems the least likely of the genders to be generalised in an active verb. In the case of Rix, we could replace *-u̯os > *-us by masculine *-u̯ōs > *-u̯ūs without too much difficulty (since *-u̯- would probably only be retained after stems ending in velars). But an ending *-ūsfust would probably be even less likely to take part in the haplology envisaged by Rix than *-usfust, since the vowels in consecutive syllables would then be of different lengths.[13]

Of the periphrastic theories, only that of Rix can still be accepted under our modern understanding of the prehistory of the Sabellic languages, but even this relies on the assumption of an otherwise unestablished, and not particularly likely, sound change.

2.2 Comparison with the Latin u-perfect

Von Planta (1892–97: 2.371–6) mentioned as a possibility the idea that the -u- of the Sabellic future perfect was to be viewed as the same morpheme as the Latin u-perfect, which both language (-families) had inherited as a past-tense marker from Proto-Italic. This position has been argued by St John (1973),[14] and in a much more thorough fashion by Prosdocimi & Marinetti (1993a: 225–37; 1993b: 299–307).[15] Both sets of authors suggest that since the Sabellic future morpheme was *-s-, the future perfect suffix *-us- is attractively analysed as the future suffix *-s- added to a perfect suffix *-u-, which can be the same as that found in Latin. In addition, Prosdocimi and Marinetti further connect the South Picene **ú**-perfect found in forms like 3SG **opsút** Aufinum 1/AQ 2 '(s)he made', As we shall see, I also propose that the future perfect was based on a Sabellic perfect formation, which was subsequently lost, and that this perfect is preserved in South Picene. However, I do not believe that the Oscan and Umbrian future perfect or the South Picene **ú**-perfect can be equated with the Latin u-perfect, for two reasons. In the first place, the distribution of the u-perfect in Latin and the us-future perfect in Sabellic are almost diametrically opposed. The Latin u-perfect was originally restricted to verb stems ending in vowels, i.e., to primary roots of the shape *CeH- > *CV̄- and Ce(I/R)CH- > *Ce(I/R)Ca-, and to secondary verbs, mostly in the ā- and ī-stems (Meiser 2003: 219–37, summarised in Meiser 1998: 204–6). Conversely, in Oscan and Umbrian it is precisely the majority class of verbs which have a perfect stem ending in a vowel, i.e., the (largely secondary) ā-stems, which have a different perfect marker before future perfect -us- (-tt- in Oscan and possibly *-nki̯- in Umbrian), while -us- is added directly to all

---

[11] On the future meaning of fus- see below.

[12] Which is, however, a suggested emendation by Rix of written cebnust (Bantia 1/Lu 1. l.20).

[13] Shortening of vowels in non-initial syllables probably occurred only in the individual histories of the Sabellic languages.

[14] Whose analysis of the Italic perfect is now, however, very out of date (see Rix 1999; Meiser 2003), and hard to understand. Consequently in the following discussion I primarily concentrate on the theory of Prosdocimi and Marinetti.

[15] I am grateful to an anonymous reviewer for directing my attention to the latter articles.

other perfect (< perfect and aorist) stems. Prosdocimi & Marinetti assume that *-u- originally could be added to secondary present stems, with preceding *-ā- deleted by means of a morphological process (thus South Picene **opsút** < *opes(ā)-u-t). But Prosdocimi & Marinetti do not explain why the u-perfect was subsequently lost in Oscan and Umbrian; in particular, given its usefulness as a marker of secondary verbs as in Latin, it is remarkable that both Oscan and Umbrian separately felt it necessary to recreate new perfect markers for their secondary verbs.[16]

Secondly, *-u- would be written as <u>, not <ú> in South Picene (Adiego Lajara 1992: 38–40; and see the discussion in section 4). Consequently, it is not possible to trace the Latin u-perfect and the South Picene **ú**-perfect to the same origin (and for some evidence from Oscan that the future perfect suffix may have come from *-ōs- rather than *-us- see section 3 below).

2.3 Analogy with 'to be'

In Sabellic the verb *h₁es- 'to be' is in a suppletive relationship with *bʰuH- 'to be, become'.[17] Two theories propose the generalisation of a future perfect suffix *-us- from forms derived from the latter root. Before we go on to discuss these, however, it is necessary to examine the origin and function of forms derived from this root in Sabellic. The distribution of *h₁es- and *bʰuH- in Sabellic is very similar to that of Latin. Both roots are preserved in the present stem, where we find, e.g., Osc. **est** 'is' (cf. Lat. est) and **fiíet** 'becomes' (cf. Lat. fīō); **fiíet** comes from *fūi̯e/o- < *bʰuH-i̯e/o-.[18] In the meaning 'to be', however, these roots are mostly in complementary distribution. In Latin, present-stem forms are largely built on *h₁es- and perfect-stem forms on *bʰuH-, although even in Latin there are exceptions to this (e.g. present subjunctive in fuam beside sim, future participle in futūrus, future infinitive in fore, imperfect subjunctive in forem beside essem).[19] In Sabellic, *h₁es- is used to form the present indicative, subjunctive and infinitive, and Oscan forms its future imperative on this root (e.g. **estud**). Umbrian's future imperative, however, is based on *bʰuH- (e.g. 2sg **futu**), and the same root is at the base of the imperfect subjunctive (Osc. 3sg **fusíd**), imperfect (Osc. 3PL **fufans**), perfect (Osc. 3PL **fufens**, 'Pre-Samnite' fufuwod, fufwod in the Greek alphabet inscription Blanda 1/Ps 20),[20] and perfect

---

[16] The small number of archaisms in Oscan and Umbrian which Prosdocimi & Marinetti consider to reflect the original state of affairs, like Umbrian portust '(s)he will carry' (IT VIIb 3), are to be explained differently (Rix 1992).

[17] The jury is still out on whether this root should be reconstructed as *bʰu̯eh₂- (LIV 98–111); I prefer to reconstruct the less committal *bʰuH- (thus, e.g., Jasanoff 1997b: 177 fn. 3).

[18] In Latin it is necessary to posit a rule *-ūi̯- > *-īi̯- (cf. also pius 'pious' < *pūi̯os; Meiser 1998: 86; Weiss 2009: 142). Although this may have been a Proto-Italic rule, independent changes of *-ū- > *-ī- (or *-ȳ-) seem to have occurred in at least some of the Sabellic languages (for discussion see Seidl 1994: 349–51, 361; Martzloff 2006: 105–18) . Note that in both Latin and Sabellic, although the regular result of *bʰuH- before a consonant ought to have been *fū-, this allomorph is only attested in a few forms: the present stem Lat. fīō, Osc. **fiíet** < *fūi̯e/o- < *bʰuH-i̯e/o-, the Umbrian past participle fito < *fūto- < *bʰuH-to-, and the Latin perfect fūī, which may reflect an old root aorist *bʰuH- (or a perfect *bʰe-bʰuH-; see Willi 2009 [2010]). The short vowel variant is clearly seen in Lat. fŭtūrus and in fore, forem, where lowering before -r- only affected short vowels (Weiss 2009: 142). In Oscan, it is more difficult to identify short vowels given the possibility of spelling -ȳ- < *-ū- with <u>. Long vowels in initial syllables were sometimes written double in the Oscan alphabet, but this was not compulsory. Since a long vowel would only be expected in the single example of **fusíd** and the two examples of **(ad)fust**, the lack of a double vowel in these examples might be coincidence. In Umbrian, however, where *-ū- became -ī-, we are clearly dealing with a short vowel in future imperative 2SG **futu**, futu, 2PL fututo, and future/future perfect 3SG **fust**, fust, fus. This short vowel seems to have been productive in Umbrian, where we find present subjunctive 3SG **fuia** in place of expected **fi**- as in Oscan and Latin. The obvious place to look for the short vowel variant is in forms where the original root *bʰuH- was before a vowel, which would have given *bʰuu̯V- regularly, whence could have been generalised a root *bʰu- (thus Rix 1983: 102; for an alternative explanation see Meiser 1998: 197).

[19] Diachronically, however, fuam may have been built from the aorist stem (de Melo 2004), and the future participle from a nominal formation (Fortson 2007).

[20] Osc. **fu(fe)d** in Rix's reading of Capua 22/Cp 31 should now be seen as part of a word **ta<v>ffúd** (as noted by Crawford et al. 2011: 419–20).

subjunctive (Osc. 3SG *fuid*).[21] Key to the following discussion will be a series of future and/or future perfect forms: Osc. 3SG **(ad)fust**, *fust*, *foust* (in the Greek alphabet in Buxentum 1/Lu 62), U. 3SG **fust**, *fust*, *fus*, 3PL **furent**, **fefure**. Most authorities (Buck 1928: 81, 169, 170; also 324 s.v. **súm**, 334 s.v. *est*; Vetter 1953: 404–5 s.v. *fu-*; Bottiglioni 1954: 134, 137–8, 152; Poultney 1959: 131; Pisani 1964: 30) consider all Umbrian forms other than **fefure** to be simple futures, with Oscan having both a future **fust**, *fust* and a homophonous future perfect *fust*. Conversely, Untermann (2000 s.v. *ezum*) describes all of these forms as future perfects in both Oscan and Umbrian. Some investigation is therefore required, which will demonstrate that both future and future perfect usage are found in both Oscan and Umbrian.

The future value of Oscan *fust* is clearly demonstrated in lines 18–19 of the Tabula Bantina (Lu 1/Bantia 1):

(1) pon.   censtur.   ḅansae.   toutam   censazet.
    *when   censor-*NOM-PL *Bantia-*LOC-SG *people-*ACC-SG *carry-out-census-*FUT-*3*PL
    pis.   ceus.   bantins.   fust.
    *whoever-*NOM-SG *citizen-*NOM-SG *of-Bantia-*ADJ-NOM-SG *be-*FUT-*3*SG
    censamur
    *carry-out-census-*PRES-IMP-PASS-*3*SG
    'when the censors at Bantia carry out a census of the people, whoever is a citizen of Bantia, let him be counted in the census'

Here *fust* refers to an action happening at the same time as the future verb *censazet* and the imperative *censamur*, and must consequently be understood as a future.[22] It would not make any sense for this to mean 'when the censors at Bantia carry out a census of the people, whoever has been a citizen of Bantia, let him be counted in the census': censuses are not carried out for the purposes of counting former citizens. In Umbrian, the future meaning of *fust* is shown in sentences such as IT Va 10–12:

(2) **ařfertur.   pisi. pumpe. /   fust. …   prehubia**
    *arfertor-*NOM-SG *whoever-*NOM-SG *be-fut-*3*SG *provide-*PRES-SUBJ-*3*SG
    'whoever will be *adfertor* …, he should provide …'

Future perfect value in Oscan is only unambiguously found in one passage in the Tabula Bantina (l. 27–30),[23] where there is a series of instructions of the type:

(3) pr(aetur).   censtur.   bansae.   [ni. pis.   fu]id.
    *praetor-*NOM-SG *censor-*NOM-SG *Bantia-*LOC-SG *no-one-*NOM-SG *be-*PERF-SUBJ-*3*SG
    nei. suae. q(uaestur).   fust
    *NEG *if   *quaestor-*NOM-SG *be-*FUT-PERF-SG

    'no-one shall be praetor or censor at Bantia if he hasn't been quaestor'

---

[21] For all the Sabellic forms from this root see Untermann (2000 s.v. *ezum* and s.v. **fiíet**).

[22] Compare the clear anteriority shown by the future perfect in sentences like l. 19–20:

(i) censamur. … poizad. ligud. ịusc.   censtur.
    *REL-*ABL-SG *law-*ABL-SG *this-*NOM-PL *censor-*NOM-PL *carry-out-census-*INF
    censaum.   angetuzet
    *carry-out-census-*PRES-IMP-PASS-*3*SG   *pronounce-*FUT-PERF-*3*PL
    'let him be counted in the census … with whatever law these censors have pronounced for the census'

[23] Despite Lindeman (1982: 306–7), who proposes to understand **(ad)fust** in Capua 21, 22/Cp 32, 31 as future perfect rather than future. The form *foust* in Buxentum 1/Lu 62 (written in the Greek alphabet) is in too broken a context to tell whether it is future or future perfect.

In Umbrian, future perfect semantics are found in the compound *am-prai̯-fu-s-,[24] as in IT VIb 56–7:

(4) ape.   ambrefurent /   termnome.   benurent …
    When go-around-FUT-PERF-3PL boundary-ACC-SG=in come-FUT-PERF-3PL
    persnimumo
    pray-FUT-IMP-3PL
    'when they have made the circuit and have come to the boundary … they shall pray'[25]

These preliminaries having been dealt with, we can now consider the first of the theories involving reanalysis. Although Buck (1904: 173) preferred the periphrastic theory, he observed that '[a]nother possibility is that the type is formed from the Perfect Stem after the analogy of the Future *fust* "erit"'; in the second edition of his Grammar he changed his mind, saying : '[t]he explanation as a periphrastic form is, I am now convinced, to be discarded in favor of that mentioned in the note, namely, that the type is formed from the perfect stem after the analogy of *fust* "erit"' (Buck 1928: 362). A similar approach is taken by Poultney (1959: 136) and Pisani (1964: 23), who draw attention to the future perfect usage of *fust*. Despite Buck's change of mind, future (perfect) *fus-* is not a very plausible base for a reanalysis, partly because it is so transparently to be analysed as root *fu-* + future suffix *-s-* (cf. the large number of other forms of this verb with the root *fu-* in Oscan and Umbrian).[26] The main objection, however, is that, since *fust* (uniquely) has both future and future perfect meaning, it does not seem a good locus for the abstraction of a solely future perfect morpheme *-us-*, which is always added to the perfect stem (and, as already alluded to, *-ōs-* is in fact more plausible as an ultimate reconstruction than the *-us-* required here; see section 3).

On the face of it, Jasanoff's (1987: 180) approach avoids some of the problems with Buck's analysis. He traces the origin of the creation of the *-us-* suffix back to a reduplicated perfect stem *fe-fu-* + future suffix *-s-*, attested in Umbrian **fefure** < *fefusent.[27] According to Jasanoff, comparison with the perfect stem *fef-* < *fefu-* (cf. Osc. **fufens**) would lead to a reanalysis of future perfect *fe-fu-s-* as *fe-f-us-*. This picture is considerably more plausible, since it sets up a close relationship between reduplicated future perfect forms with *-us-* beside reduplicated perfect forms without it. Consequently, Jasanoff's explanation is certainly the best put forward up to now. But there were plenty of other forms of this verb which retained the *-u-* in the root, which means that a synchronic analysis of the perfect **fufens** as having lost underlying *-u-* may still have been possible. If this were the case, it is unlikely that the *-u-* in **fefure** was attributed to an otherwise non-existent future suffix *-us-* rather than to the expected root *fu-*. But the major difficulty with regards to this theory is the question whether we can in fact be certain that **fefure** is a genuine future perfect. In the first place, as we have seen, the usual future perfect of 'to be' in Oscan and Umbrian is not a reduplicated formation, but is identical to the future. Jasanoff considers that 'the absence of reduplication in Oscan *fust* is secondary' and indeed we do very occasionally find apparent cases of 'de-reduplication' in Oscan and Umbrian (e.g. Osc. *dicust* '(he) will have said', Bantia 1/Lu 1 l.14 beside U. *dersicust* IT VIb 63; U. **fakust** '(s)he will have done' IT IV 31 beside Osc. *fefacust*, Bantia 1/Lu 1 l. 11, 17), which might be due to the loss of the vowel in the first syllable in compounds with

---

[24] For *fu-* as suppletive past to the verb for 'to go' in Umbrian see Vetter (1957).

[25] Note that the asyndetic conjunction with *benurent* confirms that *amprefurent* is a future perfect.

[26] Although an anonymous reviewer reminds me that synchronic transparency does not necessarily prevent metanalysis.

[27] In Oscan and 'Pre-Samnite' the *-u-* of the root syllable was copied into the reduplication syllable (as in Latin *cucurrī* 'I ran' < *-cecurrī*).

subsequent generalisation to the simplex, as in Lat. *tulī* 'brought' ← *tetulī*. I think these are probably less common than sometimes imagined, since some of these forms could also reflect aorist vs perfect stems which were generalised differently in the two languages (as envisaged by Meiser 2003: 104).[28] However, it is true that we would expect an *s*-aorist to the root **deik̑*- (as in Lat. *dīxī*, Greek *édeiksa*), so Osc. *dicust* at least is best explained as being 'de-reduplicated' from the perfect stem. Although I know of no good examples of 'de-reduplication' taking place in both languages (not just in Oscan, as implied by Jasanoff), it must be admitted that since **fu-* was particularly common in compounds and periphrastic constructions, such 'de-reduplication' cannot be ruled out on these grounds. However, in the other possible cases 'de-reduplication' would not have led to confusion of the future perfect with any other category. For **fefure** there was a particular reason to resist 'de-reduplication', since it would lead precisely to the homophony with the future stem which we in fact find. To my mind, the future and future-perfect semantics of *fust* look like an archaism.[29]

At this point it is necessary to look at the textual environment in which we find **fefure**, and in particular the question of whether seeing it as future perfect is in fact the most plausible analysis. First it is necessary to stress just how unique the form **fefure** is. The passage containing it (IT IIa 3–4) is not entirely clear, but it is part of the text of a prayer to be recited, 'when you have made an error in the sacred formula' (**pune: … naraklum: / vurtus,** IT IIa 1–2); for the time being the important parts for our purposes may be analysed as follows (following Weiss 2010: 41–4):

(5) **peře: … / aiu: urtu: fefure: fetu: puze neip**
    if   mistake-NOM-PL *arise*-PAST-PTC-NOM-PL *be   make*-FUT-IMP *as if* NEG
    eretu
    wish-past-PTC-ABL-SG
    'if … the mistakes will have arisen,[30] make it as if not intentionally'

In this passage, the apparent future perfect is formed from the past participle **urtu** combined with **fefure**; in all other future perfects using a past participle plus 'to be' we find **fust**, *fust*, *fus* and **furent**.[31] This is in fact the most common usage of **fust**, etc., in the Iguvine Tables,[32] and seems to have exactly the same meaning, as can be seen from sentences such as IT Ib 7:

(6) **inik ukar: pihaz   fust**
    then city-NOM-SG *purify*-PAST-PTC-NOM-SG *be*-FUT-3SG
    'then the city will have been purified'

which follows a sequence of future imperatives, and IT Va 22–23:

---

[28] It is not clear to me why 'de-reduplication' from compounds is to be preferred to this latter explanation, despite Willi (2010: 8 fn. 26), even if Oscan *anafaket*, in the Greek alphabet inscription Lucania or Bretii or Sicilia 3/Lu 18 is a perfect, as is generally assumed (e.g. Untermann 2000 s.v. **fakiiad**). For *faciō*, Very Old Latin preserves both an original perfect *fhefhaked* and an original aorist *feced* → Classical *fēcit*, so there seems no reason why *-faket* could not reflect the zero grade of the original aorist in Oscan. But *anafaket* could equally represent a present rather than a perfect anyway, exactly equivalent to Latin *facit* '(s)he does': the context does not rule out a present and the Greek letter epsilon can reflect Oscan /e/ < **-i-* (Lejeune 1970: 288–305). And *afakeit*, in the Greek alphabet inscription Potentia 40/Lu 13, can only represent the present /-fakit/, not the perfect /-faked/ < **-fe-faked*.

[29] Presumably to be compared with Latin *s*-forms like *faxō*, which have both future and future perfect semantics.

[30] **urtu** may perhaps be a mistake for **vurtu** 'made in error' (Untermann 2000: 808), since this verb appears earlier in this passage.

[31] This may be the reason why Untermann describes all cases of **fust**, etc., as future perfects.

[32] Other examples at IT VIa 7, Ib 39, Va 19, VIb 42 and VIIa 45.

(7) **ape: frater: çersnatur: furent: / ehvelklu:**
when brother-NOM-PL dine-PAST-PTC-NOM-PL be-FUT-3PL conclusion-ACC-SG
feia
make-PRES-SUBJ-3SG
'when the brothers will have dined, let him make a conclusion'

We know that the perfect of passive and deponent verbs in Umbrian is made by combining the past participle with the present of the verb 'to be', e.g., *screhto est* (IT VIIb 3) 'it has been written', It is reasonable, therefore, to analyse future perfect formations like **pihaz fust** as past participle plus the future of 'to be', which is entirely parallel with the same construction in Latin: *portatus est* 'he is carried', *portatus erit* 'he will have been carried', However, in Latin it is also possible to say *portatus fuerit* (Gildersleeve & Lodge 1997: 165–6). It cannot be ruled out that one could use a past participle with a future perfect in Umbrian too, so the use of **fefure** with a past participle does not provide any extra support against the possibility that **fefure** is a relic form of the future perfect. However, solely from the context future meaning is equally possible, and indeed probably more likely. Thus Meiser (2003: 59) suggests that **fefure** might be '[e]in "echtes" Perfektfutur, d.h. ein *s*-Futur zu einem eindeutig als solche charakerisierten Perfekstamm',[33] to be distinguished from the so-called 'perfective future' of the type Latin *faxō* (on which see Rix 1998; de Melo 2007a; 2007b) and from the future perfect. This would be a truly ancient formation, since no other instance of a future, as opposed to a future perfect, built to a perfect stem is preserved in Italic. Consequently, this origin does not seem very plausible. But there is another, far more banal possibility. If we look again at the text, we see that **fefure** is directly followed by the word **fetu**. Given that in every passive/deponent future perfect formed with a participle plus 'to be', we find **fust**, etc., I suggest that the writer of this Table may have begun writing **fetu** too early before correcting himself and writing **fure**, but did not go back and erase his mistake. Therefore, I would argue, it is possible that {**fe**}**fure** in Umbrian may simply be a botched attempt at writing **fure(nt)**; if this is correct, it would be possible to interpret {**fe**}**fure** as a simple future, not a future perfect.

However, other analyses also remain possible. Pisani (1931: 96–7; 1964: 194), followed by Bottiglioni (1954: 271), suggests understanding **fefure** as a perfect, comparing cases like IT VIa 26:

(8) persei. ocre. fisie. pir. orto. est. …
if mount-LOC-SG Fisian-LOC-SG fire-NOM-SG rise-PAST-PTC-NOM-SG is-3SG
'if a fire has arisen on the Fisian mount…'

Pisani analyses forms like *orto. est.* as 'Verbindungen von Partizipien und Präsentien, nicht als Passivperfekta' (Pisani 1931: 96–97).[34] So, in Pisani's view **urtu: fefure** ought then to be analysed as a participle plus a perfect. Again, such a usage would have a Latin parallel (*portatus fuit*). This analysis requires **fefure** to have an ending **-re**, which would be equivalent to the Latin perfect ending variant *-ēre* < **-ēri*. A minor problem is that if this were the case, we might expect something like [x]**fef(u)ere**,[35] but more difficult is the fact that there is no absolutely certain example of this ending in Umbrian (or any of the other Sabellic languages), where the original

---

[33] 'A "true" perfect future, i.e., an *s*-future to a perfect stem clearly characterised as such'.

[34] 'A combination of participle and present, not as a perfect passive'.

[35] It has been argued that there were also perfect endings **-ere* and **-re* in Italic, either of which might give the Umbrian form (Prosdocimi & Marinetti 1988). But the evidence is extremely doubtful: apparent cases where the *-ē-* of *-ēre* are not written may be due to syllabic notation (Weiss 2009: 393 fn. 60; on syllabic notation see Wachter 1987: 50–54).

aorist ending *-ens* is well established. A possible example might be *dedre* 'they gave' (Trebiae 1), but it is not clear that this inscription is Umbrian rather than Latin (Prosdocimi & Marinetti 1988: 110; and see the discussion under the inscription in Crawford et al. 2011).The verb *seɔure* identified by Pisani (1931) in Umbria 2/Um 23 does not exist, since his *iuvezalseɔure* is now to be read *iuve zalse įure*. Although Pisani's suggestion probably cannot be followed, it does raise two important problems with the analysis of **fefure** as a future (perfect). Firstly, loss of final *-nt* is, as Pisani (1931: 96) points out, not usual in Umbrian, although Buck (1928: 81) identifies two other examples in the Iguvine Tables. Secondly, it is in fact hard to justify a future perfect in the prayer which includes our form **fefure**. Looking only at IT IIa 3–4, the sequence future perfect in the apodosis and future imperative in the protasis does indeed fit one of the usual structures of conditional clauses in Umbrian, cf. IT VIa 5–6:

(9) sersi.　　　pirsi. sesus. … /　　　neip mugatu
　　seat-ABL-SG if　　sit-FUT-PERF-3SG　NEG　make-noise-FUT-IMP
　　'if he will have sat in the seat …, do not make a noise'

But, it will be remembered, the previous two lines of our passage state that the prayer is to be recited *after* having made a mistake in the ritual formula. This being the case, it would be strange to use a future perfect in the subsequent prayer, because the mistake has already happened before the priest begins to speak, rather than be going to happen later, so we should expect to translate this clause as 'if a mistake has arisen, then make it as not intentionally'.[36] It seems to me possible, therefore, that what we have in {**fe**}**fure** may be a 3SG imperfect subjunctive, exactly equivalent to Oscan *fusíd*, Latin *foret < *bʰu-sē-t*. This would also have the advantage that loss of **-d < *-t* is well attested in Umbrian (Meiser 1986: 152), and would therefore cause no problems, unlike the rather marginally acceptable loss of **-nt < *-nti* required for the analysis of {**fe**}**fure** as a 3PL. Although up to now it has been assumed that the predicate of {**fe**}**fure**, **aiu urtu**, is a neuter nominative plural in **-ā*, it could equally be a nominative singular feminine, also in **-ā*. The sense of **pe̯re: … aiu: urtu:** {**fe**}**fure** would then be 'if a mistake should have arisen', The major problem with this interpretation is that such a usage of the imperfect subjunctive is not paralleled in Latin, where this sense would be expressed by using the perfect in the apodosis (Gildersleeve & Lodge 1997: 380–2). For this reason I am not completely certain that this analysis is correct, but of course, although they are usually very similar, we cannot automatically assume that the syntax of Umbrian was necessarily identical to that of Latin.[37]

　　In this section, I hope to have shown that the generalisation from the verb 'to be' does not provide a simple explanation for the origin of a future perfect suffix *-us-*; in particular, the interpretation of the apparent future perfect form **fefure** is very difficult. I suggest that we should correct the reading of this form to {**fe**}**fure** and analyse it either as a 3PL future or a 3SG imperfect subjunctive.

3. THE FUTURE PERFECT SUFFIX CAN COME FROM **-ōs-*

Many of the theories so far proposed about the creation of the future perfect in Oscan and Umbrian are quite implausible, and none is so compelling as to prevent us looking for a more likely solution. A minor further disadvantage is that they assume that the future perfect suffix in Oscan and Umbrian was etymologically **-us-*. In Oscan, however, original **-u-* after a dental consonant became **-įu-*, as shown by, e.g., **pettiur** 'four' (Aufidena 1/Sa 17) *< *kʷetur*,

---

[36] Of course 'if a mistake will have arisen, make it as not intentionally' would make perfect sense if said *prior* to saying the sacred formula.
[37] For the syntactic development of the imperfect subjunctive in Italic, see Meiser (1993).

tiurrí 'tower' (ACC.SG) (Pompeii 2, 3/Po 34, 35) < *turrim*, a development not shared by *-ū- < *-ō-*, e.g., **dunúm** 'gift' (Teruentum 20/Sa 24) < *dōnom*, **regatureí** 'ruler' (DAT.SG) (Teruentum 34/Sa 1 A.12, B.15) < *regātōrei*.[38] Consequently, the lack of the spelling <iu> in Osc. 3PL **tríbarakattuset** 'they will have built' (Abella 1/Cm 1, side B l.13) suggests that -us- does not contain *-u-*, but rather *-ō-*, which would have become *-ū-* and then been shortened to *-u-* in non-initial syllables in both Oscan and Umbrian.

Bronisch (1892: 192) had already made this point in the context of his own theory of the origin of the future perfect, and the following arguments against it were raised by von Planta (1892–97: 2.376 fn. 2):

(i) lack of <iu> may be due to analogy with other future perfects whose perfect stem did not end with a dental;

(ii) *-ttu-* may have developed differently from other sequences of dental followed by *-u-*;

(iii) the Cippus Abellanus may not have used <iu> to write this sound sequence;

(iv) **tríbarakattuset** may not be a future perfect.

The last of these is clearly incorrect. Arguments (i), (ii) and (iii) may be correct, but add an extra explanatory step which is not necessary if we can find a plausible origin for a future perfect suffix *-ōs-*. In doing so, I start by accepting the following premises, all more or less explicitly at the base of the explanations discussed in sections 2.1 and 2.2:

(i) a future perfect is likely to be constructed by combining the morphology of the future and the perfect (cf. the Greek future perfect, found only in the passive, which is formed by adding the *s*-future marker to the reduplicated perfect stem, e.g., Gk. *lelúsomai* 'I will have been loosed');

(ii) the *-s-* of the *-us-* suffix found in the future perfect is originally the same *-s-* as that found in the future suffix;

(iii) the *-u-* of the suffix *-us-* must therefore originally have formed part of the perfect stem in at least some verbs.

4. A PERFECT SUFFIX IN *-ō-

The task is therefore to explain the existence of an original perfect formant *-ō-* in Sabellic, which in Oscan and Umbrian was later restricted to the future perfect. As it happens, we do not have to look too far for a perfect stem, since an *ō*-perfect is a well-known feature of South Picene. In South Picene, unlike in Oscan and Umbrian, *-ō-* did not fall together with *-u-*, and is normally represented by <ú> in words like **petrúnis** (Falerio 2/AP 4; cf. Lat. *Petrōnius*), **dúnoh** 'gift' ABL.SG (Interpromium 1/CH 2; cf. Lat. *dōnum*), **ekú** 'I' (Anxanum 1/CH 1; cf. Lat. *egō*). Short *-o-* and *-u-*, on the other hand, are normally written <o> and <u> respectively (Adiego Lajara 1992: 38–40; Weiss 1998: 710). On the face of it, therefore, 3SG **opsút** Aufinum

---

[38] The lack of this spelling in Capua 34/Cp 37, where we find **supr̥[us** (l.10) and **supruis** (l.7) 'above' < *super-* (cf. Lat. *super* 'above'), may be due to the idiosyncracies of this particular text, which also never writes long vowels or geminate consonants with double letters. <iu> is not written in **suveís** (Abella 1/Cm 1 A.9, B.9), **suvad** (Pompeii 16/Po 16), **suv(ad)** (Pompeii 17/Po 17) 'his/her', but this is also found spelled **súvad** (Aufidena 2/Sa 18), **súv(ad)** (Teruentum 9/Sa 16) and comes etymologically from *soṷo-*. The forms spelled **suv-** probably reflect an unstressed raising of *-o-* to [u] before -ṷ- rather than original *-u-* (the same thing happened in Latin, in which *suus* is found attested inscriptionally as *souo*, *soueis*, and in Umbrian; Leumann 1977: 135; Meiser 1986: 116; 1998: 68, 159; Weiss 2009: 334). The same development may also explain the god name GEN.SG **fatuveís** (Aeclanum 1/Hi 6) < *fatoṷo-* (cf. Lat. *Fatuus*, *fatuus* 'silly'; Untermann 2000: 268; de Vaan 2008: 205). The only other possible exception is **sup** (Teanum Sidicinum 34/Si 1b). This may be equivalent to Lat. *sub*, but the context is very broken, so it may reflect another word altogether.

1/AQ 2, **o]psúq** Interamnia Praetuttiorum 3/TE 7 '(s)he made' and 3PL **adstaíúh** Asculum Picenum 2/AP 2 'they set up', **praistaiúh** Cures 2/RI 1'they set out' must ultimately reflect endings *-ō-t and *-ō-nd respectively.[39]

Two explanations of these forms must be dismissed straight away: the first can be attributed to a suggestion of Marinetti's (1984: 48, 56–8)[40], followed by Adiego Lajara (1992: 121–3). This sees the South Picene ō-perfect as coming from a sequence *-āu̯-, generalised from ā-stem forms with a perfect suffix *-u̯- which is the same as that found in forms like Latin amā-u-it. However, such an explanation founders since monophthongisation of diphthongs occurred during the history of South Picene, after our first attestation of the ō-perfect (as already noted by Marinetti and reiterated at Prosdocimi & Marinetti 1993a: 226–7; see also Rix 1993: 337; Beckwith 2007: 79). The second theory, proposed by Prosdocimi & Marinetti (1993a: 225–37, 1993b: 299–307) and already discussed in section 2.2, sees South Picene **-ú-** as coming from *-u-. This is not phonologically possible.

The remaining explanation of these forms comes from Rix, followed by Beckwith (2007), who explains them as going back to the thematic vowel *-o-, generalised from the 3PL of thematic aorists, giving examples of such generalisation in other languages. An origin in *-o- rather than expected *-ō- obviously requires explanation. In different articles, Rix proposes two slightly different mechanisms for an origin in *-o-. Rix (1993: 337–9) notes that *-o- is found spelled <ú> in two environments in South Picene: before final *-m (e.g. **múfqlúm** Interamnia Praetuttiorum 1/TE 5 'monument' < *-om) and before final *-r (in **qolofitúr** Asculum Picenum 2/AP 2 'it is placed on high' < *-tor).[41] He therefore argues that the same raising may have taken place at some point in the development of 3PL *-ond to *-oh, after which the raised vowel was spread throughout the paradigm. If correct, this would mean that raising had affected all attested instances of *-o- in original final syllables in South Picene. Lack of evidence in South Picene makes it difficult to attain certainty in these matters, but there seem to me to be some points in favour of supposing that <ú> in 3SG **-út**, 3PL **-úh** reflects *-ō- rather than *-o-.

Firstly, it is not at all clear that the 3SG passive ending **-túr** does come from *-tor rather than *-tōr. The Italic 1SG passive *-ōr, later shortened to -or, is preserved in Latin in Plautus (Weiss 2009: 390). In Umbrian the secondary 3PL passive ending is -ntur in **emantu(r)** IT Va 8, 10, **terkantur** IT III 9, **tursiandu** ITVIIb 2 which suggests *-ntōr rather than expected *-ntor, presumably due to analogical spread from the 1SG.[42] We can therefore assume the same long vowel in the South Picene 3SG **-túr**. So raising of *-o- appears to be restricted to the single environment of before final *-m, which seems to cause problems in all the Sabellic languages: confusion of *-o- and *-ō- before final *-m is found also in Oscan, where they are written with <ú, o> or <u, u> more or less indiscriminately (Buck 1928: 37; Meiser 1986: 52); in Umbrian *-u- and *-ō- > *-ū- were lowered to *-o- before all nasals. Thus, while the general instability of back vowels before final *-m in the other Sabellic languages provides a parallel for the raising before *-m, there is no good reason to posit a raising in final syllables before other

---

[39] <-q> for expected -t is due to assimilation to the following word **qoras**. South Picene has primary -t < *-ti rather than secondary *-d < *-t, taken over from the present endings. For the development of the South Picene endings see Meiser (1987:120–1), Adiego Lajara (1990).

[40] Non uidi; reference from Willi (2009 [2010]: 241 fn. 48).

[41] For the etymology of this word see Vine (2006).

[42] Meiser (1992: 293 fn. 16) suggests that the Umbrian form is due to raising before *-r, with reference to Meiser (1986: 116). However, in the earlier work, the passive endings are not discussed; there may have been a rule in Umbrian that led to raising of *-o- to *-u- before *-r- followed by a continuant within a word, but we have no other evidence for word-final *-or. It is difficult not to see the long vowel in these Umbrian and South Picene passive endings in the light of the Oscan endings and Umbrian primary endings, some of which look as if they go back to *-tēr. For discussions of the Italic passive endings, without a very satisfying explanation of the Sabellic forms, see Meiser (1992), Jasanoff (1997a).

consonants. Secondly, a 1PL form **adstaeoms** (Anxanum 1/CH 1), clearly connected to **adstaíúh**, is attested in South Picene.[43] Rix assumes that raising of *-o- occurred in the 3PL in an intermediate stage between *-ond and **-úh** in which the *-o- was followed by a nasal plus fricative or aspirate. In this case, it is surprising that raising did not occur before the very similar sequence -**oms**. It could be argued that the raising in final syllables occurred prior to the syncope that gave -**oms** < *-omos, but final syncope before *-s seems to have taken place very early in Proto- or Common-Sabellic and is therefore unlikely to have occurred after a raising of *-o- in final syllables which occurred only in South Picene. Even if raising did not take place in this sequence, we would expect the -**ú**- which was regular in the 3PL to have been spread to the 1PL, just as it was to the 3SG -**út**.

Rix (2009: 258) suggests that raising in the 3PL *-ond had already taken place in Proto-Sabellic by way of an optional sound change by which the nasal was deleted, causing raising of the preceding vowel (but also retaining a variant *-ond, which for Rix plays a role in the creation of the *-end ending seen in Oscan and Umbrian); the resulting *-ǫd was generalised by South Picene, with subsequent levelling of *-ǫ- throughout the paradigm. This explanation avoids the problem of explaining raising of *-o- before *-nd in South Picene times, but at the price of assuming an ad hoc and optional sound change. Furthermore, the lack of raising in the 1PL remains just as difficult to explain as under Rix's earlier view.

All these problems are avoided if we start from *-ō- rather than *-o-: the 3SG and 3PL simply show the regular result of *-ō-, as, in fact, does the 1PL. Original long *-ō- was lowered before final *-m in South Picene, as in the genitive plurals **alíntiom** (Interamnia Praetuttiorum 3/TE 7) and **raeliom** (Anxanum 1/CH 1), as discussed by Weiss (1998: 710–13). Consequently, if we start from a perfect ending *-ō-mos > *-ōms, and if this rule also applied before *-ms, we might very well expect to find the spelling -**oms**.[44]

Consequently, I prefer to take South Picene <**ú**> in perfect forms at face value, as reflecting *-ō-. Having now established that there was probably an ō-perfect in South Picene, it is worth remarking that there may also be such a morpheme in the so-called 'Pre-Samnite' inscription Blanda 1/Ps 20 from Tortora in Basilicata, which is dated to around 500 BC and written in the Greek alphabet. Here are found the forms *fufwod* (side B line 2) and *fufuwod* (side C line 2), which are 3PL perfect forms of 'to be', These forms have been taken by Lazzarini & Poccetti (2001: 120–33) to reflect a thematic 3PL ending in *-o-nt, but they could equally reflect *-ō-nt, since <o> can reflect both *-ŏ- and *-ō- in this inscription (Lazzarini & Poccetti 2001: 50–1). It should be noted here that, as the Oscan and Umbrian perfects have only the ending *-ens < *-end < *-ent, and I reconstruct *-ō-nt for the South Picene perfect, there is no other evidence for the continuation of the thematic aorist ending *-o-nt in Sabellic. Another form, *(s)taiiosqtod* (side C line 3), has been taken by Beckwith (2007: 84–6) to reflect the 3SG imperative in *-tōd of a present in *-ske/o- built to an original perfect in *-o- (which I take to be *-ō-), as in South Picene. But this now ought to be read *(s)takiosqtod* (given as a possibility by Lazzarini & Poccetti 2001: 56, this is the Crawford et al. 2011 reading), which makes the identification of a verbal stem in this word unclear (for a completely different interpretation see Martzloff 2007: 182–3).

---

[43] The text on side A of the stele on which this inscription is found uses <e> instead of <í> to represent /e/ < *-ē-.

[44] It cannot be argued that an original *-o- before *-ms, raised by levelling from the 3PL, was then affected by the lowering rule to give -**oms**: lowering of original *-ō- before *-m obviously did not affect raised *-om in the accusative singular, so lowering affected only the reflex of long *-ō- , which must have still been long at the time (Weiss 1998: 713).

5. The origin of the Sabellic ō-perfect

The formation of the *-us- future perfect found in Oscan, Umbrian and Volscian should now be clear. It consists of the *-ō- perfect formant found in South Picene and perhaps 'Pre-Samnite' plus the standard Sabellic future formant *-s-. We can now see that the ō-perfect, far from being a marginal formation only attested in South Picene, must at one time have existed at least in Proto-Sabellic. However, this identification raises two further questions: where did the *-ō- formant come from? And why was it lost in the perfect in Oscan and Umbrian?

At this point a brief detour is required, to consider a parallel to the *ō-perfect in a completely different language family of ancient Italy. Lepontic is a Celtic language attested in North Italy from the sixth century BC; whether it is to be considered a dialect of Gaulish or is a separate language remains unclear (see Eska 1998; Uhlich 1999; 2007). Interesting for our purposes is the 3SG preterite *tetu* 'gave/dedicated' (CO-48/Morandi 180),[45] which comes from an original perfect *$d^{(h)}e$-$d^{(h)}oh_{1/3}$-e* to either the root *$d^h eh_1$*- 'set up' (LIV 136–8) or *deh_3*- 'give' (LIV 105–6). In Gaulish inscriptions written in the Greek alphabet (RIG 1: G-27, G-28, G-203, G-206) the same verb appears as *dede*, with the final -u < *-ō having been replaced with the standard preterite < perfect ending *-e (Schumacher 2004: 720–1). Although final *-ū < *-ō was replaced in *dede*, it seems to have lived on in at least some varieties of Gaulish, and indeed to have been metanalysed as a preterite suffix which could be added to other preterite stems. Thus we find it also in Gaulish 3SG *ieuru* (e.g. RIG 2.1: *L-4, RIG 2.2: L-133), *íeuru* (RIG 2.1: L-9), *eiorou* (RIG 1: G-153; a Greek alphabet inscription) 'gave, dedicated', whose etymology is very uncertain (Schumacher 2004: 738–41), but which is very unlikely to have inherited final *-ū < *-ō in the same way as *tetu*. It was clearly now seen purely as a preterite marker, to be added to preterites of other origins, and it was also generalised throughout the paradigm, as seen in 3PL *iourus* (RIG 2.1: *L-12). In Gaulish the preterite of derived verbs is formed with a -t- marker of uncertain origin, and again, *-ū has been added to this in the 3SG in forms like (Cisalpine) Gaulish 3SG *karnitu* (PG-1.4/Morandi 277), and 3PL *karnitus* 'erected a tomb' (NO 19, 21.1/Morandi 95, 97); Transalpine Gaulish *ḳarniṭou*[(RIG 1: G-151; written in the Greek alphabet) could be singular or plural. On this suffix in Gaulish see Eska (1990, 2007–2008).

I propose that a similar scenario may be behind the existence of the ō-perfect in South Picene and perhaps 'Pre-Samnite' and the future perfect in Oscan and Umbrian. The original Indo-European perfect was formed using both reduplication of the first consonant of the root, and by putting the root into the *o*-grade in the singular and the zero grade in the plural. As a consequence, in Proto-Sabellic, as in Lepontic and Gaulish, perfects to roots of the shape *$C(R)eH$*- like *deh_3*- 'give' and *$ureh_1$*- 'find' would have had a reduplicated stem ending in *-ō(-) in the entirety of the singular, and especially the 3SG *Ce-$C(R)oH$-e* > *Ce-$C(R)$ō*.[46] In verbal paradigms the 3SG, even if it originally represented a sequence of stem plus ending, is particularly likely to be interpreted as a zero ending added to a verbal stem. Furthermore, this 3SG often then acts as the base for the reformation of the rest of the paradigm (Watkins 1962: 90–6). This being the case, the spread of *-ō- into the plural is not surprising. The unitary stem *Ce-$C(R)$ō- could now be analysed as reflecting a zero grade reduplicated root *Ce-$C(R)$- plus a 'suffix' *-ō-. This perfect stem, with the addition of the future suffix *-s-, lies behind future perfect forms such as U. **teřust** (IT Ib 34), *dirsust* (IT VIIa 43) '(s)he will have given' < *de-doh₃-*,[47] Osc. *wouroust* '(s)he will have found' (in the Greek alphabet inscription

---

[45] Lepontic and Cisalpine Gaulish inscriptions are given first according to the numeration of the online Lexicon Leponticum (Stifter et al. 2012), and then those of Morandi (2004).

[46] 1SG *Ce-$C(R)oH$-h_2e* would give *Ce-$C(R)$ō*, 2SG *Ce-$C(R)oH$-te* would give *Ce-$C(R)$ō-te*.

[47] The -i- of the first syllable is due to generalisation from the present stem *di-dh_3-e/o-* > Vestinian *didet* '(s)he gives', Umbrian 3SG.PRES.SUBJ. *dirsa* '(s)he shall give',

Table 2. Development of aorist, perfect and future perfect in Proto-Sabellic

	Aorist	Perfect	Future Perfect
Proto-Indo-European	*urh_1-et	*ue-$uroh_1$-e	
Proto-Sabellic I	*uar-ed	*uo-$ur\bar{o}$	
Proto-Sabellic II	*uar-ed	*uo-ur-$\bar{o}$	*uo-ur-$\bar{o}$-s-t

Buxentum 1/Lu 62, side A l.10) < *ue-$uroh_1$- (McDonald & Zair 2012).[48] Having been analysed as a perfect suffix, *-$\bar{o}$- then spread to other perfect formations, also being added to the zero-grade stems, to give forms such as *dersicust* '(s)he will have said' < *de-dik-$\bar{o}$-s- (original perfect 3SG *de-$doik$-e).[49]

At this stage, when Proto-Sabellic still maintained the inherited difference between perfect and aorist, but the suffix *-$\bar{o}$- had been spread to all perfect stems, the future perfect was created, in a fashion exactly parallel to Greek, by adding the future suffix *-s- to the newly extended perfect stem. The developments I propose are set out in Table 2, using the Indo-European root *$ureh_1$- 'find', which gave Oscan *wouroust* '(s)he will have found'.

At the final stage of Proto-Sabellic, there was consequently a difference between an aorist formed with a verb root plus an ending consisting of a vowel *-e/o- plus person marker 1SG *-m, 3SG *-d, 3PL *-nt, and a perfect formed with a reduplicated zero-grade root plus a vowel *-$\bar{o}$- plus a person marker (zero in the 3SG; perhaps the 1SG *-$\bar{o}$ and 3PL *-$\bar{o}$-ri had already been remarked as *-$\bar{o}$-m and *-$\bar{o}$-nd). In Oscan and Umbrian, the loss of the original aorist and perfect as separate categories meant that each verb now had two perfect stems, and that there were now two sets of perfect endings. Each verb individually generalised a stem, with the result that we find a mixture of original (zero grade) perfect and aorist stems.[50] But in the case of the endings one or other had to be systematically preferred; it happens that it was the original perfect endings which were entirely lost and in all cases the aorist endings were generalised (1SG *-om, 3SG *-ed, 3PL *-end). Consequently, there is no trace of the $\bar{o}$-perfect in Oscan and Umbrian. The future perfect, however, had been built only on the perfect stem, and there were no parallel aorist stem forms. The generalisation of the aorist endings in the perfect would have led to the restriction of the suffix *-$\bar{o}s$- to a future perfect meaning, which could no longer be analysed as a perfect formant plus the *s*-future suffix. This specifically future perfect suffix was then generalised to all Oscan and Umbrian perfect stems, regardless of whether they came from original perfects or aorists, and including secondary perfects formed with -*tt*- in Oscan, and the so-called *-nki- perfect in Umbrian.[51] This is how we come to have a form like U. *benust* '(s)he will have come' (IT Vb 53), originally from an aorist stem *g^wem-.[52]

---

[48] Note that the sequence *-eu- gave *-ou- in Proto-Sabellic if not Proto-Italic (Meiser 1986: 37; Weiss 2010:101).

[49] Readers of an earlier draft of this article have pointed out to me that the same objections that I have raised to metanalysis of -*us*- from *(*fe*-)*fu*-*s*- should apply to this stage, i.e., that in the verbal paradigm of, e.g., *deh_3- 'give' there would be plenty of other examples of a root *$d\bar{o}$- which would hinder misanalysis of *de-$d\bar{o}$- as *de-d-$\bar{o}$-. While this is indeed true of roots ending in *-h_3-, it would not be true of those ending in *-h_1- and *-h_2-, since a root vowel *-o- is uncommon in verbal formations other than the perfect (the exception being the iterative-causative type in *CoC-eie- like Lat. *moneō* 'I warn').

[50] Cf. Osc. **kúmbened** 'agreed' (Abella 1/Cm 1 side A l. 10), from aorist *g^wem-, **deded** 'gave' (Teruentum 11/Sa 5) from perfect *de-dh_3-.

[51] On which see Willi (2010).

[52] A parallel to the preservation of a verbal category which is preserved despite the loss of the category from which it was originally derived is the Sanskrit precative/benidictive in -$y\bar{a}$-s-, which is derived from an original aorist optative in -$y\bar{a}$-. In Classical Sanskrit the (admittedly rare) precative is retained although the aorist optative has been lost (Whitney 1896: 212–13, 302, 326–28). For the spread of a derived verbal category beyond its original locus, cf. the (Early) Latin futures and future perfects of the type *faxō*. According to de Melo (2007a; 2007b), these come from an original subjunctive to *s*-aorist forms like *dixī*, and subsequently spread to verbs which did not form an *s*-aorist.

In South Picene, the situation is quite different: it seems to have been the new perfect suffix *-ō-, rather than the aorist endings, which was generalised to form all perfects, regardless of their origin, as we see from the perfect forms 3SG **opsút**, **opsúq**, 3PL **adstaiúh**, **pṛaistaiúh**. The former is probably ultimately derived from an old s-aorist *h_3ep-s- (Rix 1993: 335–7; Beckwith 2007: 81–2), and the latter is derived from an original characterised stative present stem, which would not have formed a perfect or an aorist in Indo-European.[53] South Picene **-út** shows that the 3SG in *-ō had been recharacterised with the present 3SG ending *-t.[54] The 3PL, which would have originally been *-ēr (cf. Lat. -ēre, -ēr-unt), was replaced with the aorist ending *-nd, perhaps already in Proto-Sabellic. We do not have any examples of future perfects in South Picene.

The 'Pre-Samnite' inscription Blanda 1/Ps 20, written in the Greek alphabet, looks as though it has a system closer to that of Oscan and Umbrian than to South Picene, if more archaic. Like them it has the 3SG thematic aorist ending *-ed (added to an original perfect stem) in 3SG perfect *fefiked* (side A l. 2), but it seems to show the 3PL thematic aorist ending *-ond rather than the athematic ending *-end as in Oscan and Umbrian in *fufwod* and *fufuwod*. However, given the absence of evidence for *-ond elsewhere in Sabellic, it cannot be altogether ruled out that *fufwod* and *fufuwod* reflect the ō-perfect endings, either because they were retained in the perfect of the verb 'to be', whose frequency may have protected it from the change; or because 'Pre-Samnite' created a mixed paradigm out of the aorist and perfect endings, with 3SG *-ed, 3PL *-ōnd.

6. Conclusion

We have seen that the origin of the future perfect suffix in Oscan and Umbrian has been discussed by linguists since the end of the nineteenth century. However, none of the suggestions thus far proposed has solved all of the problems raised by this morpheme, tending to need either unexpected sound changes or implausible reanalyses of some verbal forms. In particular, most have assumed that the suffix itself in some way derives from *-us-. Further investigation shows that a preform *-ōs- is in fact more likely, which can be decomposed into a perfect suffix *-ō-, ultimately derived from Indo-European perfect stems of the type *Ce-C(R)oH-, and the Sabellic future suffix *-s-. Although no *ō-perfect is found in Oscan and Umbrian, it is preserved in South Picene, and perhaps in the 'Pre-Samnite' inscription from Tortora.

Peterhouse
Trumpington Street
Cambridge
CB2 1RD
Email: naz21@cam.ac.uk

[53] On **-staiúh** as a stative see Cowgill (1973). Prosdocimi & Marinetti (1993a: 229–38) see **-staiúh** as being derived from a present stem in *-i̯e/o-; either way the perfect must be secondary. An anonymous reviewer suggests that we might expect to find **-stetúh** < *-ste-tō-nd < *-ste-stoh₂- rather than **-staiúh** in these forms. It is true that the original perfect to this root would have had a strong stem *ste-stoh₂-, and the perfect is ultimately what we find in Latin *stetī*, the perfect to *stō*, *stāre* 'stand', But *stetī* is originally the perfect to *sistō* 'cause to stand', and was only secondarily extended to the stative *stāre* (LIV 590–2, fn. 19). South Picene, instead of extending the usage of the equivalent of *stetī* to act as the perfect of **staí-**, used the productive marker *-ō- to create a new perfect from the present stem.

[54] Final *-d was lost in South Picene (Rix 2009: 253), so the secondary ending was not available. The same recharacterisation happened in Latin, where the regular perfect ending *-e-i̯ was recharacterised with 3SG *-t from the present to give *-ei̯t > -īt > -it.

REFERENCES

ADIEGO LAJARA, IGNACIO-JAVIER, 1990. 'Der Archaismus des Südpikenischen', *Historische Sprachforschung* 103, 69–80.

ADIEGO LAJARA, IGNACIO-JAVIER, 1992, *Protosabelio, osco-umbro, sudpiceno*. Barcelona: PPU.

BECKWITH, MILES, 2007. 'The Old Italic *o*-perfect and the Tortora inscription', in Karlene Jones-Bley, Martin E. Huld, Angela Della Volpe & Miriam Robbins Dexter (eds.), *Proceedings of the 18th Annual UCLA Indo-European Conference. Los Angeles November 3-4, 2006*, Washington DC: Institute for the Study of Man, 77–88.

BEELER, MADISON S., 1980. 'The future perfect in Oscan-Umbrian', in Herbert J. Izzo (ed.), *Italic and Romance. Linguistic Studies in Honor of Ernst Pulgram*, Amsterdam: John Benjamins, 1–7.

BENEDIKTSSON, HREINN, 1960. 'The vowel syncope in Oscan-Umbrian', *Norsk Tidsskrift for Sprogvidenskap* 19, 157–295.

BOTTIGLIONI, GINO, 1954. *Manuale dei dialetti italici Osco, Umbro e dialetti minori. Grammatica, Testi, Glossario con note etimologiche*, Bologna: STEB.

BRONISCH, GOTTHELF, 1892. *Die oskischen i- und e-vocale. Eine statistisch-descriptive und sprachgeschichtlich-vergleichende Untersuchung*, Leipzig: W. Drugulin.

BRUGMANN, KARL, 1886–1893. *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen*, Strassbürg: Karl J. Trübner.

BRUGMANN, KARL, 1890. 'Umbrisches und Oskisches', *Berichte über die Verhandlung der königlich säschsischen Gesellschaft der Wissenschaften zu Leipzig. Philologisch-Historische Classe* 42, 205–43.

BUCK, CARL DARLING, 1904. *A Grammar of Oscan and Umbrian. With a Collection of Inscriptions and a Glossary*, Boston, MA: Ginn and Company.

BUCK, CARL DARLING, 1928. *A Grammar of Oscan and Umbrian. With a Collection of Inscriptions and a Glossary*, 2nd edn., Boston: Ginn and Company.

CLACKSON, JAMES, forthcoming. 'Subgrouping in the Sabellian languages', *Transactions of the Philological Society*.

CLACKSON, JAMES & HORROCKS, GEOFFREY, 2007. *The Blackwell History of the Latin Language*, Oxford: Blackwell.

COWGILL, WARREN, 1973. 'The source of Latin *stāre*, with notes on comparable forms elsewhere in Indo-European', *Journal of Indo-European Studies* 1, 271–303.

CRAWFORD, MICHAEL, WITH BROADHEAD, W. M., CLACKSON, J. P. T, SANTANGELO, F., THOMPSON, S. & WATMOUGH, M, 2011. *Imagines Italicae. A Corpus of Italic Inscriptions*, London: Institute of Classical Studies.

DE MELO, WOLFGANG DAVID CIRILO, 2004. 'Gab es im Uritalischen einen *ā*-Präventiv?' *Historische Sprachforschung* 117, 249–68.

DE MELO, WOLFGANG DAVID CIRILO, 2007a. 'The sigmatic future and the genetic affiliation of Venetic: Latin *faxō* "I shall make" and Venetic *vha.g.s.to* "he made"', *Transactions of the Philological Society* 105, 1–21.

DE MELO, WOLFGANG DAVID CIRILO, 2007b. *The Early Latin Verb System. Archaic Forms in Plautus, Terence, and Beyond*, New York: Oxford University Press.

DE VAAN, MICHIEL, 2008. *Etymological Dictionary of Latin and the Other Italic languages*, Leiden: Brill.

DUPRAZ, EMMANUEL, 2012. *Sabellian Demonstratives. Forms and Functions*, Leiden: Brill.

ESKA, JOSEPH F., 1990. 'The so-called weak or dental preterite in Continental Celtic, Watkins' Law, and related matters', *Historische Sprachforschung* 103, 81–91.

ESKA, JOSEPH F., 1998. 'The linguistic position of Lepontic', in Benjamin K. Bergen, Madelaine C. Plauché and Ashlee C. Bailey (eds.), *Proceedings of the Twenty-Fourth Annual Meeting of the Berkeley Linguistics Society, February 14–16 1998. Special Session on Indo-European Subgrouping and Internal Relations, February 14 1998*, Berkeley CA: Berkeley Linguistics Society, 2–11.

ESKA, JOSEPH F., 2007–2008. 'Remarks on the 3. plural preterite in -*us* in Continental Celtic', *Die Sprache* 47, 108–19.

FORTSON, BENJAMIN W., 2007. 'The origin of the Latin future active participle', in Alan J. Nussbaum (ed.), *Verba Docenti. Studies in Historical and Indo-European Linguistics Presented to Jay H. Jasanoff by Students, Colleagues, and Friends*, Ann Arbor & New York: Beech Stave Press, 83–95

FORTSON, BENJAMIN W., 2010. *Indo-European language and culture: An introduction*, 2nd edn., Malden, MA: Blackwell.

GILDERSLEEVE, B. L. & LODGE, GONZALEZ, 1997. *Latin Grammar*. 3rd edn., London: Bristol Classical Press .

JASANOFF, JAY H., 1987. 'The tenses of the Latin perfect system', in G. Cardona and N. H. Zide (eds.), *Festschrift for Henry Hoenigswald on the Occasion of his Seventieth Birthday*, Tübingen: G. Narr, 177–83.

JASANOFF, JAY H., 1997a. 'An Italo-Celtic isogloss: the 3pl. mediopassive in *-*ntro*', in D. Q. Adams (ed.), *Festschrift for Eric P. Hamp*, vol 1, Washington DC: Institute for the Study of Man, 146–61.

JASANOFF, JAY H., 1997b. 'Where does Skt. *bhávati* come from?', in Dorothy Disterheft, Martin Huld and John Greppin (eds.), *Studies in Honor of Jaan Puhvel. Part One. Ancient Languages and Philology*, Washington DC: Institute for the Study of Man, 173–86.

LAZZARINI, MARIA LETIZIA & POCCETTI, PAOLO, 2001. *Il mondo enotrio tra VI e V secolo a.C. Atti dei seminari napoletani 1996-1998. L'iscrizione paleoitalica da Tortora*, Napoli: Loffredo Editore.

LEJEUNE, MICHEL, 1970. 'Phonologie osque et graphie grecque', *Revue des Études Anciennes* 72, 271–315.

LEUMANN, MANU, 1977. *Lateinische Laut- und Formenlehre*, 2nd edn, München: C. H. Beck'sche Verlagsbuchhandlung.

LINDEMAN, FREDRIK OTTO, 1982. 'Notes italiques', *Bullétin de la Société Linguistique de Paris* 77, 303–8.

LIV = RIX, HELMUT & KÜMMEL, MARTIN, 2001. *Lexikon der indogermanischen Verben*, 2nd edn, Wiesbaden: Dr. Ludwig Reichert.

MARINETTI, ANNA, 1984. 'Il verbo italico: apporti delle iscrizioni sudpicene', *Linguistica, epigrafia, fiologia italica. Quaderni di lavoro* 2, 27–73.

MARTZLOFF, VINCENT, 2006. 'Picénien *ímíh puíh*. Contribution à l'interprétation des cippes paléo-sabelliques de Castignano AP 2 et de Penna S. Andrea TE 5', *Lalies* 26, 105–29.

MARTZLOFF, VINCENT, 2007. 'Latin *pollinctor*, grec λίπα, picénien VEPSES. Phraséologie et élaboration poétique', in Alain Blanc and Emmanuel Dupraz (eds.), *Procédés synchroniques de la langue poetique en grec et en latin*, Bruxelles: Éditions Safran, 171–89.

McDONALD, KATHERINE & ZAIR, NICHOLAS, 2012. 'Oscan ϝουϝουστ and the Roccagloriosa law tablet', *Incontri Linguistici* 35, 31–45.

MEISER, GERHARD, 1986. *Lautgeschichte der Umbrischen Sprache*, Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft.

MEISER, GERHARD, 1987. 'Pälignisch, Latein und Südpikenisch', *Glotta* 45, 104–25.

MEISER, GERHARD, 1992. 'Die sabellischen Medialendungen der 3. Person', in Robert Beekes, Alexander Lubotsky and Jos Weitenberg (eds.), *Rekonstruktion und Relative Chronologie. Akten der VIII. Fachtagung der Indogermanischen Gesellschaft Leiden, 31. August–4. September 1987*, Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft, 291–30.

MEISER, GERHARD, 1993. 'Uritalische Modussyntax: zur Genese des Konjunktiv Imperfekt', in Helmut Rix (ed.), *Oskisch-Umbrisch. Texte und Grammatik. Arbeitstagung der Indogermanischen Gesellschaft und der Società Italiana di Glottologia vom 25. bis 28. September in Freiburg*, Wiesbaden: Dr. Ludwig Reichert Verlag, 167–95.

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

MEISER, GERHARD, 2003. *Veni Vidi Vici. Die Vorgeschichte des lateinischen Perfeksystems*, München: Verlag C. H. Beck.

MORANDI, ALESSANDRO, 2004. *Epigrafia e lingua dei Celti d'Italia*, vol 2. of Paola Piana Agostinetti (ed.), *Celti d'Italia*, Roma: Spazio Tre.

PISANI, VITTORE, 1931. 'Der inschrift der Statuette von Auximum', *Glotta* 20, 94–100.

PISANI, VITTORE, 1964. *Le lingue dell'Italia antica oltre il latino*, 2nd edn, Torino: Rosenberg & Sellier.

PIWOWARCZYK, DARIUSZ R., 2011. 'Formations of the perfect in the Sabellic languages with the Italic and Indo-European background', *Studia Linguistica Universitatis Iagellonicae Cracoviensis* 128, 103–26.

POULTNEY, JAMES WILSON, 1959. *The Bronze Tables of Iguvium*. Baltimore, MD: American Philological Association.

PROSDOCIMI, ALDO & MARINETTI, ANNA, 1988. 'Sulla terza plurale del perfetto latino e indiano antico. Appendice: Perfetto e aoristo nell'Italia antica', *Archivio Glottologico Italiano* 73, 93–125.

PROSDOCIMI, ALDO & MARINETTI, ANNA, 1993a. 'Appunti sul verbo italico (e) latino', in Helmut Rix (ed.), *Oskisch-Umbrisch. Texte und Grammatik. Arbeitstagung der Indogermanischen Gesellschaft und der Società Italiana di Glottologia vom 25. bis 28. September 1991 in Freiburg*, Wiesbaden: Dr. Ludwig Reichert Verlag, 219–79.

PROSDOCIMI, ALDO & MARINETTI, ANNA, 1993b. 'Appunti sul verbo latino italico III: Sulla morfologia del tema-base del perfetto latino. I. I perfetti in -*u*- e in -*s*-, in Frank Heidermanns, Helmut Rix and Elmar Seebold (eds.), *Sprachen und Schriften des antiken Mittelmeerraums. Festschrift für Jürgen Untermann zum 65. Geburtstag*, Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft, 292–328.

RIG 1 = LEJEUNE, MICHEL, 1985. *Recueil des inscriptions gauloises. Volume I. Textes gallo-grecs*, Paris: Éditions du Centre National de la Recherche Scientifique.

RIG 2.1 = LEJEUNE, MICHEL, 1988. *Recueil des inscriptions gauloises. Volume II.1. Textes gallo-étrusques; textes gallo-latins sur pierre*, Paris: Éditions du Centre National de la Recherche Scientifique.

RIG 2.2 = LAMBERT, PIERRE-YVES, 2002. *Recueil des inscriptions gauloises, volume II.2. Textes gallo-latins sur instrumentum*, Paris: Éditions du Centre National de la Recherche Scientifique.

RIX, HELMUT, 1983. 'Umbro e Proto-Osco-Umbro', in Edoardo Vineis (ed.), *Le lingue indoeuropee di frammentaria attestatzione – Die indogermanischen Restsprachen. Atti del Convegno della Società Italiana di Glottologia e della Indogermanische Gesellschaft, Udine, 22–24 settembre 1981*, Pisa: Giardini Editore, 91–107.

RIX, HELMUT, 1992. 'Zur Entstehung des lateinischen Perfekparadigmas', in Oswald Panagl and Thomas Krischs (eds.), *Latein und Indogermanisch: Akten des Kolloquiums der Indogermanischen Gesellschaft, Salzburg, 23–26. September 1986*, Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft, 221–40.

RIX, HELMUT, 1993. 'Osk. *úpsannam - uupsens* und Zugehöriges', in Frank Heidermanns, Helmut Rix and Elmar Seebold (eds.), *Sprachen und Schriften des antiken Mittelmeerraums. Festschrift für Jürgen Untermann zum 65. Geburtstag*, Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft, 329–48.

RIX, HELMUT, 1998. 'Bemerkungen zu den lateinischen Verbformen des Typs *faxo faxim*', in Jay Jasanoff, H. Craig Melchert and Lisi Oliver (eds.), *Mír Curad. Studies in Honor of Calvert Watkins*, Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft, 619–34.

RIX, HELMUT, 1999. 'Schwach charakterisierte lateinische Präsensstämme zu Seṭ-Wurzeln mit Vollstufe I', in Heiner Eichner and Hans Christian Luschützky (eds.), *Compositiones Indogermanicae in Memoriam Jochem Schindler*. Praha: Enigma Corporation, 515–35.

RIX, HELMUT, 2002. *Sabellische Texte. Die Texte des Oskischen, Umbrischen und Südpikenischen*, Heidelberg: Universitätsverlag C. Winter.

RIX, HELMUT, 2003. 'Ausgliederung und Aufgliederung der italischen Sprachen', in Alfred Bammesberger and Theo Venneman (eds.), *Languages in Prehistoric Europe*. Heidelberg: Universitätsverlag Winter, 147–72.

RIX, HELMUT, 2009. 'Umbro e sudpiceno. Differenze e concordanze', in Augusto Ancillotti and Alberto Calderini (eds.), *L'umbro e le altre lingue dell'Italia mediana antica. Atti del I Convengno Internazionale sugli Antichi Umbri. Gubbio, 20–22 settembre 2001*. Perugia: Edizioni Jama, 249–64.

SCHULZE, WILHELM, 1887. 'Das lateinische *v*-perfectum', *Zeitschrift für vergleichende Sprachforschung auf dem Gebiete der Indogermanischen Sprachen* 28, 266–74.

SCHUMACHER, STEFAN, 2004. *Die keltischen Primärverben: ein vergleichendes, etymologisches und morphologisches Lexikon*, Innsbruck: Innsbrucker Beiträge zür Sprachwissenschaft.

SEIDL, CHRISTIAN, 1994. 'Gemeinsabellisch und Vulgärlateinisch: Der Vokalismus', in George E. Dunkel, Gisela Meyer, Salvatore Scarlata & Christian Seidl (eds.), *Früh-, Mittel-, Spätindogermanisch. Akten der IX. Fachtagung der Indogermanischen Gesellschaft vom 5. bis 9. Oktober 1992 in Zürich*, Wiesbaden: Dr Ludwig Reichert Verlag, 349–70.

SIHLER, ANDREW, 1995. *New Comparative Grazmmar of Greek and Latin*. New York: Oxford University Press.

STIFTER, DAVID, BRAUN, MARTIN & VIGNOLI, MICHELA, 2012. *Lexicon Leponticum*. Vienna: University of Vienna. Website, http://www.univie.ac.at/lexlep. Accessed 07/09/2012.

ST JOHN, JACK, 1973. 'The Oscan-Umbrian future perfect in -*us*-', *Orbis* 22, 155–60.

UHLICH, JÜRGEN, 1999. 'Zur sprachlichen Einordnung des Lepontischen', in Stefan Zimmer, Rolf Ködderitzsch and Arndt Wigger (eds.), *Akten des zweiten deutschen Keltologen-Symposiums Bonn, 2–4. April 1997*, Tübingen: Max Niemeyer Verlag, 277–304.

UHLICH, JÜRGEN, 2007. 'More on the linguistic classification of Lepontic', in Pierre-Yves Lambert and Georges-Jean Pinault (eds.), *Gaulois et Celtique Continental*, Genève: Droz, 373–405.

UNTERMANN, JÜRGEN, 2000. *Wörterbuch des Oskisch-Umbrischen*, Heidelberg: Universitätsverlag. Carl Winter.

VETTER, EMIL, 1953. *Handbuch der italischen Dialekte. I. Band: Texte mit Erklärung, Glossen, Wörterverzeichnis*. Heidelberg: Carl Winter. Universitätsverlag.

VETTER, EMIL, 1957. 'ire und fuisse', in Heinz Kronasser (ed.), ΜΝΗΜΗΣ ΧΑΡΙΝ. *Gedenkschrift Paul Kretschmer 2. Mai 1866-9. März 1956*, Vol. 2, Wien: Wiener Sprachgesellschaft, 194–8.

VINE, BRENT, 2006. 'Autour de sud-picénien *qolofitúr*: étymologie et poétique', in Georges-Jean Pinault and Daniel Petit (eds.), *La langue poétique indo-européenne. Actes du Colloque de travail de la Société des Études Indo-Européennes Indogermanische Gesellschaft/Society for Indo-European Studies Paris, 22–24 octobre 2003*, Leuven: Éditions Peeters, 499–513.

VON PLANTA, ROBERT, 1892-1897. *Grammatik der oskisch-umbrischen Dialekte*, 2 vols, Strassburg: Karl J. Trübner.

WACHTER, RUDOLF, 1987. *Altlateinische inschriften. Sprachliche und epigraphische Untersuchungen zu den Dokumenten bis etwa 150 v. Chr*, Bern: Peter Lang.

WALLACE, REX E., 1985. 'Volscian *sepu*/Oscan *sipus*', *Indogermanische Forschungen* 90, 123–8.

WALLACE, REX E., 2007. *The Sabellic Languages of Ancient Italy*, Munich: Lincom.

WATKINS, CALVERT, 1962. *Indo-European Origins of the Celtic Verb. I The Sigmatic Aorist*. Dublin: The Dublin Institute for Advanced Studies.

WEISS, MICHAEL, 1998. 'On some problems of final syllables in South Picene', in Jay Jasanoff, H. Craig Melchert and Lisi Oliver (eds.), *Mír Curad. Studies in Honor of Calvert Watkins*, Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft, 703–15.

WEISS, MICHAEL, 2009. *Outline of the Historical and Comparative Grammar of Latin*. Ann Arbor, MI: Beech Stave Press.

WEISS, MICHAEL, 2010. *Language and Ritual in Sabellic Italy. The Ritual Complex of the Third and Fourth*, Tabulae Iguvinae, Leiden: Brill.

WHITNEY, WILLIAM DWIGHT, 1896. *A Sanskrit Grammar, Including Both the Classical Language, and the Older Dialects, of Veda and Brahmana*, 3rd edn., Leipzig and Boston, MA: Breitkopf & Härtel and Ginn & Company.

WILLI, ANDREAS, 2009 [2010]. 'To be or not to be: the Latin perfect in -*v*- ', *Historische Sprachforschung* 122, 228–47.

WILLI, ANDREAS, 2010. 'The Umbrian perfect in -*nç*/-*nș*-', *Transactions of the Philological Society* 108, 1–14.