

Latin 1st class -ā- verbs as thematic formations: On the deficiency of IE roots

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1. Distribution of -ā-

The origin of the Latin verbal morpheme -ā- has been much debated since the 19th century, and even if in the last thirty years some studies offered fundamental progress on this topic,¹ some problems seem to have remained unexplained. Specifically, the main point is that -ā- does not belong to the inventory of inherited PIE verbal morpheme since, although many sister languages do have -ā- categories in their verbal systems, those -ā- formations cannot be the direct outcome of a single PIE structure (see § 3).

However, -ā- exhibits very complex distributional patterns too (de Vaan, 2012): although it identifies a conjugational class, in Latin it may occur with different kinds of verbs, independently of their morpho-phonological structures, with a striking variety of *Aktionsarten* and different argument structures.

Thus, beside the traditionally labelled 'iteratives/intensives' in -tāre and -sāre like *cāp-tāre*, *pēn-sāre*, there are frequentative² verbs proper like *ārāre* or *dolāre*, which describe a distributed process consisting of a sequence of identical sub-events. The existence of a conspicuous set of similar verbs had scholars argue for an intrinsic iterative-frequentative meaning for -ā-. There is no doubt that at a first glance most Latin 1st conjugation verbs do have something to do with an iterative(or, better)-frequentative meaning, probably because many of them seem to share dynamicity as a lexical feature, that is, it seems always possible to use -ā- verbs in dynamic environments. In fact, it might be incorrect to claim that all -ā- verbs are dynamic, since at least some of them, like the causative ones (*sēdāre*, *placāre*), do not entail any repetition of a subevent, or, more generally, they rather seem to have a punctual meaning; verbs like *domāre*,

1 Most notably, Jasanoff, 1983, and Oettinger, 1984, although not directly on the -ā- of the present stem, Rix, 1999, de Vaan, 2012. The topic is largely addressed in all the main handbooks, like Leumann, 1977, Meiser, 1998, Weiss, 2009.

2 I follow Comrie, 1976, who keeps frequentatives separate from iterative proper, which are complex events with a repetition of discrete sub-processes.

secāre, cēlāre, dicāre, mitāre, crepāre, runcāre, for instance, show an endpoint without activating the preparatory sub-part of the process, that is, without being necessarily accomplishments, e.g.:

In corpore si quid eiusmodi est quod reliquo corpori noceat, id uri secarique patimur. (Cic. *Phil.* 8, 15)

Furthermore, a frequentative value seems to be intrinsic of roots rather than due to *-ā-*, as comparative data may show: the verb *amāre* from the root **h₂emb₃-* (LIV, p. 265), has the same actional property in Vedic *amīṣi*, with no need of a marked suffix. Conversely, frequentative *-ā-*less present stems are well documented in Latin itself, like *molēre*, which indicates a distributed process of grinding, but does not select for *-ā-* morphology. A specific relation between *-ā-* and an iterative-frequentative meaning seems also uncertain for the difficulty to ascribe the dynamic feature bound with many *-ā-* verbs to that affix rather than to the root itself or to the event level.

However, there is no proof for a narrow functional distribution of *-ā-* verbs, since the class also shows divergent patterns as regards transitivity and argument structure: most *-ā-* verbs are transitive, but the picture is quite complex since some transitive verbs display low transitivity (*dicāre*), and some intransitives are also attested (*labāre, volāre*). Finally, I do not take any stand here to the relationship between *-ā-* and the deponent conjugation, which will be explored in a separate study.

2. Morphological asymmetries of *-ā-* verbs

Latin *-ā-* verbs are far from unitary even if one takes in consideration their morphological properties, since apophonic patterns exhibit some variation, and more generally it seems that various formation rules are involved. As regards apophony, the picture is quite puzzling due to the possibility for *-ā-* verbs to select zero grade roots (*dīcāre*) as well as normal grades (*vetāre*), or even *-o-* and lengthened grades (*dolāre, cēlāre* < **kel-, vēnāri*, if from **uēnh₁-*).

However, in some cases the reconstruction of the apophonic pattern is difficult, at least in a PIE perspective, since back-formations might have taken place as for instance in *cēlāre* (de Vaan, 2008, p. 106, or from an unattested root noun), *vēnāri* (via root noun, de Vaan, 2012, p. 324) or *dīcāre* (from root noun **dic-*, or from prefixed?, de Vaan, 2008, p. 170). The *-ā-* conjugation has a high degree of complexity which does not fit well with the hypothesis of a direct IE inheritance.

Some *-ā-* verbs follow even more specific morphological rules: a small group of roots also have nasal formations but select *-ā-* when prefixed (*appellāre, destināre*), a number of prefixed verbs whose *simplices* belong to the third conjugation as well (*ēdūcāre*); finally, *-ā-* may appear after more articulated derivational processes (*coqu-īn-are, navi-g-āre, grat-ul-āre*).

In this contribution, I would like to highlight, in particular, the sub-class of de-nominal and de-adjectival *-ā-* verbs, which have received far less attention, probably because of the implicit idea that, being secondary from a morphological point of view (i.e. they do not derive directly from PIE roots), they are supposed not to deserve particular attention. Nevertheless, de-denominal and de-adjectival verbs look strikingly coherent in their morpho-syntactic properties. As outlined by Leumann (1977, p. 545ff), the possibility for derivation N/A > V with *-ā-* are quite constrained in Latin: base-nouns are mostly action nouns, process nouns, instrument nouns, activity nouns; as to adjectives, they usually indicate the state resulting after a process (*arbitr-ā-rī, fraud-ā-re, examin-ā-re, somni-ā-re, multā-re, sign-ā-re, nov-ā-re, sān-ā-re*).

From a broader perspective, nearly all de-nominal and de-adjectival verbs are agentive. De-adjectival are basically accomplishment verbs; de-nominal are activities or accomplishments

according to the properties of the base noun: activity readings are preferred with activity or profession nouns, while object nouns easily trigger resultative interpretations. Neither denominal nor de-adjectival seem to be intrinsically telic, rather, they usually license atelic readings. As a conclusion, de-nominal and de-adjectival verbs appear to be the most (only?) homogeneous sub-class within the whole group of *-ā-* verbs.

3. Recent proposals on the origin of *-ā-*

The properties sketched above show that *-ā-* neither had a unitary function, nor it was selected under a single morphological rule. Under these circumstances, it should not come as a surprise that its etymology is rather obscure, so that most scholars agree that *-ā-* did not belong to the original list of IE verbal morphemes.

Nevertheless, various attempts have been made in order to trace *-ā-* back to an Indo-European morpho-phonological sequence rather than to a single morph: according to Rix (1999), *-ā-* comes from verbal roots with the shape CV(R)CH₍₂₎- followed by the well-known suffix *-ie/o-* of present stem formations. In such an environment, Rix claimed for a vocalisation of inter-consonantal *-h₂-* as *-ā-*; the resulting sequence *-C-ā-ie/o-*, after the expected Proto-Italic drop of intervocalic *-i-*, gave rise to contraction in *-ā-*, like in **tonh₂-ie-ti* > **tonājeti* > **ton-ā-t* > *tonat*.

The advantages of this hypothesis are self evident: *-ā-* can be considered as the morphologisation of a Proto-Italic sequence, not necessarily an innovation; secondarily, *-ā-* verbs are shown to parallel other formations with strong comparative similarities like stative verbs such as *sedēre* < **sed-eh₁-ie/o-* or the type *veniō*, all characterised by the suffix **-ie/o-*. Furthermore, not all primary *-ā-* verbs seem to entail laryngeal roots: for instance, the laryngeal in the root of *sec-ā-re* is disputed to be **-h₁-* or **-h₂-*,³ and in *crep-ā-re* < **krep(h₂)* it is uncertain, cf. also *mic-ā-re* < **meyk(h₂)* (de Vaan, 2012, p. 321). More generally, in many cases a laryngeal at the end of *-ā-* verbs' roots is scarcely attested outside Latin.⁴

These difficulties led de Vaan (2012) to reformulate Rix's hypothesis, with the intent to avoid the postulation of a laryngeal root for all deverbal *-ā-* presents of Latin (and Italic). Thus *-ā-* is explained from a cluster *-ā-ie/o-* where *-ā-* is a morph *per se* which bears a specific and iterative (frequentative) meaning, and applies to atelic roots mostly.⁵ This proposal solves a phonological problem (no laryngeal is requested) but more morphological difficulties arise. Firstly, in § 1 I have tried to show that a relationship between *-ā-* and features like telicity and iterativity is not intrinsic or exclusive; secondly, from a structural point of view, *-ā-* still lacks an explanation, since it seems redundant with respect to the contemporary insertion of *-ie/o-*. It is not completely clear why some iterative verbs with *-ie/o-* select for *-ā-* while other like *fodiō*⁶ do

3 De Vaan, 2008, p. 550; *LIV*, p. 524, likewise *volāre* < **g^{h_w}elh₁-*.

4 Other forms can have different origins, for instance *runc-ā-re* from **Hreyk-* is denominal according to de Vaan, 2008, p. 530; 502, like *putāre* < *putus* 'pure' < **ph_{1/2}u-*.

5 Cf. also Alfieri, 2008.

6 If not from an athematic *-i* formation, cf. de Vaan, 2011; Schrijver, 2003.

not, and which would be the semantic content of $-\bar{a}-$, especially if one considers that a primary $-\bar{a}-$ suffix is not attested in any IE language.⁷

More generally, the lists of roots in *LIV* easily show that roots ending in $-eh_2-$ scarcely admit $-ie/o-$ as a present stem marker, and that roots with the shape Ceh_2i- are not maintained as such. This could suggest the existence of a phonological constraint against sequences $Reh_2\#ie/o-$ (cf. Rasmussen, 1989, p. 47ff) in primary verbs, which did not operate in the very productive (cf. Lühr, 2011) derivation of de-nominal/adjectival verbs in $*-eh_2ie/o-$ ($-\bar{a}ie/o-$). The consequence is that $*-eh_2ie/o-$ could have been the starting point for Latin $-\bar{a}-$ verbs only if the nominal domain is taken into consideration.

4. $-\bar{a}-$ from de-nominal and de-adjectival verbs

The hypothesis that de-nominal/de-adjectival $-\bar{a}-(i)o$ verbs are a starting point for the raising of $-\bar{a}-$ in the verbal domain has crucial advantages, most notably, if the origin of $-\bar{a}-$ stems is searched within the N > V derivation like in $*mult\bar{a}-(ie)-ti > mult-\bar{a}-t$, there is no need to explain the origin of the morph $-\bar{a}-$, since it belongs originally to the nominal stem, being the familiar feminine/collective/inanimate suffix $*-eh_2-$. Supporting evidence comes from the above mentioned large diffusion of verbs from $-\bar{a}-$ nouns compared with the scarce remnants of $-V\bar{i}o-$ primary verbs, which could be evidence for an implicative path $-\bar{a}-$ nouns > denominal $-\bar{a}-(i)o$ verbs > primary $-\bar{a}-$ verbs, where the idea is that an IE language is not expected to have $-\bar{a}-$ primary verbs if it has no de-nominal ones as well, and a language will not have de-nominal $-\bar{a}-$ unless it shows instantiations of $*-eh_2-$ in its noun morphology.⁸

In order to understand at which conditions the nominal morph $-\bar{a}-$ was reanalysed as a verbal element, it is important to explain why nearly all IE languages, probably in a common stage, selected preferably for $*-eh_2-$ nouns for deriving verbs. The internal history of $*-eh_2-$ in many IE languages shows that, far before being encoded as a feminine marker, it had other functions, belonging to the category of gender as well as to that of number. I do not wish to address the discussion of the original functions of $*-eh_2-$,⁹ I simply follow Luraghi (2011), according to whom $*-eh_2-$ probably had to do with number properties, in particular within mass or generic nouns. Therefore, thanks to its original value, $*-eh_2-$ was able to impoverish the features of definiteness and individuality of the nouns it applied to, making them generic enough to underlie a verbal lexeme.¹⁰ This could explain the reason why $*-eh_2-$ is also selected with verbs derived from non- $-\bar{a}-$ nouns (like *signum* > *signāre*) or from adjectives (*novo-* > *novāre*): starting from the more

7 Many IE languages do have $-\bar{a}-$ formations, but they are usually denominal (cf. OIr. *mar* < *mara*, Hit. *newaha-*, Gr. *τιμᾶω*, OHG *salbōn* < *salbō*), or simply derive from C(R) eh_2- roots (cf. Arm. *ban* < $*b^heh_2-$, *ka-* < $*g^weh_2-$, ToB *suwam* < $*sewh_2-$), or display suffixes (cf. Lith. *prašyti* < $*perk-eje-$).

8 This allows also to include Hittite, which has $-\bar{a}-$ verbs without possessing a true feminine $*-eh_2-$ gender, but has clear traces of pre-feminine use of the $*-eh_2-$ morph, see Melchert, 2014.

9 See Neri and Schumann, 2014; Matasović, 2004.

10 Jackendoff, 1991; Acquaviva, 2014.

ancient, non feminine value of **-eb₂-*, the selection of this suffix is due to the morpho-syntactic rule of N > V and Adj. > V derivation.¹¹

However, not all *-ā-* verbs are de-nominal or de-adjectival. It remains to be explained, why even “primary” verbs, i.e. derived directly from PIE roots selected *-ā-*. In order to do this, I point out some syntactic details that can be useful for a broader analysis. The point is that most de-nominal and de-adjectival verbs entail an Agent/Initiator argument (Ramchand, 2008), namely, their argument structure hosts a noun which controls and begins the process. The exact definition of such an argument and the corresponding syntactic position goes beyond the scope of this article, since the question is much debated. As a working hypothesis, I consider it as an instantiation of Voice (cf. Kratzer, 1996),¹² provided that the idea of Voice I adopt here is morphological rather than barely syntactic, that is, I refer to Voice as a feature which is activated by that syntactic structure and which is computed in the processes producing the final morphological alignment, in a Distributed Morphology (DM) framework.¹³

This point is very important for my analysis, since I hypothesise that, given that nearly all de-nominal/de-adjectival *-ā-* verbs have agentive meaning and activate a +Voice feature in their morpho-syntactic structure, then *-ā-* was extensively selected as a Vocabulary item for the feature +Voice. In synchronic perspective this means that though not being an agentivity morpheme per se, *-ā-* became an available item by subset principle, since it was simply the best available candidate for that feature.

Diachronically speaking, this is consistent with the idea that (Proto-)Latin inherited sequences with the shape $[[mult-ā-]_N (iō-)]_V$ where, after the loss of intervocalic *-i-*, the only remaining segment *-ā-* is easily reanalysed as licensing the value +Voice of the feature bulk $\{\sqrt{\text{root}}, +n, -\text{def}, +v, +\text{Voice}\dots\}$, giving rise to a re-segmentation $[[mult-]_V ā-]_{\text{VOICE}}$. From an abstract point of view, one should expect that *-ā-* became available firstly for those verbs whose syntactic structure typically entails a marked agentive Subject: this holds in particular for two sets of verbs which are part of the I conjugation class, that is prefixed and causative verbs like *ēducāre* and *sēdāre* respectively: both have an agentive argument structure, the former due to the presence of prefixes, the latter since they typically host an Initiator argument.

Nevertheless, there remains to explain the fact that *-ā-* is selected in a number of primary verbs which are neither agentive, nor causative, like *putāre*, *cubāre*, *labāre*, *tonāre*, *crepāre*, *amāre*, *volāre*, *avāre*, etc., where the spread of *-ā-* cannot be related to its availability as a +Voice item.

11 This could also explain the misleading impression (§1) that *-ā-* verbs had a specific aspectual value of iterative/frequentative: far from denying that many of them do have such a value, this is probably due to the fact that their underlying nouns have low definiteness as a consequence of being marked with **-eb₂-*, so that the resulting process ‘to make X’ may be interpreted as ‘to make X repeatedly’.

12 I do not address here the debate on the status of Voice, whether there is a single one VoiceP or medial Voices also projects nodes (Alexiadou and Doron, 2012), and at what extent Voice (active) may distinguish from vP or from Causative(s) projections. However, I do not consider this feature a matter of diathesis, since it has to do with the semantics of the verbs, rather than with passivization.

13 Halle and Marantz, 1993; Embick, 2000.

5. *-ā-* required with defective roots

In order to address this last point, some more theoretical assumptions have to be made, again within the framework of DM. The first one concerns the status of roots, which since the beginning of DM are conceived as categorically unspecified items, namely, without an intrinsic lexical character: in the first versions of the theory, roots used to gain lexical status under diacritic nodes (+v, +n, +adj., etc.) thought of as features. However, recent analyses¹⁴ take a more radical position and claim that no diacritic node is necessary, since the syntactic structure itself is enough, say, to make a root interpreted as a verb, when under verbal inflectional layers, and so on. Under this view, roots should be considered just as bare semantic nuclei, while any other information (e.g. lexical status, diathesis, transitivity, *Aktionsart*) depends on morpho-syntactic features.

In this paper I follow a softer hypothesis (cf. Embick, 2000), according to which roots need to be specified by a diacritic feature +v in order to enter a VP structure, and two kinds of roots are to be recognised in Latin: the first ones are those like *dic-* of *dicere*, *iug-* of *iungere*, *ven-* of *veniō*, which inherit their verbal identity, and consequently may host adjacent aspect-tense morphology (like *-n-*, *-īe/o-*, etc.) in the same local domain. The hypothesis is that these roots are intrinsically bounded with a +v feature, or, in more formal terms, they project a sub-node +v under the main Root node in their morpho-syntactic feature. Although this can appear speculative, a piece of evidence comes from the fact that 3rd conjugation verbs pattern quite differently from others: for instance, they display inflectional allomorphy, and normally maintain the inherited PIE word-formation rules. On the contrary, *-ā-* verbs have a single stem throughout the paradigm and select weak morphological strategies instead of those inherited from PIE (e.g. *-u-* perfect), which indicates that they have a different morphological status.

The question is now why such a root should be expanded with the morph *-ā-*, becoming something like a “stem”. I resolve this issue providing a formal solution which requires some further words about the feature bulk of verbs like *amāre* or *labāre* or *volāre*: these roots would be associated to a morpho-syntactic structure like {ROOT, -v, -Voice...}, just to limit ourselves to the lower phase; there is no overt marker for +v feature, and Voice is expected to be negative due to the semantics of these verbs. My proposal is that a feature configuration {-v, -Voice...} was marked, and that some kind of repair strategy was necessary.¹⁵ A typical case of repair strategy would be “deletion”, a particular kind of neutralisation described by Calabrese (2011), which affects features before the insertion of Vocabulary items, changing the value of one of them in the banned sequence. A sequence of {-v, -Voice} would be repaired by deletion of the value of Voice, which is neutralised becoming positive per default: the resulting sequence {-v + Voice} can be spelled out, through the insertion of *-ā-* as a marker of +Voice. In other words, I hypothesise that when a root is not overtly verbal, it can host inflectional nodes only provided that the feature +Voice is present in its morpho-syntactic structure. Therefore, underspecified

14 Borer, 2014; Acquaviva, 2014.

15 Following DM and Calabrese in particular, I use the term “repair” in the sense of phonological theories, i.e. referring to a formal mechanism which takes place in order to make a marked configuration of features optimal.

roots with the features {-v, -Voice...} are “re-activated” in a parasitic way, giving them an overt Voice morphology: this is the formal reason that may explain the use of *-ā-* for those verbs.

To sum up: the raising of *-ā-* with non-agentive primary verbs is explained as a morphological process which repaired a disallowed feature configuration; being the root underspecified and the syntactic structure agentiveless, the only way to give the root the possibility to be interpreted as a verb was to treat it as +Voice, then, by insertion of the vocabulary item *-ā-*.

It should be remarked that proposing defective roots and subsequent morphological processes is a well expected result in a DM framework,¹⁶ even if at least one theoretical point remains problematic, i.e. the claim about two different kinds of roots in Latin morphology, one projecting a +v node, the other lacking that property, thus drastically underspecified. This claim could be questionable since it involves some redundancy (why two kind of roots?) and, which is more important, it does not seem to allow any diachronic prediction concerning which PIE roots belong to the first group (3rd conjugation) and which ones are defective.

However, as regards these latter points, data seems to show exactly that kind of double pattern, with some roots more conservative and capable to maintain ancient morphological strategies, compared to others which are more consistent with innovations and exhibit productivity.

6. Conclusion

The complexity of the Latin presents of the 1st class is motivated by the morphological processes which enhance the productivity of *-ā-*, starting from *Nā- > V* derivations. Under such hypothesis, there is no need to postulate **-ā-je/o-* within the derivation of *-ā-* “de-verbal” presents: it is just *-ā-*, perhaps similar to a Romance thematic vowel since it is the morphological element which allows insertion of further inflectional markers. From a broader perspective, the distribution of *-ā-* shows that at least some IE roots were defective in Proto-Italic, i.e. they were no longer recognizable as verbs, and ought to be “re-activated” in order to start a new morphological cycle; this part of the process involved crucially the feature +Voice, considered as a vP edge marker, and instantiated after reanalysis by the morph *-ā-*. This proposal can account for the asymmetries between 1st and 4th classes of Latin presents and those of the 3rd class, as regards productivity and neutralization of PIE morphological rules, which are retained in 3rd class verbs.

References

- ACQUAVIVA, P., 2014, The roots of nominality, the nominality of roots, in A. Alexiadou, H. Borer, and F. Schäfer (eds.), *The Syntax of Roots and the Roots of Syntax*, Oxford, p. 33-56.
- ALEXIADOU, A. and DORON, E., 2012, The syntactic construction of two non-active Voices: Passive and middle, *Journal of Linguistics* 48 (1), p. 1-34.
- ALFIERI, L., 2008, Alcune note sui denominali indoeuropei e il suffisso **-ye/o-*, *IF* 113, p. 29-58.
- BORER, H., 2014, The category of roots, in A. Alexiadou, H. Borer, and F. Schäfer (eds.), *The Syntax of Roots and the Roots of Syntax*, Oxford, p. 112-148.

16 Cf. Halle and Marantz, 1993; Embick, 2000; Borer, 2014; Acquaviva, 2014.

- CALABRESE, A., 2011, Investigations on markedness, syncretism and zero exponence in morphology, *Morphology* 21, p. 283-325.
- COMRIE, B., 1976, *Aspect*, Cambridge.
- EMBICK, D., 2000, Features, syntax and categories in the Latin perfect, *Linguistic Inquiry* 31 (2), p. 185-230.
- HALLE, M. and MARANTZ, A., 1993, Distributed Morphology and the pieces of inflection, in K. Hale and S. J. Keyser (eds.), *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, Cambridge, p. 111-176.
- JACKENDOFF, R., 1991, Parts and boundaries, *Cognition* 41, p. 9-45.
- JASANOFF, R., 1983, The Indo-European '-ā- Preterite' and related forms, *IF* 88, p. 54-83.
- KRATZER, A., 1996, Severing the external argument from its verb, in J. Rooryck and L. Zaring (eds.), *Phrase Structure and the Lexicon*, Dordrecht, p. 109-137.
- LEUMANN, M., 1977, *Lateinische Laut- und Formenlehre*, Munich.
- LIV: H. RIX ET ALII, 2001, *Lexikon des indogermanischen Verben*, Wiesbaden.
- LÜHR, R., 2011, Primäre Ableitung, sekundäre Ableitung und Rückbildung. Das Stammbildungsformans germ. -ō- in Nomen und Verb, *Die Sprache* 49 (1), p. 26-40.
- LURAGHI, S., 2011, The origin of the Indo-European gender system: Typological considerations, *Folia Linguistica* 45 (2), p. 435-464.
- MATASOVIĆ, R., 2004, *Gender in Indo-European*, Heidelberg.
- MEISER, G., 1998, *Historische Laut- und Formenlehre der Lateinischen Sprache*, Darmstadt.
- MELCHERT, C., 2014, PIE *-eb₂ as an 'individualizing' suffix and the feminine gender, in S. Neri and R. Schumann (eds.), *Studies on the Collective and Feminine in Indo-European from a Diachronic and Typological Perspective*, Leiden, p. 257-271.
- NERI, S. and SCHUMANN, R. (eds.), 2014, *Studies on the Collective and Feminine in Indo-European from a Diachronic and Typological Perspective*, Leiden.
- OETTINGER, N., 1984, Zur Diskussion um den lateinischen -ā- Konjunktiv, *Glotta* 62, p. 187-201.
- RAMCHAND, G. 2008, *Verb Meaning and the Lexicon. A First Phase Syntax*, Cambridge.
- RASMUSSEN, J. E., 1989, *Studien zur Morphophonemik der indogermanischen Grundprache*, Innsbruck.
- RIX, H., 1999, Schwach charakterisierte lateinische Präsensstämme zu Set-Wurzeln mit Vollstufe I, in H. Eichner and H. Ch. Luschützky (eds.), *Compositiones Indogermanicae in memoriam Jochem Schindler*, Prague, p. 515-535.
- SCHRIJVER, P., 2003, Athematic *i*-presents: The Italic and Celtic evidence, *Incontri Linguistici* 26, p. 59-86.
- VAAN, M. de, 2011, PIE -*i* presents, -*s* presents, and their reflexes in Latin, *Glotta* 87, p. 23-36.
- VAAN, M. de, 2008, *Etymological Dictionary of Latin and the other Italic Languages*, Leiden.
- VAAN, M. de, 2012, Latin deverbal presents in -ā-, in C. H. Melchert (ed.), *The Indo-European Verb*, Wiesbaden, p. 315-332.
- WEISS, M., 2009, *Outline of the Historical and Comparative Grammar of Latin*, Ann Arbor, MI.