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Take up your arms

On two m^o -stems of the root $*(h)ar-$

Abstract: This article investigates the etymology of four Latin lexemes starting with /arm-/: *arma*, *armus*, *armilla* and *armenta*. It examines whether they are *men-* or *mo-*derivatives of the root commonly reconstructed as $*h_2er-$ ‘to join’. The combination of an in-depth analysis of 1) the use of *armenta* in Latin, and ἀρραρίσκω and ἀρμόζω in Greek, and 2) similar stems in other IE languages, particularly Vedic *īrmá-*, Latvian *īrmi et al.*, OCS *ramo* and *jarьmь et al.*, results in the conclusion that two stems should be differentiated. *Armus* and the other IE words for ‘shoulder; arm’ point to a second laryngeal and go back to a *mo*-stem ‘joining, (shoulder) joint’, originally an adjective. Its substantivation process went along with a change in accentuation and ablaut. The middle laryngeal would be the result of a contamination with $*p_l^h h_2-meh_2$. The other Latin words and OCS *jarьmь et al.* go back to a *men*-stem ‘the attachment’. The *armenta* were originally ‘the ones belonging to the attachment (a yoke)’ > ‘the plough animals’. Lastly, it is stated that if ἄρμα was a direct *men*-derivative of the PIE root, the wheel should be interpreted as ‘the attachment (to the chariot frame)’ rather than ‘the thing joined together’.

Keywords: *men*-stem; *mo*-stem; morphosemantics; ablaut; $*h_2er-$; laryngeals; *sef*-root

1 Introduction and controversies

This article will analyze the etymology of, and as such the precise relationship between, four Latin words: *armus*, *arma*, *armenta* and *armillae*.¹ The phonological link between them is obvious: they all start with /arm-/. The precise (morpho-)semantic correlation, however, seems less clear. For *armentum*, to begin with, three main etymologies have been proposed, each starting from a different root. The

¹ The following abbreviations will be used: → = internal derivation; → = external derivation; > = phonological development; >> = other development; AS = acrostatic; HK = hysterokinetic; PK = proterokinetic; AK = amphikinetic; C = any consonant; V = any vowel; H = any laryngeal; R = any resonant.

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oldest one dates back to Varro (*De Lingua Latina*, 5.96), who derived the noun from the Latin verb *arāre*, explaining that the *armenta* were plough animals. This idea was recycled later on, but consistently rejected, as the phonological development of ***arāmentum* to *armentum* looks unlikely.² Alternatively, however, the Latin word could have been derived, without any phonological problems, from the PIE verb root: **arāmentum* > *armentum*. Nevertheless, Nussbaum (2014: 256, note 98) refuses to accept this etymology on semantic grounds. His argumentation is twofold: 1) the *armenta* were herd animals, and not plough animals; and 2) a *men*-stem of the root **h₂erh₃-* ‘to plough’ would have meant ‘arable land, field(s) for crops’, cf. Lithuanian *armuõ* ‘field’.

Centuries after Varro, a new etymological connection was offered. According to the *communis opinio*, e.g. Walde & Hofmann (WH: 1, 68); Pokorny (IEW: 1, 72–73); Perrot (1961: 170); Ernout & Meillet (DELL: 47) and de Vaan (EDL: 54), *armenta* is derived from the root **(h)ar-*³ and originally meant ‘the things grouped/joined together’, i.e. ‘a herd’. Several reconstruct a collective **ar-mŋ₁-teh₂*. In earlier years, several publications, such as Walde & Hofmann (WH: 1, 68); Pokorny (IEW: 1, 72–73); DELL: 47 and Perrot (1961: 170), pointed out the semantic link between *armenta* and Old Norse *ǰrmuni* m. ‘ox, horse’. The same stem is found in the Germanic languages to denote ‘something big’, e.g. Old High German *ermun-* ‘immense, large’ and Old Norse *ǰrmungandr* ‘tremendous monster’, i.e. the name of the serpent that encircles the world in Nordic mythology. The stem is likewise found in all Germanic branches in personal names, cf. Gothic *Aírmana-reiks* ‘mighty

² See Perrot 1961: 170 and Nussbaum 2014: 256, note 98 for further bibliography.

³ Rix & Kümmel (LIV²: 2001: 269–270), Pokorny (IEW: 1, 69–76). As this root is differently reconstructed by several authors, for convenience I will write **(h)ar-* throughout this article, regardless of the reconstruction of the authors. Whereas this root used to be reconstructed with *h₂* (**h₂er-* > *h₂ar-* > core IE **ar-*, but Hittite **har-*), more recent works, such as Weiss 2009/2020, reconstruct a ‘non-Leiden’ root with *h₁* in order to be able to include some Anatolian words (e.g. Hittite *āra-* ‘correct, just’) that seem to be linked semantically, but do not show traces of a laryngeal (**h₁ar-* > IE [incl. Anatolian] **ar-*). In order to avoid such a root with the vowel /a/, the option that *h₂* neutralises in Hittite before an o-grade has been proposed (cf. Kortlandt 2003–2004, followed by Kloekhorst). Among the several other solutions that have been advanced, two major ones start from the idea that two roots should be reconstructed. The first reconstructs **h₂er-* for the non-Anatolian words and considers the possibility that the Anatolian ones are simply not connected (cf. Petit 2012: 180–182). The second assumes that the Anatolian as well as some of the other IE words are derived from a Caland root **h₁ar-* ‘to fit, be suited’, whereas the remaining words are derivatives of the ‘classic’ root **h₂er-* ‘to join’ (cf. Pinault 2016a, 2018, 2019). I will leave this discussion for a subsequent article. I would, for now, only like to add that the option of a ‘non-Benvenistean’ root **ar-* should not be overlooked as long as there is no evidence for an Achaeon derivative beginning with **or-* that is derived beyond doubt from a zero-grade.

ruler'.⁴ Consequently, at first it was thought that the Germanic words were also derived from the root **(h)ar-* and that they acquired the sense 'big' secondarily. Nevertheless, as it became clear that this was the original sense and that a further semantic development from 'being big' to 'big animal' took place, the connection between the Germanic words was abandoned. A further obstacle to connecting the Germanic stems with the Latin words is the fact that the former require a reconstruction **er- < *h₁er-*, which would not result in Latin *ar-*. Whereas the connection with the Germanic words was abandoned, the reconstruction of the meaning 'a herd' for *armentum* from the root **(h)ar-* remained. Nonetheless, there is one major semantic problem with this explanation, which was likewise pointed out by Nussbaum (2014: 256–257): the root **(h)ar-* does not actually mean 'to join, associate, aggregate', but 'to fit (together)'. As such, a derivative of this root would not mean 'that which is joined together, herd', but, according to Nussbaum, 'that which is put together (out of different pieces)'. Subsequently, Nussbaum (2014) came up with the most recent theory, for which the foundation was already laid by Bréal (1910–1911: 63–64). He puts forward a derivation from a completely different root and reconstructs a possessive derivative of **h₂an(h₁)mn-* 'breath of life', namely **h₂anm̄nto-* 'living thing; livestock', via the phonological development **armento- > armentum*. Whereas *armentum* became specialised to mean 'herd animal; herd', the other derivative *animāl* would have taken over the general meaning of 'living creature'. If Nussbaum's etymology is correct, it would mean that there would be no further connection between *armenta* and the other Latin words starting with /arm-/.⁵

In point of fact, there seems to be no disagreement on **(h)ar-* being the (basic) root of *arma*, *armus* and *armillae*. However, their precise morphosemantics and the nature of their connection with one another remain the subject of dispute. With regards to *arma*, to begin with, both Walde & Hofmann (WH: 1, 67–68) and Ernout & Meillet (DELL: 46–47) only mention the root **(h)ar-* without going into further morphosemantic details. de Vaan (EDL: 54), however, reconstructs a substantivised adjective in **-mo-*. It is not clear to me whether he also assumed that the *mo-*stem was derived from a *men-*stem; he puts the word together with *armentum*, but clearly states that they are two separate formations: **ar-mo-* vs. **ar-men-to-*. Semantically he suggests either a development from 'fitting' to 'what is fitted together, weapons', or from 'tools' to 'weapons'. Finally, and most recently, Weiss (2020: 306) likewise reconstructs a *mo-*stem 'a fitting' >> n. pl. *arma* 'fittings', and explains the semantic

⁴ See EWAhd: 5, 171–172 for an overview of all the Germanic cognates.

⁵ For other etymologies over the past two centuries that will play no further role in this article, I refer to the abovementioned articles and dictionaries.

development from ‘fittings’ to ‘armour’ as follows: “[it refers] originally to the fittings of defensive arms like shields and baldrics.” He connects the word with Greek ἄμφοι ‘fastenings of doors’.

Weiss (2009: 286) derived the third word, *armus*, from the same *mo*-stem as *arma* and translated this stem as ‘joint’. He reconstructs a separate extended form $*(h)r̥(h)-mo-$ for Vedic *irmā-* (and possibly Latin *rāmus*). Weiss (2020: 306) however, separates *arma* from *armus*, as he organises the latter with *irmā-* *et al.* under the extended version $*(h)r̥(h)-mo-$ ‘joint’. Previous authors also connected the Latin word for ‘shoulder; arm’ with the other IE words form ‘arm’ and the like, cf. WH: 1, 69 and EDL: 55. The only difference is in the way they translate the PIE stem. Whereas Walde & Hofmann wrote “Grundbedeutung Gefüge, Gelenk”, followed by Weiss *et al.*, de Vaan, among others, reconstructed the PIE meaning ‘arm’. A remarkable divergence is put forward by Pronk (2010) and (2011) who, unlike all the others scholars, reconstructs a *men*-stem rather than a *mo*-stem and does not reconstruct a secondary laryngeal or *seḡ*-root for these IE words for ‘arm; shoulder’.

In spite of all the controversies surrounding the words *armentum*, *arma* and *armus*, the final word *armillae* does not seem to cause any trouble. It is standardly derived, e.g. WH: 1, 68; Leumann 1977: 307; DELL: 48; EDL: 55 etc., from the noun *armus* for semantic reasons. The diminutive would obviously not have meant ‘little arm’, but rather ‘belonging to the arm’. As explained by e.g. Hakamies (1951: 16, 87) and Leumann (1977: 307), a semantic switch from a body part to something belonging to that body part is a not unknown feature for diminutives.⁶ However, as already touched upon in Strodach 1933: 39, a diminutive *armillae* can only go back to a *men*-stem. He reconstructs $*armīno-$ + *-elo-* ‘of the arm’. Remarkably, this observation did not lead to a further examination of the exact etymology of *armillae*, neither by this author nor by later scholars.

In sum, generally speaking *armus* and *armillae* are put together and differentiated from both *arma* and *armenta*, which are additionally kept apart from each other. There is no consensus on the root of *armenta*, nor on the exact suffix of *armus*, *armillae* and *arma*, nor on the precise semantics of the stem of *armenta*, *armus* and *arma*. In what follows, it will be shown that *armus* stands apart, being a *mo*-stem from what looks like a *seḡ*-root, whereas *armillae*, *arma* and *armenta* most likely share the same *men*-stem. The basic root for all four words is $*(h)ar-$ ‘to join closely’. More precisely, in section 2 the most relevant IE data will be arrayed. In 3 an analysis will be made as to which IE lexeme could be derived from a PIE *men*-stem and which one from a *mo*-stem. First (3.1), the Slavic data will be discussed

⁶ An observation that accords with Melchert’s (2014: 209) observation that the suffix $*-lo-$ could indicate an affinity: ‘of, pertaining to’.

and next (3.2) the Latin ones. Having argued that the words for ‘shoulder’ seem to point to a unified group, derived from a *mo*-stem, whereas at least *armillae* and *armenta* indicate a *men*-stem, section 4 strengthens this distinction, as the former points to a second laryngeal. In order to find out which suffix is present in *arma*, and what the exact etymology of, and connection between, the four Latin nouns is, section 5 focusses in the first place on the semantic aspect. On the one hand (5.1), an investigation of the use of ἀραρίσκω and ἀρμόζω in Greek texts and the application of *armenta* in Latin ones leads to the conclusion that *arma*, *armillae* and *armenta* all go back to a *men*-stem ‘the attachment’. A key component that leads to this conclusion is the Slavic words for ‘yoke’: Old Church Slavonic *jarъmъ et al.* The *armenta* were literally those belonging to the attachment, i.e. the yoke. On the other hand (5.2), a precise examination of *armus et al.* shows that a *mo*-adjective ‘joining’ must be reconstructed. Its substantivation process into ‘(shoulder) joint’ went hand in hand with a change in accentuation and therefore an ablaut switch. Finally (6), a section follows on the Greek data, and more particularly on ἄρμα and ἄρμός. It is stated that the forms are indeterminate for several reasons, but that if ἄρμα is a direct *men*-derivative of PIE **(h)ar-*, it would most likely be a direct cognate of the Latin *men*-stems. As such, wheels should be interpreted as ‘the attachments (of the chariot)’ rather than ‘the things joined together’. The article ends – not surprisingly – with a conclusion (section 7).

2 The data

Before diving into the analysis of the four Latin words, it is necessary to present similar stems from other IE languages. Indeed, there is a possibility that some elements, such as the presence of a second root laryngeal, became obscured in a noun for language-specific reasons in Latin. Other languages, however, may have preserved these elements and may therefore provide aid toward a more correct reconstruction of the Latin stems and as a consequence to their exact interconnection. Only the most relevant forms will be presented. The ambiguous Greek data will be treated in section 6.

- (Zero-grade) Vedic m. *īrmá-* ‘(two) forelegs’;⁷ Old-Prussian n./f. *īrmo* ‘arm’⁸; Lithuanian (pl. f.) *īrmos* ‘a lifting device’;⁹ Latvian (pl. m.) *īrmi* ‘(human) legs’.¹⁰
Lithuanian compounds:¹¹ *īrm-éd-é/-is* ‘gout; arthritis’ (*ésti* ‘to eat’: literally ‘joint-eater’) and *īrm-liga* ‘id.’ (*ligà* ‘illness’).
- Unsorted
 - (e-/o-/zero-grade) Avestan m. *arəma* ‘(one) arm’.¹²
 - (e-/o-grade): Germanic m. *arma-* ‘arm’¹³; Old Church Slavonic f. *rama* ‘shoulder; arm’ +1; Old Church Slavonic n. *ramo* ‘shoulder; arm’ +6; n.

7 See EWAia: 1, 205–206. The word *īrmá* occurs six times in the Vedas: 1) *AV Saṁhitā* 10.10.21: *īrmābhāyamaṇaṁ jātam*; 2) *AV Paippalāda* 16.109.1: (likewise) *īrmābhāyamaṇaṁ jātam*; 3) *Maitrāyaṇī Saṁhitā* (< *Black Yajurveda*) 4.2.13, line 8: *āhṛtyermaū prātyadhattām*; 4) *Bṛhad-Āraṇyaka-Upaniṣad* (< *Yajurveda*) 1.2.3: *tasya prāci dik śiraḥ, asau cāsau cermāu*; 5) *Mādhyaṇdima = Śatapatha-Bṛāhmaṇa* (< *Yajurveda*) 10.6.5.3: (likewise) *tasya prāci dik śiraḥ, asau cāsau cermāu*; 6) *Pañcaviṁśa-Bṛāhmaṇa* (< *Sāmaveda*) 21.1.7 *dityauhirmāto*.

8 The Old Prussian word occurs in the Elbing Vocabulary (no. 109): *Jrmo* ‘Arm’. Long **ā* points to a feminine nom. sg. or a neuter nom./acc. pl. Mažiulis (1988–1997: 2, 36), following Trautmann (1923: 13) and Toporov (1975–1990: 3, 68), reconstructs a Prussian feminine *ā*-stem.

9 Not mentioned by Trautmann (1923) or EDBIL. Only Toporov (1975–1990: 3, 68); Mažiulis (1988–1997: 36); Smoczyński (2007: 223); and LKŽ mention the feminine plural *īrmos* and, with the exception of Smoczyński, also probably a more recent form, the feminine plural *īrmės*. The definition given in LKŽ, *prietaisas iš dviejų sukryžiuotų ir virve surištų karčių galais stulpui pastatyti arba rąstui aukštyn kelti* (‘a device for lifting a pole or a log, made out of two twisted and rope-linked ends’), has been taken over by the other dictionaries. Semantically, the dictionaries propose a change from plural ‘shoulders’ to ‘device for ...’. The endings of the different attestations (see LKŽ) clearly point to a feminine *ā*-stem. As a consequence Mažiulis and Smoczyński reconstruct PIE f. **-meh₂*. In theory it may, again, originally have been a feminine or a neuter plural/collective. If the form *īrmės* is also ancient, we should probably reconstruct a suffix **-iyā*.

10 The Latvian form is only mentioned by Endzelins & Hauzenberga (1934–1938: 431) and EDBIL: 203. This form is a masculine (*i*)o- or (*i*)yo-stem.

11 See e.g. Vaillant 1958: 214; Toporov 1975–1990: 3, 68. See LKŽ for attestations and derivations.

12 Young Avestan adjectives *arəmə-šūtō-* (*Yt* 13n72), which Bartholomae (1904: 24, 197) translates by ‘vom Arm in Bewegung gesetzt, geschleudert’, and *aēuuō.armō-* ‘having one arm’. Duchesne-Guillemin (1936: 125), however, recognises the root of *šav* ‘to move’ in the first compound and translates ‘mū par le bras’. The second compound appears in an Avestan quote in *Pursišnihā*, nr 32. However, as is remarked in note e in the edition by Jamaspasa & Humbach 1971: 51, the translation of ‘having one arm’ is rather odd in the context and should maybe be adapted to ‘with (one hand and) one arm only’. In the other Iranian languages, we find Sogdian ‘*rm*’ ‘arm’, Ossetic *ārm* ‘hand’, New Persian *ārm* ‘upper arm’, Talysh *ām* ‘shoulders’, etc. See Greppin 1983: 314 and Cheung 2002: 153.

13 Old High German *arm*, Old English *earn*, Old Norse *armr*, Old Icelandic *armr*, etc., see e.g. EDPG: 25. The Gothic form *arms* is an *i*-stem. This is not remarkable, since several *a*-stems became *i*-stems in Gothic, see e.g. Braune & Heidermanns (2004: 101).

- Serbo-Croatian *ràme* +12; Macedonian m. *ràmin'* +1; Serbo-Croatian *ràmo*, gen. sg. *ràmena* +2; Modern Slovakian n. *rameno* +9.¹⁴
- (e-/zero-grade): Latin m. *armus* 'shoulder';¹⁵ *armentum* 'herd (animal)'; *armillae* 'armlet'; *arma* 'armour'.
 - (?): Old-Church-Slavonic m. *jarьmъ* +6 'yoke'; Slovakian *jarmo* +4 'id.'¹⁶

14 The +1 and +6 next to the Slavic data indicate the number of examples from the other Slavic languages. All Slavic forms come from Trubačev (1974–2014: 32, 185–187), unless stated otherwise. Note however that he did not classify the forms into different paradigms. See Trubačev for further works on the dialectal forms.

15 *Armus* has been studied in detail by J. André in his book *Le vocabulaire latin de l'anatomie* (André 1991: 82). The zero-grade of the *sef*-form is possible in a non-Leiden reconstruction, provided that the accent was on the root (after which syncope took place): (H)R̥HC- > **ara-*, but (H)RHC- > **rā-*. See Höfler 2017 for evidence of this twofold development. In his 2018 article (p. 142, n. 30) he points out that for this reason *rāmus* m. 'branch' could also be reconstructed as **h₂rhmó-* (cf. Ved. *irmā-*). See also Weiss (2009: 286; 2020: 306), who, however, in 2009 reconstructed the arm-word as a derivative of the *aniť*-root and added in his 2020 version that other reconstructions for *rāmus* are equally possible.

16 See REW: 3, 493; Trubačev 1974–2014: 1, 76–78; Sławski 1974: 1, 158; EDSIL: 28–29 for the data. The question mark is due to the fact that the originally long vowel (/ja/- can only come from /jā/- or /jō/-) is challenging. A *vřdđhi* form is unlikely, as well as Pedersen's (1902: 316f.) idea of word initial lengthening due to inner-Slavic sandhi. Trubačev (1974–2014: 1, 76–77; 10, 111–112; see the same pages for other scholars before him) proposed a derivation from, or connection to, a Proto-Slavic verb *(*koj*)*ariti*, based on Polish *kojarzyć* and Serbo-Croatian *kojāriti*. Whatever may be the precise relationship between these verbs and PIE *(*h*)*ar-*, it seems unlikely that the words for 'yoke' are its direct derivatives, as we would expect a Proto-Slavic long /i/ in its stems. This leaves us with analogy, either to the abovementioned Proto-Slavic verb or to the denominal Proto-Slavic verb *(*j*)*ar-m-iti* 'to be yoked'. In the latter case the assumption would be that the long vowel of the verb in *-ī*, *-iti* arose by a regular lengthening of the *o*-grade, after which the newly formed verb influenced the noun from which it was originally derived. Another issue is the fact that the data is divided into two different grammatical genders, masculine and neuter. There are two options: either some languages replaced one gender by the other without keeping the former one, or both forms already existed in the common language and each daughter language chose one gender. The former theory is advanced by Vaillant (1974: 571, 574), who writes that the neuter forms are secondary, without explaining why, and by Pronk (2010), who states the opposite, namely that a new masculine singular was formed to a neuter plural. He refers to earlier paradigms in which the singular was masculine but the plural neuter (still preserved in e.g. Russian *dvor*, *dvorá*). Sławski (1974: 2, 15) on the contrary, argues that within the suffix combination *-ьmъ*, *-ьmo*, the masculine form is quite exceptional and that they seem to be substantivised adjectives. Consequently, it is possible that these words originally were part of an adjective paradigm and that the Slavic languages either substantivised the neuter or the masculine form. In light of the fact that neuter *o*-stems are rarer and only occur in modern Slavic languages, Vaillant's theory is more likely.

I leave out Armenian *armukn*, as the word is too problematic.¹⁷

3 *-men- vs. *-mo-

Before diving into the more familiar problem of the second root laryngeal, I will first take a closer look at the exact nasal suffix(es). As is known, both the suffixes *-men- and *-mo- existed in PIE. However, via the external derivational process of adding a secondary suffix *-o- or *-eh₂- to *-men-, a secondary *mo*-suffix could be formed.¹⁸ The result is that two seemingly equal *mo*-stems may in reality be a *mo*-stem and a ‘*men* + *V*’-stem and as such not immediately related. Consequently, the question should be asked whether some of the abovementioned *mV*-stems (whether masculine, neuter or feminine) may point to an original *men*-stem. It is remarkable that all the IE nouns denoting ‘arm, shoulder’ point to a *mo*-stem, with the exception of some Slavic ones. This raises the question whether the Slavic data

¹⁷ There are semantic, morphological and phonological problems. To begin with, *armukn* does not mean ‘arm’, but ‘elbow’. From a typological point of view, the words for ‘elbow’ are not related to the words for ‘shoulder’ or ‘arm’, but are derived from a root ‘to bend’, see e.g. Buck 1949: 237–238. Next, it is not clear which compound members should be discerned. There exists an Armenian suffix *-kn*, as in *akn* ‘eye’ or *un-kn* ‘ear’, a suffix *-ukn*, as in *kr-ukn* ‘heel’, and also a word *mukn* ‘mouse; muscle’, see e.g. EDAIL: 23. Klingenschmitt (1982: 68), followed by Olsen (1999: 681), n. 38, among others, reconstructs **h₂(e)rhmo-mūs-* ‘arm muscle’ > **armumuk-* > *armuk-*, with loss of the laryngeal either in the sequence -CHC- or due to the fact that the word is a compound, and with the change from *mo* to *mu* due to the fact that it is the end of the first member of the compound. Ačaiyan (HAB: 1, 329b), however, reconstructs **ar-mo-ukn*. Several scholars, in turn, interpret *armukn* as an independent (inner-Armenian?) creation, cf. Hamp 1982; Ĵahukyan 1987: 112; Mallory & Adams (EIEC: 26b), without, however, going into morphosemantic details. Finally, although it is certain that an *o*-grade cannot be reconstructed, it will not be possible to say with certainty whether a zero- or an *e*-grade is possible. It seems that first more general data/research on Armenian laryngeals is needed. Following Kocharov (2018), we could reconstruct **h₁ar-m^o-* or **ar-m^o-*, but not **h₂er-m^o-*. As VCHCV > VCCV, according to him, the former two options remain possible even in the *seṭ*-form. Concerning the zero-grade, Kocharov (2018) mentions that there is no unambiguous evidence for the outcome of **h₁RC-*, but that **h₂RC-* > *arC-* and **RC-* > *aC-*. The last option is a zero grade of a *seṭ*-root. In the sequence CRHCV the laryngeal would either drop or vocalise. As such all three roots seem possible. However, the question should be asked whether the sequence #HRHCV and #RHCV are equal to #CRHCV in Armenian.

¹⁸ Other possibilities were that the /m/ instead of the /n/ dropped, or that the /m/ syllabified. This phenomenon is known as the *ašnō*-rule and was first noticed by Schmidt (1895). Even though the precise circumstances in which each outcome was triggered are still being debated, it looks like several elements may have played a role: phonological context, analogy, chronology, etc. See, among many others, Nussbaum 2010 and Pinault 2016b for examples and further explanations.

point to an archaism or an innovation. Secondly, whereas the four Latin words seem to point to several stems, one might wonder which words might be linked to one another purely on a morphological basis. In what follows, I will first take a look at the Slavic data and next at the Latin nouns.

3.1 The Slavic data

There are two groups of words: one showing a stem **ram^o*- with the basic meaning ‘arm; shoulder’, and a second stem **jarm^o*- with the basic meaning ‘yoke’. Within the first group, no less than six different paradigms can be distinguished: 1) a feminine *ā*-stem; 2) a neuter *o*-stem; 3) a neuter *men*-stem; 4) a masculine *mon*-stem; 5) a mix of a neuter *o*-stem and a neuter *men*-stem; 6) a neuter *o*-stem built to a *men*-stem. In order to find out whether the nouns for ‘arm’ *et al.* go back to a *mo*-stem or a *men*-stem, the question should be asked which of the six Slavic paradigms is or are of PIE origin, which ones date to Proto-(Balto-)Slavic times, which ones are of Common Slavic origin and which ones are parallel creations of the individual Slavic languages. The sixth paradigm, to begin with, seems to be an innovation, as a stem in *-men-o-* with an *e*-grade suffix rather than a zero-grade probably never existed in PIE. Since the transition from athematic to thematic nouns was active in all the Slavic languages, we can assume that the stem *ramen-* may have levelled the nominative stem *ram-* to *ramen-*, after which a thematic ending was added. Next, it seems again unlikely that paradigm no. 5, being a mixed paradigm, goes back to PIE (cf. Vaillant 1958: 214). Next, since the two attested forms of no. 4 (the masculine *men*-stem) are limited to a small area, this paradigm may also be set aside. As a result, three stems remain: (1) and (2), both *mV*-stems, and (3), a *men*-stem. Vaillant (1958: 189, 215); Sławski (1974: 1, 127); Trubačev (1974–2014: 32, 186–187) all note that the *men*-formation must be secondary. Whereas the latter two authors do not give further arguments, the first states that overlap in the thematic and athematic endings, due to syncope/fusion in the latter, would have resulted in a paradigm change.¹⁹ Even though Vaillant’s explanation is not entirely satisfying, it is a fact that *men*-stems show every sign of having been productive. As a result the option that the *men*-stems are plausibly secondary gains ground. Consequently, even though precise motives might still need to be further examined in order to be

¹⁹ Notice however that Vaillant explains in the same book (1958: 214) that the stem *ramen-* must be old since we find a common derivative in several Slavic languages, namely Old Russian *ramjanŭ* and Slovenian *rámeno* ‘enormous’, which he derives semantically from ‘having broad shoulders’. However, these Slavic words probably do not belong to the same word-family, as will be explained at the end of section 4 in this paper.

even more convincing, the no less than six paradigms for the word ‘arm’ present in the Slavic languages most probably all go back to one PIE *mV*-stem.

The second group of Slavic nouns – the ones denoting ‘yoke’ – univocally have the appearance of a *mV*-stem. However, the syllabification of the /m/ in the Slavic proto-form **jarimV-* could only have taken place if the /m/ had been preceded and followed by a consonant. As a consequence, it is impossible to reconstruct an original thematic *mo*-stem; the thematisation must have taken place after the syllabification, and a *men*-stem must be reconstructed. The most likely candidates to have triggered the syllabification are those with a zero grade suffix and an ending starting with a vowel. A consonant ending would more likely have resulted in the vocalisation of the /n/ rather than the /m/. Accordingly, the remaining possibilities are the following: PK dual n. *R-mn-ih₁*, them. (adj.) dual m. *R-mn-ō*, n. *R-mn-o-ih₁*, them. (adj.) collective m./n. *R-mn-eh₂*. The last form could equally be a feminine abstract. Alternatively, one could also construct a thematic adjective (not necessarily dual or collective) in *-mn-ó*. In that case the mix between m. and n. would be due to ‘language preference’ rather than m. sg. vs. n. coll./pl. Whatever the origin of the secondary vowel suffix, in a later stage the consonant cluster /mn/ was simplified to /m/. In sum, the Slavic data are important as on their own they already point to the existence of at least two different *m^o*-stems: one *mo*-stem ‘arm; shoulder’ and one *men*-stem ‘yoke’.

3.2 The Latin data

As regards the Latin data, *armenta* is obviously based on a *men*-stem. The next word however, *armillae* ‘armlet’, is trickier. The standard derivation of *armus* ‘shoulder; arm’ collides with a phonological complication. In point of fact, the diminutive suffix only becomes *-Vlla-* after a root or stem ending in /n/, /l/ or /r/.²⁰ A classic example is the following: *sign-um* → *sign(o)-l-um* > *signlum* > *sigillum*. Even if it is assumed that an /m/ could cause the same effect, a form ***arilla* would be expected and not *armilla*. Therefore a form **armn̄-la* must be reconstructed. The reconstruction of a neuter primary stem may also give an answer to a second, mostly overlooked, issue, namely the change in grammatical gender between the base form and the diminutive. DELL: 47 neglects the gender difference, but states that the regular use of the plural is due to the fact that the noun referred to an armlet that surrounds the arm several times. Whereas the transition from a masculine into a feminine seems difficult to defend, the development of a neuter (plural) into a

²⁰ See e.g. Leumann 1977: 306 and Weiss 2009: 281, n. 85, or 2020: 301, n. 88.

feminine is well-known. We have thus another derivative in **-men-*.²¹ *Arma*, finally, could come from both **armV-* or **armnV-*. There are no phonological reasons to exclude one from the other and at this point not yet enough semantic reasons to decide whether we should reconstruct a (second) *mo-* or *men-* stem.

In sum, based on the nasal suffixes alone, a division can already be made between *mo-* stems and *men-* stems. Whereas the *mo-* stems give the impression of a semantic unit ‘shoulder, joint’, the connection between the *men-* stems and the Slavic words for ‘yoke’ on the one hand, and *arma*, of which the stem is not yet certain, on the other hand, still remains unclear. Hence, at this stage it cannot yet be decided whether several *men-* and/or *mo-* stems should be reconstructed or not.

4 The second laryngeal

A major obstacle standing in the way of the unification of the four Latin words comes from the fact that the word for ‘shoulder, arm’ in several languages seems to point to a *seṭ-* root rather than an *aniṭ-* root. Indeed, the Baltic, as well as the Slavic and the Vedic data, point to a second root-laryngeal. The specific phonological developments are: Baltic **RHC* > **iRHC* > **iRC* > **iRC*; Slavic **ārC* > **ārC* > *rǎC-*; Vedic **RHC-* > *irC*. The Avestan data are dubious: if the stem reflected a zero grade, a *seṭ-* root should be reconstructed, as *ṚC* > *ərəC* but *ṚHC-* > *-ar(ə)C* (see Cantera 2001). However, if the stem was derived from the full (e or o) grade root, the result would have been *ar(ə)m-* for both *aniṭ-* and *seṭ-* roots, as the internal laryngeals in a *-CHC-* sequence generally dropped in Iranian. This observation leads to three options. First, we could conclude that there were two series of words for ‘arm, shoulder’: one containing a PIE *seṭ-* root and one an *aniṭ-* root. However, as such an option is semantically unattractive, it is preferable to start with the assumption that the words for ‘arm, shoulder’ belong together. Next, either Baltic, Slavic and Vedic (and perhaps Avestan) did not contain a second laryngeal and the phonological particularities that would seem to point to a laryngeal indicate in reality another phenomenon, or, lastly, Latin (and perhaps Avestan) did contain a second laryngeal, but do not show traces of it. The latter option, i.e. the one followed by most scholars, definitively eliminates the option of a shared *m^o-* stem with *arma*, *armenta* and *armillae* and requires the explanation for the origin of the

²¹ Since *armillae* goes back morphologically to a *men-* stem, but semantically either to ‘the arm’ or ‘the attachment’, one might argue that the whole reasoning could be turned around and that *armillae* might as well point to the reconstruction of a *men-* stem for the words for ‘arm; shoulder’. However, following Ockham’s razor, the theory proposed above is preferable.

second laryngeal. The most attractive solution, as a consequence, would be the second one.

Nevertheless, proving that there never was a second laryngeal is not without obstacles. There are two possibilities: 1) three independent phonological developments took place; 2) the Baltic and Vedic /i/ arose due to a parallel or common sound law in the sequence #HRC- and the Slavic words show a lengthened grade not caused by a laryngeal. As a matter of fact, several scholars have already proposed a sound law that may explain a Baltic /i/ at the beginning of a word. Pronk (2010) and Pronk (2011a), following Kortlandt 1977, suggested that the acute /i/ in Baltic was caused by a glottalisation in the zero-grade stressed first syllable (HÍRC- > I?RC- > ír-). Young (2006), on the other hand, notes that a metathesis -CHIC- > -CIHC- is not unknown in the IE languages and that such a development may have taken place after the syllabification of resonants: -C #Hi/uRC- → -C #i/uHRC-. The following step is to explain the Slavic and Vedic data. For the Slavic data we could assume two possibilities: either the Slavic long vowel is the result of analogy with a sound law in the (Baltic) zero-grade, or another phenomenon caused the vowel lengthening. Whereas Young did not go further than the general description of such a sound law in Baltic, Pronk put forward the idea that the result of his proposed sound law, namely a glottalisation, was taken over by the Slavic stem. For this, he starts with one common *men*-stem. Put in a schematic way: nom./acc.: *h₂er-mn → *har-mn → (1) *ahr-mn → *ormeḡ → rǎme; obl.: *h₂r-men → *hir-men → (1) *ihr-men → ír-m.²² One could adapt the same kind of analogy within Young's theory. The other option for the Slavic data would be to reconstruct an acrostatic or *vṛddhi* form. However, it would be rather odd that the Slavic stems are the only ones showing such a form and it should be added that 1) an acrostatic paradigm is not even possible as *ē* would not have been colored by the first laryngeal; and 2) that many scholars (cf. Kortlandt, Kim, Petit, Matasović) do not believe that an original long vowel resulted in an acute. This leaves us with the Vedic data for which there are again two options. First, we might assume that the same sound law as in Baltic took place in Vedic.²³ As such, we might wonder whether the theory advanced by Young (2006) would also be valid for other IE languages, such as

²² Note that Pronk reconstructs a *men*-stem. He uses this *men*-stem and sound law to relate the words for 'arm; shoulder' to the words for 'yoke' which he interprets as 'two arms' or the like. However, as showed above, the two groups of words are not related as one points to a *mo*-stem and the other to a *men*-stem. Nevertheless, for this particular part of his reasoning the *men*- vs. *mo*-stem does not have direct consequences.

²³ Interestingly, Pronk does not state in his 2010 article that the same sound law may have taken place in Vedic. In order to explain the /i/ in Vedic, Pronk simply refers to an article of Lubotsky (1997) where the latter author mentions sequences where /ir/ can become /ir/. However, in that

Vedic. For an example of -CHIC- > -CIHC- in Vedic, see Kümmel (2016: 218) who, following Mayrhofer (1986: 174–175), discusses the laryngeal metathesis of **Hi* and **Hu* between consonants, e.g. **gHit-tá-* > **giHtá-* > Vedic *gīta-*. A second option is that an analogy in the root may have taken place. In fact, there is a possibility that the Vedic-speaking people might have etymologised the word for ‘leg’ as a derivative of *ir-*, a reduplicated stem of the verb *ar-* ‘to move’ (EWAia: 1, 105–106). As a matter of fact, a derivational relationship between ‘leg’ and ‘moving, going’ seems logical from a typological point of view. Notice for example Sanskrit *jānghā* ‘lower leg’, ultimately derived from **ḡheng-* ‘to walk’. Consequently, they ‘corrected’ the deverbative *irmá-* into *īrmá-*. This theory might find an indirect argument in the texts, see (1).

- (1) *īrmābhyāmayanaṃ jātam sakthibhyāṃ ca vaśo tava āntrebhyo jajñira atrā udarādadhī vīrudhaḥ*

‘From thy (two) fore-legs (*īrmá*) motion (*āyana*) was born, and from thy thighs (*sákthi*), O cow; from thine entrails were born eaters (*attrā*), out from thy belly (*udāra*) the plants.’ Translation Whitney (1905: 607)

AV 10.10.21/AVP 16.109.1

The sequence *īrmābhyāmayanaṃ* consisting of the stems *īrmá-* and *āyana-* ‘motion’, the latter being a derivative from the root *ay-* ‘to go’ (EWAia: 1, 102), can best be explained as a play on words between two semantically close derivatives, one from the root ‘to move’, the other from the root ‘to go’. Or, in other words, if it would be correct to interpret *īrmābhyāmayanaṃ* as a play on words, there is an indication that the Vedic poet made a synchronic link between the word for ‘leg’, *īrmá-*, and *ir-* ‘to move’, and that the latter stem may have had an analogical impact on the former.

In sum, it seems that there are plenty of ways to avoid the reconstruction of a second root-laryngeal.

Admittedly, the avoidance of the reconstruction of a second laryngeal would have a huge benefit as it would obviate the need to seek an answer to why there would be such a second laryngeal. However, it should be added that none of the proposed sound laws above are even close to being generally accepted. The only way that such a reconstruction is possible is if one of the proposed sound laws were correct at least for Baltic; if the Slavic stem were the result of influence from the zero-grade root on the long-grade root, whereby for some reason the ablaut did not undergo analogy; and, finally, if the Vedic /i/ were the result of either the same

article Lubotsky talks only about the particular sequence *CRHi/uV, which is unfortunately not the sequence we find in our case.

sound law or some analogy. A final option would be if three independent analogies (two yet to be determined) had taken place within the history of the languages themselves. In other words, one would have to base a claim on a huge number of speculations. In conclusion, even though it might not be impossible, there is simply no economical way not to have to reconstruct a second laryngeal for the words for ‘shoulder; arm’.

But then how do we explain the second root laryngeal? There surely did not exist a suffix $*-h_xmo-$ in PIE. Consequently the laryngeal and the *mo*-suffix should be separated. It is generally assumed that the second laryngeal simply points to a *seṭ*-root, a meaningless variant of the standard *aniṭ*-root, or in other words a grammaticalised enlargement that did not invoke ablaut and whose original use we will never discover. A major counterargument is the fact that this *seṭ*-root does not seem to exist elsewhere. Alternatively, the laryngeal may have been a primary suffix. In that case, this suffix may have been the abstract suffix $*-eh_2-$ that either was added to an *o*-grade root (cf. a thematic $\tau\omicron\mu\eta$ -stem), or that formed proterokinetic (cf. $*g^w\acute{e}n-h_2$, $*g^wn\acute{e}h_2-$) or amphikinetic stems (cf. $*p\acute{e}nt-oh_2-$, $*p\eta t-h_2-$). By adding a secondary *mo*-suffix, the primary suffix entered the zero-grade, a phenomenon that is known for other secondary stems.²⁴ Nevertheless, the same counterargument is applicable: there appears to be no direct evidence of this primary *eh*₂-stem. It should be added, however, that another primary thematic stem is present in Vedic *ará-* m. ‘spoke of a wheel’ (+ *ara-tí-* ‘spoked wheel’).²⁵

Consequently, the observation that the middle laryngeal was originally neither a part of the root nor a part of the suffix leads to the conclusion that it must have arisen by analogy. As such, a *mo*-suffix used to form another body part, added to a root ending in a laryngeal, might have been interpreted as a suffix $*hmo-$ and taken over by the *mo*-stem ‘arm; shoulder’. This kind of development is not unknown in (P)IE. As a matter of fact there is a PIE noun that ticks all the boxes: $*p\acute{h}_2-meh_2$ ‘palm, hand’. This noun, present in at least Italic, Greek, Celtic and Germanic, can be securely reconstructed for PIE. It is a derivative of the root $*pelh_2-$ ‘be flat, wide’, indicating the flat underside of the hand. It should not come as a surprise that a word for a body-part characterised by flatness influenced the word for ‘shoulder-joint’. As a matter of fact, a derivative of another PIE root belonging to the same semantic sphere is used in the Greek word for ‘scapula’: $\acute{\omega}\mu\omicron-\pi\lambda\acute{\alpha}\tau\eta$,

²⁴ See e.g. Höfler 2015 for this phenomenon in *s*-stems. In the talk that preceded the written version of this article, I proposed the option that the ablaut change seen in the nouns for ‘shoulder’ might be due to the ablaut change of the primary stem engendered by the primary suffix. However, as I have not yet been able to find other such examples, this option now seems impossible.

²⁵ If they contain the same PIE verb root after all, a second primary stem would be present in Vedic *áram* ‘fittingly, enough’, Hittite *āra* ‘right, proper(ly)’, etc.

literally ‘flat part of the shoulder’. Thus it seems possible that $*p_1^f h_2 - meh_2$ may have been reanalysed as $*p_1^f - h_2 meh_2$ and may have caused $*h_2 r - m\acute{o}$ - to develop into $*h_2 r - h_2 m\acute{o}$ -.

The main consequence of this reconstruction is the fact that the differentiation that was already made between the nouns for ‘shoulder, joint’ and the others on the basis of the suffix ($*-mo-$ vs. $*-men-$) has now been reinforced by the presence of a second laryngeal. Nevertheless, it fails to tell us more about the specific connection between the ‘single-laryngeal’ stems, or about the exact etymology of the ‘double-laryngeal’ stem.

5 Semantics of $*(h)ar-$

In order to find the most precise etymology possible of the abovementioned m° -stems, a full semantic analysis is required. Such an inquiry starts with the root, in this case $*(h)ar-$. Whereas several IE verb forms have been analysed as containing this PIE root, the most direct witness for the characteristics of $*(h)ar-$ on which all scholars agree remains at the moment Greek ἀραρίσκω. The main use of this verb (in all its forms) in the Ancient Greek texts can be summarised into three basic points. First and foremost, the verb is used to indicate the action whereby someone (nominative) joins/makes fixed **something (accusative)**, sometimes *to something else (dative)* and possibly *with something (dative)*, see examples (2), (3) and (4) from the *Iliad*. The next two usages indicate the result of the first one. Thus in the intransitive use, something can be fixed or closed, i.e. joined closely to something. See example (5) from the *Iliad* and (6) from *Prometheus vincetus*, when Hephaistos tells Kratos that he already chained one of Prometheus’ arms to a rock. Finally, in the monovalent use, something can be provided/garnished with, or be composed of, **something (dative)**, see example (7).²⁶

- (2) ἀμείβοντες, τούς τε κλυτὸς ἦραρε τέκτων
 ‘Gable-rafters (...), which some famous craftsman joins together’ *Il.* 23.712
- (3) οἱ δ’ ἐπεὶ ἀλλήλους ἄραρον τυκτῆσι βόεσσι
 ‘These then when they had fenced one another with their well-made shields
 of bull’s hide’ *Il.* 12.105

²⁶ All the Greek and Latin text passages as well as their translations in this article are taken over from the corresponding volume of the online Loeb Classical Library, unless stated otherwise.

- (4) **πυκινὰς δὲ θύρας σταθμοῖσιν ἐπῆρσε κληῖδι κρυπτῆι**, τὴν δ' οὐ θεὸς ἄλλος ἀνῶγεν.
 'fitting strong doors to the doorposts with a secret bolt that no other god could open' *Il.* 14.167–8
- (5) καὶ τότε ἐγὼ θαλάμοιο θύρας πυκινῶς ἀραρυίας ῥήξας ἐξῆλθον
 'I burst the closely fitted doors of my chamber' *Il.* 9.475
- (6) Ηφ. “ἄραρεν ἦδε γ' ὠλένη δυσεκλύτως.”
 'Well, this arm is fixed so it can hardly be freed' *Aes. Pr.* 60
- (7) : (...) κρημνοὶ γὰρ ἐπηρεφέες περὶ πᾶσαν ἔστασαν ἀμφοτέρωθεν, ὑπερθεν δὲ **σκολόπεσσιν ὄξεσιν** ἠρήρει, τοὺς ἴστασαν νῆες Ἀχαιῶν (...).
 'for overhanging banks stood all about its circuit on both sides, and at the top it was set with sharp stakes that the sons of the Achaeans had planted' *Il.* 12.54–56

In Mycenaean Greek attestations are only found of the latter use, with active perfect participles or in compound form, e.g. *ka-ka-re-a* (KN R 1815), the equivalent of alphabetic Greek *χαλκήρης*, literally 'joined with bronze'.²⁷ If the Greek situation reflects the PIE one, it has an important consequence. The fact that the verb can be used transitively as well as intransitively, with and without an instrument, etc. means that a wide range of abstracts may have been derived from it: agent nouns, instrument nouns, etc. Moreover, there is the possibility that two *men-* or *mo-* stems may in reality reflect two different abstract nouns (e.g. one agent and one result noun) and thus, even though they are completely homonymous, may not be direct cognates after all. In what follows, first the object noun derivatives of **(h)ar-* will be the focus, and next, the instrument noun derivatives.

5.1 Object nouns

5.1.1 *Arma*

Even though theoretically *arma* could have been a result noun meaning 'the assemblage', an overwhelming amount of Greek data invites us rather to reconstruct an object noun. Indeed, one of the specific and omnipresent uses of the verb *ἀραρίσκω* is in referring to the ability of clothes, armour and weapons to fit the body well. First, there is a specific expression about helmets that fit the head well in the works of both Homer and Hesiod, see e.g. (8). Next, the verb is used to indicate

²⁷ See DMic: 1, 95–96 for all the attestations and further bibliography.

(well-)fitting shoes, see e.g. (9), (10) and (11). Third, it illustrates (war) tools that fit into the hand well, see e.g. (12) and (13).

- (8) κόρυθα κροτάφοις ἀραρυῖαν (and variants)
 ‘a helm fitted to his temples’
 see e.g. *Il.* 13.188, *Il.* 18.611, *Od.* 18.378, *Od.* 22.102, *Hes. Sc.* 137
- (9) αὐτὸς δ’ ἀμφὶ πόδεσσιν εὖοις ἀράρισκε πέδιλα
 ‘But he himself was fitting sandals about his feet’ *Od.* 14.23
- (10) ἀμφὶ δὲ ποσσὶ πέδιλα βοδὸς ἴφι κταμένοιο ἄρμενα δήσασθαι
 ‘Bind around your feet well-fitting boots from the leather of a slaughtered ox’
Hes. Op. 542
- (11) ὁ μὲν ἀμφὶ πόδεσσιν ἐντμήτοισιν ἰμάσι καλοπέδιλ’ ἀράρισκε
 ‘One would fit clogs to his feet with well-cut leather straps’ *Theoc.* 25.103
- (12) εἶλετο δ’ ἄλκιμον ἔγχος, ὃ οἱ παλάμηφιν ἀρήρει
 ‘and he took a valiant spear, that fitted his grasp’ *Il.* 3.338 (= *Od.* 17.4)
- (13) εἶλετο δ’ ἄλκιμα δοῦρε, τὰ οἱ παλάμηφιν ἀρήρει
 ‘and he took two valiant spears that fitted his grasp’ *Il.* 16.139

Even more interesting is the use of the verb ἀρμόζω (a denominative of a *men*-stem!) to express the fitting of armour to the body. Note in particular passage (14) from the third book (3.328–329) of the *Iliad*. In this passage we find a description of Alexander putting on his armour. The act of getting dressed itself is expressed by the verbs τίθημι (ἔθηκε) and δύω (ἐδύσετο/ἔδυνεν). The word ἀρμόζω (ἤρμοσε) is not used as a synonym of these two verbs to indicate the putting on of (the parts of) the armour, but rather to specify the fitting of it to the body. Note that in line 331, the verb ἀραρίσκω (ἀραρυῖας) is used in the sense ‘garnished with’, and in line 338 (ἀρήρει) again for the good fit of a spear (cf. *Od.* 17.4 above). The same expression is found elsewhere in the works of Homer, see e.g. (15) and (16), as well as in later texts. One of the most remarkable ones can be read in book 11 of Polybius’ *Histories* (9.4), namely example (17). This passage concentrates on the importance of the taking care of one’s armour as part of the preparation for war. It consists of a chiasmus: the two substantives τὴν λαμπρότητα and τὴν ἀρμογὴν are repeated in the form of two participles στίλβουσαι and ἀραρυῖαι. Both the derivative of ἀρμόζω and the perfect participle of ἀραρίσκω point to the good fit of the armour.

- (14) αὐτὰρ ὃ γ’ ἀμφ’ ὤμοισιν ἐδύσετο τεύχεα καλὰ
 δίος Ἀλέξανδρος Ἑλένης πόσις ἠῦκόμοιο.
 κνημίδας μὲν πρῶτα περὶ κνήμησιν ἔθηκε
 καλὰς, ἀργυρέοισιν ἐπισφυρίοις ἀραρυῖας·
 δεύτερον αὖ θώρηκα περὶ στήθεσσις ἔδυνεν (330)

οἷο κασιγνήτοιο Λυκάονος· ἤρμοσε δ' αὐτῶ.
 ἀμφὶ δ' ἄρ' ὤμοισιν **βάλετο** ξίφος ἀργυρόηλον
 χάλκεον, αὐτὰρ ἔπειτα σάκος μέγα τε στιβαρόν τε· (335)
 κρατὶ δ' ἐπ' ἰφθίμῳ κυνέην εὖτυκτον **ἔθηκεν**
 ἵππουριν· δεινὸν δὲ λόφος καθύπερθεν ἔνευεν·
εἶλετο δ' ἄλκιμον ἔγχος, ὃ οἱ παλάμηφιν **ἀρήρει**.
 ὡς δ' αὐτῶς Μενέλαος ἀρήϊος ἔντε' **ἔδυνεν**.

'And he put on about his shoulders his beautiful armour, noble Alexander, the husband of fair-haired Helen. The greaves first he set about his legs; beautiful they were, and fitted with silver ankle pieces; next he put on about his chest the corselet of his brother Lycaon, and fitted it to himself. And about his shoulders he cast his silver-studded sword of bronze, and then his shield great and sturdy; and on his mighty head he set a well-made helmet with horse-hair crest—and terribly did the plume nod from above—and he took a valiant spear, that fitted his grasp. And in the same way warlike Menelaus put on his battle gear.'
Il. 3.328–329

- (15) Ἦ καὶ κυανέησιν ἐπ' ὀφρύσι νεῦσε Κρονίων. Ἔκτορι δ' **ἤρμοσε τεύχε' ἐπὶ χροῖ'**
 'the son of Cronos spoke and nodded his dark brows, and on Hector's body he made the armour fit'
Il. 17.210
- (16) πειρήθη δ' ἔο αὐτοῦ ἐν **ἔντεσι** δίος Ἀχιλλεύς, εἰ **οἷ ἔφαρμόσσειε** καὶ ἐντρέχοι ἀγλαὰ γυῖα·
 'And noble Achilles tested himself in his armour to see if it fitted him and if his glorious limbs moved free'.
Il. 19.385
- (17) Μεγάλα μὲν γὰρ ἔφη **τὴν λαμπρότητα** συμβάλλεσθαι πρὸς ἔκπληξιν τῶν ὑπεναντίων, πολλὰ δὲ συνεργεῖν **τὴν** ἐκ τῆς ἐπισκευῆς **ἀρμογὴν τῶν ὄπλων** εἰς τὴν χρεῖαν. (...) διόπερ ἔφη δεῖν τὸν εἰς ἐξοπλισίαν ἢ στρατείαν ἐκπορευόμενον, ὅτε μὲν **τὰς κνημίδας** περιτίθεται, σκοπεῖν ὅπως **ἀραρυαί** τε καὶ **στιλβουσαι** τῶν ὑποδεσμῶν καὶ κρηπίδων ὑπάρχωσιν αὐται μᾶλλον,
 'He said that the great brightness (sc., of the armour) contributes to the consternation of the enemies, and that the good fitting of the armour due to preparation helps very much towards advantage. (...) For this reason he said that it was necessary for marching out to a field-day or expedition that when one puts on one's leggings, one sees that they fit well and shine and that they do so more than one's foot-gear and boots.' (my translation)
Plb. 11.9

All these examples demonstrate the close connection between armour and the well-fittedness of it to the body. This observation leads to a possible semantic

reconstruction of *arma* as being the object of the act of joining closely, or in other words ‘the attachment’. The ending *-a* < **-eh₂* could point to an original collective which indicated the totality of the things attached to the body, namely the armour. The noun *armillae* may give further evidence for such a semantic reconstruction, as well as an indication for the precise suffix reconstruction. Indeed, as jewelry is naturally something that is attached onto the body, *armillae* may have literally been ‘a little attachment’. Maybe because of its close resemblance to the word for ‘arm’ it later on became specialised into ‘armlet’. As *arma* and *armillae* seem semantically linked, we are invited to reconstruct not a *mo-* but a *men-*stem for *arma*.

5.1.2 *Armenta*

This leaves us with the word *armenta*. As mentioned in the first section, the *communis opinio* bases the etymology of *armenta* on the definition ‘herd of ...’. It was pointed out by Nussbaum that such an etymology is unlikely in light of the semantics of the root *(*h*)*ar-*. Certainly, none of the proven and yet to be proven derivatives of the root *(*h*)*ar-* point to this semantics of ‘grouping together’. Even in those Ancient Greek passages where a form of ἀραρίσκω seems to denote ‘grouping together’, the notion of closeness is always present, e.g. *Il.* 16.210–217:

(18) Ὡς εἰπῶν ὄτρυνε μένος καὶ θυμὸν ἐκάστου. (210)

μᾶλλον δὲ στίχες ἄρθεν, ἐπεὶ βασιλῆος ἄκουσαν.

ὡς δ' ὅτε τοῖχον ἀνήρ ἀράρη πυκνιοῖσι λίθοισι

δώματος ὑψηλοῦ βίας ἀνέμων ἀλειίνων,

ὡς ἄραρον κόρυθές τε καὶ ἀσπίδες ὀμφαλόεσσαι.

ἀσπίς ἄρ' ἀσπίδ' ἔρειδε, κόρυς κόρυιν, ἀνέρα δ' ἀνήρ- (215)

ψαῦον δ' ἵππόκομοι κόρυθες λαμπροῖσι φάλοισι

νευόντων, ὡς πυκνοὶ ἐφέστασαν ἀλλήλοισι.

‘So saying, he roused the might and heart of every man, and yet more tightly were their ranks compacted when they heard their king. And as when a man compacts the wall of a high house with close-set stones, to avoid the might of the winds, so close were compacted their helmets and bossed shields; shield pressed on shield, helmet on helmet, and man on man. The horsehair crests on the bright helmet-ridges touched each other, as the men moved their heads, in such close array did they stand by one another.’

Il. 16.210–217

At first it might look as if the forms of ἀραρίσκω in this passage do indeed refer to the idea of ‘grouping together’. However, as is made clear by, on the one hand, the use of other words like πυκ(ι)νός and ἐρείδω, and, on the other hand, the

comparison that is made between bricks and soldiers, the verb refers in the first place to the fact that they stand incredibly close to each other, not to the fact that they stand together as a group. This semantic observation does not stand in the way of the idea that *armenta* may have indicated a group of animals later on, but it does stand in the way of a reconstruction from the root **(h)ar-* with the meaning ‘things grouped together’. This led Nussbaum to the conclusion that the word could not possibly be a derivative of the root **(h)ar-*. However, there may be a different way to derive *armenta* from the root **(h)ar-* and subsequently connect it with *arma* and *armillae*. A closer look at the exact semantics will shed light on this.

The main uses of *armenta* can be summed up as follows: it sometimes indicates bovines and/or horses, sometimes a herd of these animals and sometimes a herd of other animals. At first sight, it looks like it had a wide range of uses depending on the author and even on the specific passage in which it was used. As such it would seem that trying to reconstruct the original sense from which the others are derived via semantic narrowing or widening seems pointless. However, if one analyses its oldest attestations and above all those in the several works on agriculture, a pattern arises.

The noun occurs for the first time in one of the fragmentary plays of Pacuvius (3rd–2nd cent. BC), see (19). Nevertheless, this attestation does not reveal much, except that the *armentas*²⁸ point to pasture animals that may or may not have horns. Next, the word occurs – remarkably – only once in the book on agriculture by Cato (2.7), see (20). All this fragment reveals is that the *boves*, *armenta* and *oves* are all part of the *pecus*, and that the *armenta* here point to a specific kind of animal that is different from the *boves* and the *oves*. Luckily, in the following works on agriculture by Virgil, Varro and Columella, the word is used more often. Interestingly, all three authors align with Cato in the sense that they consider the *armenta* as part of the *pecu*-.²⁹ The latter is to be understood as ‘livestock’, or ‘quadruped farm animals’. To indicate a group (herd/flock ...) of one of the animals belonging to the *pecu*-, the umbrella term *grex* is used. Representative examples can be read in lines 3.51–71 (21) of the *Georgics*, where Virgil sings about cows, and more precisely about the characteristics of a good cow over the course of its life, and in lines 3.286–287 (22), where he ends the section on bovines. See (23)–(27) for examples from Varro and (28)–(30) for some from Columella. Even more, this division is not only omnipresent in treatises on agriculture, but equally in different works by other authors, such as Cicero, see (31) and (32).

28 Note that *armentas* implies here a feminine *armenta* instead of a neuter *armentum*.

29 *Pecu*- will be used to cover the three terms *pecū*, *pecus -oris* and *pecus -udis*.

- (19) *Tu cornifrontes pascere armentas soles.*
 ‘You’re wont to pasture *armentae* horny-browed.’³⁰ Pac. *trag.* 349
- (20) *Pecus consideret. Auctionem uti faciat: vendat oleum, si pretium habeat, vinum, frumentum quod supersit vendat; boves vetulos, armenta delicula, oves deliculas, lanam, pelles, (...).*
 ‘Look over the livestock and hold a sale. Sell your oil, if the price is satisfactory, and sell the surplus of your wine and grain. Sell worn-out oxen, blemished *armenta*, blemished sheep, wool, hides, (...)’ Cato, *Agr.* 2.7
- (21) (...) *optima torvae forma bovis, cui turpe caput, cui plurima cervix, (...) aetas Lucinam iustosque pati hymenaeos desinit ante decem, post quattuor incipit annos; cetera nec feturae habilis nec fortis aratris. interea, superat gregibus dum laeta iuventas, solve mares; mitte in Venerem pecuaria primus, atque aliam ex alia generando suffice prolem. (...) semper enim refice ac, ne post amissa requiras, anteveni et subolem armento sortire quotannis.*
 ‘The best-formed cow is fierce looking, her head ugly, her neck thick, (...) The age to bear motherhood and lawful wedlock ends before the tenth year, and begins after the fourth; the rest of their life is neither fit for breeding nor strong for the plough. Meantime, while lusty youth still abides in the herds, let loose the males; be first to send your cattle to mate, and supply stock after stock by breeding. (...) ever, I pray, renew them, and, lest too late you regret your losses, keep in advance, and year by year choose new stock for the *armentum*.’ Verg. *G.* 3.51–71
- (22) *hoc satis armentis: superat pars altera curae, lanigeros agitare greges hirtasque capellas.*
 ‘Enough this for the *armenta*; there remains the second part of my task, to tend the fleecy flocks and shaggy goats.’ Verg. *G.* 3.286–287
- (23) *Scrofa, Prius, inquit, discernendum, utrum quae serantur in agro, ea sola sint in cultura, an etiam quae inducantur in rura, ut oves et armenta. (...) Quare tota pastio, quae coniungitur a plerisque cum agri cultura, magis ad pastorem quam ad agricolam pertinere videtur. Quocirca principes qui utrique rei praeponuntur vocabulis quoque sunt diversi, quod unus vocatur vilicus, alter magister pecoris.*

“First,” remarked Scrofa, “we should determine whether we are to include under agriculture only things planted, or also other things, such as sheep and *armenta*, which are brought on to the land.” (...) ‘Thus the whole subject

³⁰ In this and the following examples I will leave the noun *armenta* untranslated.

of grazing, which many writers include under agriculture, seems to me to concern the herdsman rather than the farmer. For that reason the persons who are placed in charge of the two occupations have different names, the one being called *vilicus*, and the other *magister pecoris*.' Varro, *R.* 1.2.12–14

- (24) *Nam et qui parat pecus necesse est constituat numerum, quot greges et quantos sit pasturus, ne aut saltus desint aut supersint et ideo fructus dispereant.*
 'For the man who is founding a herd must decide on the size, determining how many herds and how large he is going to graze, so that his pasturage will not run short, and so that he will not have idle pasturage and hence lose his profit.'
 Varro, *R.* 2.1.24
- (25) *Quare dicam, de bubulo pecore quam acceperim scientiam*
 'So I shall give you the advantage of the knowledge I have acquired on the subject of the cattle herd'
 Varro, *R.* 2.5.2
- (26) *Qui gregem armentorum emere vult, observare debet primum, (...)*
 'One who wishes to buy a herd of *armenta* should be careful to'
 Varro, *R.* 2.5.7
- (27) *In alimoniis armenticum pecus sic contuendum*
 'In the matter of rearing, the following rules should be observed with this kind of animal.'
 Varro, *R.* 2.5.16
- (28) *greges armentorum ceterorumque quadrupedum*
 'herds of *armenta* and of other four-footed kind'
 Col. 1.2.5
- (29) *De armentis ceterisque pecudibus et magistris, per quos quadrupedum greges humana solertia domi forisque curantur (...)*
 'I have now, unless I am mistaken, dealt in sufficient detail with *armenta* and other cattle and with the herdsmen who are employed to look after and watch over flocks of four-footed animals at home and out of doors'
 Col. 7.12.1
- (30) *Tertium locum obtinet pecudum stercus atque in eo quoque discrimen est; nam optimum existimatur, quod asinus facit, quia id animal lentissime mandit ideoque facilius concoquit et bene confectum atque idoneum protinus arvo fimum reddit. Post haec, quae diximus, ovillum et ab hoc caprinum est, mox ceterorum iumentorum armentorumque. Deterrimum ex omnibus suillum habetur.*
 'The dung of cattle holds third place, and in this too there is a difference; for what the ass produces is considered best, because that animal chews very slowly and for that reason digests his food more easily, and he gives in return a manure that is well prepared and ready for the field immediately. After those that we have mentioned comes sheep dung, next is goat dung,

and then that of other *armenta* and draught-animals. The dung of swine is considered the poorest of all.’ Col. 2.15.4–5

- (31) *‘quid ergo’ inquis ‘acturus es?’ idem quod pecudes, quae dispulsae sui generis sequuntur greges;*
 ‘What am I going to do then? What stray cattle do when they follow droves of their own species’ Cic. Att. 7.77
- (32) *caedit greges armentorum reliquique pecoris quodcumque nactus est.*
 ‘He slaughters herds of *armenta* and other animals, whatever comes his way.’ Cic. Phil. 3.31

These data, strengthened by the fact that nowhere in the work of Varro does the lexeme *armenta* signify ‘a herd’, confirm the theory that the meaning of ‘herd’ was not the original one. There is even a second pattern: both Varro and Columella divided the *pecu-* into the *maiores* and the *minores*. The former indicate the bovines and horses, the latter the pigs/swine, sheep and goats.³¹ If we combine these data, the following scheme appears:

³¹ Varro also considers the ass a big animal, whereas Columella considers it a small one, even though he categorises mules within the big animal category. Varro, *R.* 2.1.12: *Ea partes habet novem, discretas ter ternas, ut sit una de minoribus pecudibus, cuius genera tria, oves capra sus, altera de pecore maiore, in quo sunt item ad tres species natura discreti, boves asini equi. Tertia pars est in pecuaria quae non parantur, ut ex iis capiatur fructus, sed propter eam aut ex ea sunt, muli canes pastores* ‘The science embraces nine divisions under three topics of three divisions each: the topic of the smaller animals, with its three divisions, sheep, goats, swine; the second topic, that of the larger animals, with likewise its three classes naturally separate, oxen, asses, horses. The third topic comprises animals which are kept not for the profit derived from them, but for the purpose of the above groups, or as a result of them, mules, dogs, and herdsmen.’ After Columella ends the parts on bovines, horses and mules, he starts the chapters on asses, sheep and goats as follows: (7.1.1): *De minore pecore dicturis, P. Silvine, principium tenebit minor in ora Arcadiae vilis hic vulgarisque asellus, (...)* ‘Since, Publius Silvinus, we are now about to deal with the lesser farm-animals, our first subject shall be that cheap and common animal the lesser ass’. This division is maintained throughout his entire work, cf. (2.17.6–7): *Propter quod ne pecora quidem oportet teneris adhuc et subsidentibus pratis immittere, sed quotiens herba prosilierit, falcibus desecare; nam pecudes, ut ante iam dixi, molli solo infigunt ungulas atque interruptas non sinunt herbarum radices serpere et condensari. Altero tamen anno minora pecora post faenisicia permittemus admitti, si modo siccitas et conditio loci patietur. Tertio deinde cum pratum solidius ac durius erit, poterit etiam maiores recipere pecudes.* ‘It is for this reason that one should not even turn his herds into meadows that are still soft and settling, but should cut the grass with sickles whenever it shoots up; for, as I have said before, cattle plant their hoofs in the soft ground and, cutting off the grass roots, do not allow them to spread and form a dense growth. In the second year, however, we shall allow the smaller animals to be turned in after the haymaking, if only dry weather and the condition of the ground will permit it. Then in the third year, when the meadow is quite solid and firm, it will be in condition to receive even the larger cattle.’

- A. *Grex* (herd/flock ...)
- > B. *pecu-* (= livestock; quadrupeds on the farm)
 - > C.1) *minores* (sheep *et al.*)
 - > C.2) *maiores* (bovines, horses *et al.*; *armenta*)

Judging from the examples above and many other passages, this scheme may represent the original distribution of *grex*, *pecu-* and *armenta*, the latter belonging to C2. Depending on the author and his style, the *armenta* could undergo two semantic changes. First, the *armenta* could take over the function of *grex*, in the first place to denote herds of animals in C2: bovines and horses. When the lexeme *armenta* is used as such, the word *grex* itself, not needed anymore to denote any kind of group, becomes specialised to mean flocks (of sheep), see e.g. (33)–(36). Secondly, *armenta* could point to some or all the animals in group C2 and as such take over the semantics of *pecudes maiores*. In this case the term *pecu-*, like the term *grex* in the former example, becomes specialised for the small livestock and is often used as a synonym for sheep, see e.g. (37) and (38).

- (33) *Nec ea tamen simplex, quippe aliud exigit equinum atque aliud bubulum armentum, aliud pecus ovillum*

‘And yet even this is not of one pattern; for an *armentum* of horses requires one kind of management; an *armentum* of cattle another; a flock of sheep still another,’
Col. 1.praef.26

- (34) *mille greges illi totidemque armenta per herbas errabant*

‘A thousand flocks he had, and as many *armenta*, wandering at will over the grassy plains,’
Ov. Met. 4.635

- (35) *multi greges ovium, multa ibi equorum boum armenta*

‘where there are many flocks of sheep and *armenta* of horses and cattle’
Plin. Ep. 2.17.3

- (36) *qui fuit Ausoniisque olim ditissimus arvis: quinque greges illi balantum, quina redibant armenta, et terram centum vertebat aratris.*

‘he who was (...) once wealthiest in Ausonia’s fields; for him five flocks bleated, five *armenta* came back from pasture, and a hundred ploughs turned the soil.’³²
Verg. A. 7.537–9

³² Once it could express ‘a herd’, certain authors used it freely to indicate any group of (four-footed) animals. Virgil, in particular, seems to have done so widely, e.g. A. 1.184–6: (...) *tris litore cervos prospicit errantis; hos tota armenta sequuntur a tergo et longum per vallis pascitur agmen*. ‘he descries three stags straying on the shore; whole *armenta* follow behind these and in long line graze down the valley.’

- (37) *Luitur enim etiam homicidium certo armentorum ac pecorum numero recipitque satisfactionem universa domus, utiliter in publicum*
 ‘even homicide is atoned for by a fixed number of *armenta* and sheep, and the whole family thereby receives satisfaction, to the public advantage,’
 Tac. Ger. 21
- (38) *Nec ratione alia volucres, armenta, feraeque, et pecudes, et equae maribus subsidere possent*
 ‘Nor otherwise could birds or *armenta*, wild beasts or sheep or mares submit to the male’³³
 Lucr. 4.1197

What is left now is to denote what the exact function of the *armenta* could have been in C2, the big animals. The answer may have been literally given by Columella. This author made a second division within the livestock animals, namely those that help humans with labor, and those that give them profit, see (39). The former category is further divided into the *armenta*, or the plough animals: the asses, the horses and the bovine animals, and the *iumenta*, or the draught animals, see (40). As such, the word *armenta* applies not only to bovines, but equally to horses and asses. This idea is repeated throughout the whole work, despite the fact that Columella also uses *armenta* to indicate a herd of bovines or horses, or cattle both in paragraphs on ploughing as well as on pasturing.

- (39) *Igitur cum sint duo genera quadrupedum, quorum alterum paramus in consortium operum, sicut bovem, mulam, equum, asinum; alterum voluptatis ac reditus et custodiae causa, ut ovem, capellam, suem, canem (...)*
 ‘There are, then, two classes of four-footed animals, one of which we procure to share our labours, such as the ox, the mule, the horse and the ass, and the other which we keep for our pleasure and the profit which they bring us or for keeping watch, such as the sheep, the goat, the pig and the dog.’
 Col. 6.praef.6
- (40) *Nec tamen ulla regio est, in qua modo frumenta gignantur, quae non ut hominum ita armentorum adiutorio colatur. Unde etiam iumenta et armenta*

³³ Note in particular the difference with Lucretius 1.161–4, where the *armenta* are part of the *pecu*: (...)*e mare primum homines, e terra posset oriri squamigerum genus et volucres erumpere caelo; armenta atque aliae pecudes, genus omne ferarum, incerto partu culta ac deserta tenerent*; ‘Firstly, men could arise from the sea, from the earth scaly tribes, and birds could hatch from the sky; *armenta* and other farm animals and every kind of wild creature would fill desert and cultivated land alike, with no certainty as to birth’.

*nomina a re traxere, quod nostrum laborem, vel onera subvectando vel arando iuvarent.*³⁴

‘Nor indeed is there any region in which nothing but cereals is grown and which is not cultivated quite as much by the aid of cattle as of men. Hence also draught-animals (*iumenta*) and animals which draw the plough (*armenta*) derive their names from the fact that they aid our labour either by carrying burdens or by ploughing.’ Col. 4.praef.3

Next, it seems at first sight that Varro, an earlier author, used the lexeme in the opposite sense in the praefatio of part 2, see (41). Indeed, he used the singular *armentum* as the opposite of *bos domitus* and the *armentarius* of the *bubulcus*. This gives the impression that *armentum* points explicitly and only to non-domesticated bovines that are not used to plough. However, in another paragraph *armenta* includes both the domesticated and non-domesticated bovines. As such, in the lines following the above-mentioned passage 2.5.7 (ex. 26) about the buying of cattle (*gregem armentorum*), Varro gives a large description of the ideal bovine and includes both the *bos domitus* and *indomitus*. In addition to this, Varro derives the noun *armenta* from *arāre* ‘to plough’ in his work *De Lingua Latina*.

(41) *Itaque in qua terra culturam agri docuerunt pastores progeniem suam, qui condiderunt urbem, ibi contra progenies eorum propter avaritiam contra leges ex segetibus fecit prata, ignorantes non idem esse agri culturam et pastionem. Alius enim opilio et arator. nec, si possunt in agro pasci armenta, armentarius non aliut ac bubulcus. Armentum enim id quod in agro natum non creat, sed tollit dentibus; contra bos domitus causa fit ut commodius nascatur frumentum in segete et pabulum in novali.*

‘And so, in a land where the shepherds who founded the city taught their offspring the cultivation of the earth, there, on the contrary, their descendants, from greed and in the face of the laws, have made pastures out of grain lands—not knowing that agriculture and grazing are not the same thing. For the shepherd is one thing and the ploughman another; and it does not follow that because *armenta* can graze in a field the herdsman (*armentarius*) is the same as the ploughman. For *armentum* do(es) not produce what grows on the land, but tear(s) it off with their teeth; while on the other hand the domestic ox becomes the cause why the grain grows more easily in the ploughed land, and the fodder in the fallow land.’ Varro, *R. 2.praef.4–5*

³⁴ As is indicated in the Loeb (p. 121, note a), the author derives *iumentum* from *iuvāre* ‘to aid’ and not from *iugum*.

- (42) *Eos cum emimus domitos, stipulamur sic: ‘illosce boves sanos esse noxisque praestari’; cum emimus indomitos, sic: ‘illosce iuencos sanos recte deque pecore sano esse noxisque praestari spondesne?’*

‘In the purchase of oxen which have been broken in, the bargain is in these terms: “Do you guarantee that the said oxen are sound, and that I am protected from suits for damage?” In buying them unbroken, the formula runs: “Do you guarantee that the said bullocks are quite sound and of a sound herd, and that I am protected from suits for damage?”’

Varro, *R.* 2.5.10–11

- (43) *Armenta, quod boves ideo maxime parabant, ut inde eligerent ad arandum; inde arimenta dicta, postea I tertia littera extrita.*

‘*Armenta* ‘plough-oxen,’ because they raised oxen especially that they might select some of them for *arandum* ‘ploughing’; thence they were called *arimenta*, from which the third letter I was afterwards squeezed out.’

Varro, *R.* 5.96

Consequently, it can be concluded that Varro, unlike Columella, did not employ a cover term for plough animals, and used *armenta* solely to indicate ‘cattle’, both for ploughing and for pasturing. Cattle in their capacity as ploughing bovines lies, according to him, at the core of the stem. The question, however, that should be asked is whether the definition and use of *armenta* in the works of Varro and Columella represent the ancient and original meaning of the word, or rather a synchronic one, based on the link they made with the look-alike stem of *arāre*. Indeed such synchronic etymologisations were rather popular in Latin works, and even another synchronic association for the word *armenta* was popular in Latin poetry, namely the one between *armenta* and *arma*. This play on words can easily be found in several passages in Virgil, see e.g. (44), and the connection that was taken seriously by Servius in his commentary on the very lines of example (44), see (45).³⁵

- (44) *bello armantur equi, bellum haec armenta minantur. sed tamen idem olim curru succedere sueti quadripedes et frena iugo concordia ferre: (...).*

‘for war are horses armed, war these *armenta* portend. But yet, he cries, those same steeds at times are wont to come under the chariot and beneath the yoke to bear the bit in concord’

Verg. *A.* 3.540–542

³⁵ The same word play was probably recycled by Statius, e.g. *Theb.* 4.818–20: *frenata suis in curribus inrant armenta, et pleni dominis armisque feruntur quadripedes* ‘Bridled horses enter in their chariots, chargers full of riders and arms are swept along.’

(45) *armenta dicta sunt quasi apta armis: nam et equi intersunt proeliis, boves arma dant ex coriis.*

‘the *armenta* are called like that, as they are fit for arms: because horses are useful for battles and bovines provide arms with their skin.’ (my translation)

Servius A. 3.540

However, the reasoning may be turned around. Servius could probably only have made such a statement if the *armenta* consisted of horses and bovines, which may indeed be used for war. In the same way, Varro and Columella would most likely not have made a connection between *armenta* and *arāre* if some of the *armenta* could not have been used for ploughing. Even if the lexeme *armenta* was in reality not used to denote specifically plough animals, it must have at least stood for ‘bovines; cattle’. In conclusion, the etymology of *armenta* must, most likely, depart from a specific bovine characteristic.

Although this broad semantic reconstruction does not seem to match the semantic sphere of **(h)ar-*, *arma* or *armillae*, the aforementioned Slavic nouns for ‘yoke’ may help to shed light on the issue. Although one could easily interpret a yoke as being an agent/instrument noun, i.e. the thing that yokes other things together, one can also see how it could be an object: the thing that is being attached onto something (an animal). In other words, the stem **(h)armen-* ‘the attachment’ developed on the one hand into the close attachment of clothes/armour onto the human body and on the other hand into the attachment of a yoke onto an animal’s body. A fitting example showing the importance of the closeness of the yoke can be found, among others, in the work of Columella:

(46) *Igitur in opere boves arte iunctos habere convenit, quo speciosius ingrediantur sublimes et elatis capitibus ac minus colla eorum labefactentur iugumque melius aptum cervicibus insidat. Hoc enim genus iuncturae maxime probatum est.*

‘To proceed then, it is proper to have oxen closely yoked while at work, so that they will move with a more stately gait, with lofty bearing and heads held high; also that their necks may be galled less, and that the yoke may sit more closely on their shoulders. This method of yoking is most approved’

Col. 2.2.22

Notice that the word *arte* is a derivative of **(h)ar-*. If one combines this morphosemantic reconstruction with the abovementioned semantic reconstruction of the *armenta* as referring originally to plough animals, one arrives at the following reconstruction: **(h)ar-mŋ-to-* ‘belonging to the attachment’. It would be another example of a denominative possessive adjective formed by the suffix **-to-* (cf. *honor* → *honestus*). The substantive was formed by adding a third, individualising suffix

*-eh₂-: *(h)ar-m̃₁-teh₂- ‘the one belonging to the attachment’ > Latin *armenta*. To make matters even more convincing, the Slavic stem **jarьmo-* had itself a further derivative in both Old Russian and OCS *jarьmьničь*, meaning ‘cattle, walking under the yoke’.³⁶ One can easily see how ‘plough-animal’ developed into ‘any kind of bovine’ and further into ‘cattle’. The latter development was probably reinforced by the fact that some authors interpreted the Latin ending *-a* as a feminine singular and others as a neuter plural. The question as to how much Varro’s and Columella’s etymology of *armenta* as ‘the plough animals’ is based on the real use of the word in their time, which may be a continuation of the original use, rather than on a synchronic link with *arāre*, will remain open.

For the sake of completeness, however, I would like to add that due to the wide semantic range of *armenta* and the many possibilities of its phonetic reconstruction, any other previously mentioned etymology for *armenta*, with the exception of the one followed by the *communis opinio*, could be correct. As such, Nussbaum’s counterarguments against a derivation from the root **h₂erh₃-* (see section 1) can easily be swept away: 1) the *armenta* could have been plough animals; and 2) a verb ‘to plough’ that can be used both in an intransitive and in a transitive sense and both with and without an instrument noun may have developed separate *men*-stems with different meanings. Admittedly, the fact that this stem would have no direct cognates in Latin nor in any other IE language makes the theory less appealing. Next, there is no a priori reason not to derive the Latin and Germanic stems, like Old Norse *jǫrmuni* ‘ox, horse’, from a totally different root **h₁er(h_x)-* ‘to be big; large’, after which the *men*-stem in both Latin and Germanic developed semantically, either independently or not, into ‘big animals’. Indeed, the zero grade of a *seṭ*-root would result in **ara-* if the first syllable was accented and subsequently **ar-* after syncope (cf. note 15). In the Germanic languages the laryngeal would have been lost without a trace. Even more, further evidence for this second root laryngeal may be found in the following Slavic stems: OCS *raměnbь* ‘powerful’, Old Russian *ramjanь* and Slovenian *rámeno* ‘huge’. The fact that the Russian word starts with *ra-* and not *ro-* may indicate that the *a* was originally long, probably due to a following laryngeal. These Slavic words had already been added as cognates to

³⁶ It should be mentioned that the equation between the Slavic stem and *armenta* was, remarkably, already more or less made by Skok (1971–1974: 1, 757), who translated Serbo-Croatian *járam* as ‘attaching, attachment’ and compared it to Latin *armentum*. He did not, however, go into morphological details. Haudry wrote in his article on *men*-stems (Haudry 1971: 122) the following on *armenta*: “Lat. *armentum* semble designer le troupeau de gros bétail comme ‘attaché’ ou peut-être ‘parqué’; on a un type de désignation similaire dans lit. *bandà* ‘troupeau’ de la rac. **bhendh-*.” It is not clear to me whether he considers ‘troupeau’ (herd) or rather ‘attaché’ (attached) as the point of departure for the semantic reconstruction.

the Germanic and sometimes even to the Latin stem, but without further analysis.³⁷ Such a hypothesis, however, requires much more research as the abovementioned connections raise many questions about the exact root (**h₁er-* + *-*h_x-* vs. **h₁erh_x-*) and suffixes (**-men-* vs. **-mo-*, vs. *-mh₁n-*).³⁸ Finally, there is no direct counterargument against Nussbaum's theory, except maybe that the semantic reconstruction of 'living thing; livestock' is rather broad, and therefore also less attractive.³⁹ In sum, even though different etymologies can be advanced for *armenta*, the most plausible one at this moment is **(h)ar-m₁teh₂-*. Moreover, this reconstruction has the advantage that it can be supported by the Latin texts, as well as by the other Latin and Slavic *men*-stems.

5.2 Instrument noun

Next to object noun derivatives, the root **(h)ar-* is the departure point for a large range of instrumental derivatives. These instrument nouns, indicating the idea that they link two or more things, can be divided into three semantic spheres: 1) body-joints (e.g. Latin *artus*, Greek ἄρθρον, ἄρμός); 2) joints for crafting (e.g. ἄρμονία; ἄρμός); 3) figurative joiners, cf. friendship, agreement, etc. (cf. ἄρμονία, ἄρμός). Latin *armus et al.* belong without any doubt to the first category of instrument nouns. Note that even though ἄρμός and ἄρμονία indicate that those categories were not exclusive, Latin *armus et al.* remarkably only belong to one. Despite the fact that we were able to reconstruct for *armus* a second laryngeal and a *mo*-stem, and to recognise it is an instrument noun, its exact semantic reconstruction remains tentative. Whereas both *artus* and ἄρθρον are not confined to one specific body-joint, but to any joint, or even limbs, the stem of *armus* is most often translated as 'shoulder; arm'. However, a closer look at the other IE stems reveals that such a semantic reconstruction should not be taken for granted. Indeed, the Vedic and

³⁷ The possible connection between the Slavic and Germanic words is discussed in EWAhd: 5, 175–176 where, remarkably, the same Russian word is advanced as an argument *against* a second root laryngeal. The overview ends with the conclusion that Vaillant's proposed connection with the words for 'shoulder, arm' (see note 19) is the most plausible. Note that none of the Germanic or Slavic words are included in the Leiden etymological dictionaries.

³⁸ See EWAhd: 5, 171–177 for a large discussion (and previous bibliography) on the root and suffixes, as well as on other possible IE cognates.

³⁹ Remarkably, Nussbaum had given a second counterargument against the common reconstruction, saying that the semantic development of 'a herd' to '(single) head of livestock' (a sense that is attested in several Latin authors) is unlikely. However, I fail to understand why this argument would apply more to this common reconstruction than his own starting-point 'having the breath of life'.

Latvian derivatives do not mean ‘shoulder’, but ‘legs’, and, more remarkably, figure in the Lithuanian compounds for ‘gout, arthritis’ and ‘joints’.⁴⁰ This raises the question whether the stem of *armus et al.* referred only to the shoulder already before the PIE split, or rather meant ‘body joint’ and only later on ‘shoulder’ after semantic narrowing took place in most languages.⁴¹ Alternatively, one could argue that the original meaning was ‘shoulder’, after which it became ‘arm’ and then ‘leg’, and that in the two Lithuanian compounds the shoulder-joint is meant as a *pars pro toto* for all the joints. Nevertheless, we could even go a step further, and not only advance the idea that the stem of *armus* meant ‘a (shoulder) joint’ rather than ‘shoulder’, but also the action of ‘joining’. As a matter of fact, there are two considerations that could point to the reconstruction of an adjective rather than a substantive.

First, it may explain why the stems show different ablaut grades. Indeed, whereas a zero-grade stem must be reconstructed for the Vedic and Baltic data, at least the Germanic and Slavic data point to an *e-* or *o-*grade. Note, however, that if the lex Saussure-Hirt was already active in PIE, it would be impossible to reconstruct an *o-*grade for the Slavic forms in which we find traces of a second laryngeal. In that case there would be an ablaut pattern zero-/*e-*grade.⁴² As there is at this point no consensus yet on when this law took place, we cannot in principle exclude with certainty the reconstruction of an *o-*grade. This change of ablaut may have been provoked by an accent-change. Thus a collective often shows a different accent than the (thematic) noun it belonged to (see e.g. Vine 2002: 342). Alternatively, this change may have been caused by a change from adjective to substantive, cf. **ǵnh₁-tó-* ‘born’ → **ǵénh₁-to-* ‘the born one; child’. However, there may be two other hypothetical causes for these ablaut differences. First, the divergence may be due to a rare thematic ablaut. In fact, both Schaffner (2001: 100–101) and Höfler (2018: 141–142; 2020: 127) mention the possibility of ablaut in thematic stems and forward the stem for ‘arm; shoulder’ as an example. Schaffner does not go into details, but Höfler suggests that the dual form, which is mostly found in body parts, might have shown a different ablaut than the non-dual forms. Since the *mo-*stem is probably not a secondary derivative of a *men-*stem, the ablaut may indeed be connected to the thematic stem. It certainly does seem appealing to differentiate the zero-grade Vedic dual stem from the possible *e-*grade Avestan

40 Note the correspondence between Lithuanian *irm-liga* and Greek ἀρθρίτις νοῦσος (corpus Hippocraticum), both meaning ‘gout’.

41 Such a semantic reconstruction is not new, see section 1.

42 Note that the laryngeal would most probably also have been dropped if van Beek’s revision of the law to -VLHNV- > -VLNV- is correct. For arguments that the Saussure-Hirt law was not a PIE law, but a law limited to some languages, like Greek, see Pronk 2011b.

singular stem. However, the ablaut of the Avestan stem is not certain. A third and final option is that ablaut analogy between the stem for ‘arm, shoulder’ and another semantically close one might have taken place. Be that as it may, it does not seem attractive to assume that this happened to half of the attestations. Moreover, it is rather unclear which words/stems could have caused such an analogy. In conclusion, both a difference in ablaut grades due to a change from adjective to substantive and one due to a change from dual to non-dual seem possible at this point.

Nonetheless, a second argument in favour of an adjective may come from the fact that the grammatical genders of the IE stems are divergent. The Germanic, Latin and Indo-Iranian data imply a masculine *mo*-stem, whereas the Balto-Slavic languages together point to another feminine *mā*-stem and at least the Slavic languages to a neuter *mo*-stem.⁴³ There are in theory three, possibly related, options: 1) there is a link between the gender and the meaning of the words; 2) some paradigms arose by confusion due to the fact that they have one or more endings in common with another paradigm; 3) the words go back to a PIE *mo*-adjective that was substantivised into different genders in the different languages. Option 1 does not seem to be applicable here. The second option, however, has been advanced by Vaillant (1958: 214), who argues that the dual nom./acc. of the neuter *o*-stem of *ramo*, i.e. *ramě*, became interpreted as a dual nom./acc. of a feminine *ā*-stem. As a consequence a new nominative sg. *ramā* was built. It should be added that there are also other case-endings in common between the neuter *o*-stem and the feminine *ā*-stem: thus, the gen. sg. and the nom./acc. pl. of the neuter *o*-stem equals the nom. sg. of the feminine *ā*-stem. The same logic for the Old-Slovenian form would be valid. But even though one or more paradigms may possibly be explained as such, it remains far from certain that every difference can be clarified that way. Consequently, the option of a *mo*-adjective seems more plausible. This result, combined with the fact that such an adjective was also one of the explanations for the ablaut divergence, invites us to reconstruct a PIE *mo*-adjective, meaning ‘joining’ and consequently ‘(shoulder) joint’.

⁴³ See note 8 for the explanation on the dubious Old Prussian data. Since Latvian would have changed most of its neuter words into masculine ones (see e.g. Petit 2010: 183–185), it is equally possible theoretically to reconstruct a neuter proto-form.

6 The Greek data

Even though the focus of this article is on the Latin words starting with /*arm*/, most of the same stems from other languages have been included (especially the Slavic ones) in order to create a fuller picture and thus a more correct etymology. One may therefore wonder why I omitted on purpose Greek nouns seemingly sharing the same stem, namely ἄρμα and ἄρμός. The reason is twofold: 1) it is uncertain whether the words are direct cognates of the other IE *men*- and *mo*- stems; and 2) even if they are related, they would probably not change the conclusions obtained above. To begin with, as the verbal root **(h)ar-* is still present as a verbal root in ἀραρίσκω, there is no way to exclude with certainty the possibility that the nouns were formed within Greek rather than being PIE derivatives. Furthermore, according to the *communis opinio* the initial aspiration points to the suffix **-smen-* and **-smo-*. This raises the question whether we can equate the Greek suffixes to the other IE suffixes without further ado. Of course there is a possibility that the /*s*/ or even the initial aspiration is simply a specific Greek innovation via analogy to another semantically/syntactically close noun, or some specific pronunciation development. Note for example that several disyllabic words containing the sequence /*ɪm*/ show a spiritus asper (cf. ὀρμή, ὄρμος, ἔρμα). In that case the Greek and other IE stems could be equated. Alternatively however, the /*s*/ is a primary suffix **(e/o)s-* to which a secondary suffix **-men-* was added.⁴⁴ Such a derivational process seems to have been fairly common in (P)IE, e.g. **wét-os* ‘year’ + **-ó-* → **wet-s-o-* ‘being one year old’ > Vedic *vatsá-* ‘calf’.⁴⁵ It should be added, however, that it would be rather odd that Greek did not inherit even one *m^o*-stem from PIE, nor derived one later on from the root of ἀραρίσκω. Another solution could be that both an *m^o*-stem and an *s*-stem existed synchronically next to each other, after which some contamination took place, resulting in a suffix **-sm^o*.⁴⁶ In the case of ἄρμός it does not seem to matter that much in the end, as we would expect in any case a visible relic of the second laryngeal if the word were related to the other IE words for ‘shoulder’ – unless Byrd (2015: 107) is wrong in stating that the lex

⁴⁴ Such an *s*-stem may be present in e.g. the Avestan adverb *ərəš*, young Avestan *arš* ‘right, true’, Greek τὸ ἄρος ‘use, profit, help’, Umbrian *arsmor*, *arsie et al.* ‘?’; see e.g. Muller 1926: 43–44 and LIPP: 290. However, definitive proof of the derivation of these three words from the root **(h)ar-* is still missing. I hope to clear up their etymologies in a future article.

⁴⁵ It should be added, however, that the combination of a zero grade *(e/o)s-* + *men*-suffix seems less plausible than a zero grade *(e/o)s-* + *(C)ó-*suffix. Possible examples like *lūmen* may show epenthesis rather than two suffixes, or analogy to a parallel *(C)ó-*formation, like *lūna*. One could argue that the latter development also took place between ἄρμός and ἄρμα.

⁴⁶ This option was suggested to me by prof. Pinault (by mail).

Schmidt-Hackstein⁴⁷ did not apply in the sequence -RH.CC-. If, after all this, the word ἄρμός is related to *armus et al.*, there would be two major consequences.⁴⁸ First, given that it means in the first place a ‘carpenter’s joint’ and only in rare cases ‘shoulder joint’ (as in the *Hippiatrica Berolinensia*, e.g. 52, 20, 1), it would furnish further evidence for the idea that the original meaning of the stem did not mean just ‘shoulder’, but rather ‘joining; joint’. Secondly, given the place of the accent on the final syllable, we would be invited to reconstruct a root zero-grade and consequently be obliged, following Rix’ law, to reconstruct $*h_2$ instead of $*h_1$: $*h_2r-mó-$ > $*armó-$ but $*h_1r-mó-$ > $*ermó-$.

Finally, if ἄρμα contained only the simplex suffix $*-men-$, we would still be groping in the dark concerning its exact semantics and relationship with *armenta et al.* Since Lejeune 1967: 285 and Ruijgh 1976: 177–179 it has been generally accepted that ἄρμα originally referred to spoked wheels and literally meant ‘the thing joined together’.⁴⁹ This raises the question whether we could equate a clear resultative noun ‘the result of the things that are joined together’ → ‘wheel’ with the objective nouns ‘the thing that is being attached to something else’ → ‘yoke’, ‘armour’ etc., or rather should reconstruct two homonymous but different *men*-stems from the same root. Alternatively, maybe the stem $*(h)ar-men-$ in PIE could have signified both the result and the object at the same time. There is a third option, namely that ἄρμα is indeed a direct derivative of the *men*-stem denoting the object of the attachment and that the wheel indicated originally not necessarily a spoked wheel, but just a wheel with the main characteristic that it is the thing that is being detached and attached from/to the body of the chariot when being put away and brought out again.⁵⁰ It should be added that there is even a possibility that ἄρμα originally meant ‘the attachment’ but was later interpreted due to e.g. the synchronic existence of the verb ἄραρισκω as ‘the spoked wheel’.

47 $*-CH.CC-$ > $*-C.CC-$, see Schmidt 1973 and Hackstein 2002. Even though in the last decades several refinements of the law have been advanced, its precise chronology and distribution remain a matter of dispute.

48 Note that its locative, ἄρμοι, was grammaticalised as an adverb meaning ‘recently; immediately; a little’ which we find from Pindar on, but not in Homer.

49 Lejeune interprets the Greek word as ‘un assemblage’, Ruijgh as ‘le produit de l’ajustement des pièces de la jante, des rayons et du moyeu’; ‘roue à rayons’, par opposition à κύκλος ‘roue’. This reconstruction is based on the fact that the Mycenaean version of the word occurs with the ideogram *243 (ROTA), a spoked wheel.

50 Proof that the wheels were detached and attached from and to the chariot body can already be found in the Mycenaean tablets where a different ideogram is used for chariot frames with and without wheels (*240 BIGAE vs. *241 CURRUS). See Plath 1994 for an overview of the chariot parts.

7 Conclusion

In this article the exact reconstruction of four Latin nouns starting with /arm/, namely *armus*, *arma*, *armillae* and *armenta*, has been analysed. As shown in section 1, the etymology of these words has either been the centre of controversy (*armenta* and *armus*) or neglected (*arma* and *armillae*). A key component lacking in all of the previous scholarly reflections was the putting together of these four words with other possible IE cognate stems. Thus the study continued with an overview of the most important lexemes in part 2. In the following two parts two specific morphophonological elements were the centre of attention: first of all, the possible existence of a secondary root laryngeal which Vedic *irmá-*, Lithuanian *irmo-* *et al.* and Serbo-Croatian *ràme et al.* seem to suggest; and secondly the question whether the *mo*-stems indicate an underlying *men*-stem. This examination resulted in a clear division between the words for ‘shoulder, arm’ (cf. *armus*) at the one hand, and *armillae*, *armamentum* and OCS *jarьmь et al.* on the other. This was not only because the former point to a second laryngeal, but also because they go back to a PIE *mo*-stem, unlike the second group, which originates from a *men*-stem. The middle laryngeal is best explained either as a primary suffix in the zero grade or as the result of a contamination with the noun **p̥h₂-meh₂* ‘palm, hand’. Then, part 3 was dedicated to a morphosemantic analysis. A short overview of the use of ἀραρίσκω showed first that its polyvalency appears to indicate that **(h)ar-* gave room for a wide range of derivatives, and secondly that the central semantics of the PIE root consists of the idea of joining things closely into/onto one another, or, in consequence, attaching things perfectly. In the subsequent subsections first the object nouns were examined, and next the instrument nouns. The frequent use of ἀραρίσκω and ἀρμόζω to denote the close fit of armour onto the body led to the consideration of *armillae* and *arma* as direct cognates and the reconstruction of a *men*-stem ‘the attachment’. Next, the wide semantic range of *armenta* together with its various possible phonological reconstructions resulted in no less than four potential etymologies. However, a thorough investigation into the use of the noun in ancient Latin texts revealed that the word originally denoted a certain kind of livestock animal (*pecu-*), most likely a plough animal (bovine, horse), or a bovine animal in general that might or might not be used in agriculture. The meaning ‘herd’ or ‘big livestock animal’ is most probably secondary and more recent. This, together with both the other Latin *men*-stems and the Slavic ones meaning ‘yoke’, suggests that ‘the ones belonging to the attachment (= the yoke)’ is the most plausible reconstruction for the *armenta*. The last word, *armus*, is an instrument noun. The divergent semantics of the IE cognates as well as their different grammatical genders and various ablaut-grades lead to the reconstruction

of a PIE *mo*-adjective ‘joining’, whose substantivisation went along with a change in accent and ablaut. The result is that the nouns for ‘arm; shoulder’ cannot be used as evidence of a rare thematic ablaut. Finally, in the sixth and last part of the article, it is argued that the Greek *m*^o-stems cannot be securely connected to other IE *men*- or *mo*-stems. Nevertheless, it is shown that if the word for wheel (Myc. *a-mo*; τὸ ἄρμα) reflects a direct *men*-derivative of **(h)ar-*, it would most likely be a direct cognate of the other *men*-stems. In other words, the Greek noun would be the semantic result of the indication of the attaching of the wheels onto the body of the chariot, rather than of the spoked, put-together wheel.

In conclusion, the results can be schematised as follows:

- *(h)ṛ-h₂-mó-* ‘joining’ > ‘joint; body member’
 - > Vedic *īrmá-* ‘legs’
 - > Baltic **īrmV-* ‘joint; body member’
 - > (?) *rāmus*
 - > (?) ἄρμός ‘joint’ (whence evidence for the reconstruction **h₂er-*)
- (substantivisation) **(h)ár-h₂-mo-* ‘(shoulder-)joint’
 - > *armus* ‘shoulder’
 - > Germanic **arma-* ‘arm’
 - > Slavic **ārmV-* ‘shoulder’
- *(h)ar-men-*, **(h)ar-mn-* ‘the attachment’
 - > (?) τὸ ἄρμα, τὰ ἄρματα/τὸ ἄρμο, τὰ ἄρμοτα → ἀρμόττω
 - + **-eh₂* (collective) → **(h)ar-mn-eh₂* > *arma* ‘armour’
 - + **-lo-* (diminutive) → **(h)ar-mṛ-lo-* >> *armilla* ‘armlet’
 - + **-teh₂-* (possessive + individualisation) → **(h)ar-mṛ-teh₂* > *armenta* ‘plough animal’
 - + **-o-* → **(h)ar-ṛn-o* >> OCS *jarьmъ* ‘yoke’ *et al.*

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Abbreviations

DELL	Alfred Ernout & Antoine Meillet (2001). <i>Dictionnaire étymologique de la langue latine. Histoire des mots</i> . 4th ed. Paris: Klincksieck. Repr., orig. pub. in 1960.
DMic	Francisco Aura Jorro & Francisco Rodríguez Adrados (1985–1993). <i>Diccionario Micénico</i> . 2 vols. Madrid: Consejo Superior de Investigaciones Científicas, Instituto de Filología.
EDAIL	Hrach K. Martirosyan (2010). <i>Etymological Dictionary of the Armenian Inherited Lexicon</i> . Leiden & Boston: Brill.
EDBIL	Rick H. Derksen (2015). <i>Etymological Dictionary of the Baltic Inherited Lexicon</i> . Leiden & Boston: Brill.
EDL	Michiel A. C. de Vaan (2008). <i>Etymological Dictionary of Latin and the Other Italic Languages</i> . Leiden & Boston: Brill.
EDPG	Guus Kroonen (2013). <i>Etymological Dictionary of Proto-Germanic</i> . Leiden & Boston: Brill.
EDSIL	Rick H. Derksen (2008). <i>Etymological Dictionary of the Slavic Inherited Lexicon</i> . Leiden & Boston: Brill.
EIEC	James P. Mallory & Douglas Q. Adams (1997). <i>Encyclopedia of Indo-European Culture</i> . London & Chicago: Fitzroy Dearborn.
EWAhd	Albert L. Lloyd et al., eds. (1988–). <i>Etymologisches Wörterbuch des Althochdeutschen</i> . Göttingen & Zürich: Vandenhoeck & Ruprecht.
EWAia	Manfred Mayrhofer (1986–2001). <i>Etymologisches Wörterbuch des Altindoarischen</i> . 3 vols. Heidelberg: Winter.
HAB	Hračya Ačařyan (1971–1979). <i>Hayerēn armatakan bařaran</i> . 4 vols. Erevan: Erevani Hamalsarani Hratarakč'ut'iun.
IEW	Julius Pokorny (1959). <i>Indogermanisches etymologisches Wörterbuch</i> . 2 vols. Bern & München: Francke.
LIPP	George E. Dunkel (2014). <i>Lexikon der indogermanischen Partikeln und Pronominalstämme</i> . 2 vols. Heidelberg: Winter.
LIV ²	Helmut Rix & Martin J. Kümmel (2001). <i>Lexikon der indogermanischen Verben</i> . 2nd ed. Wiesbaden: Reichert.
LKŽ	<i>Lietuvių kalbos žodynas</i> (1941–2002). 20 vols. Vilnius: Mintis & Mokslas.
REW	Max Vasmer (1953–1958). <i>Russisches etymologisches Wörterbuch</i> . 3 vols. Heidelberg: Winter.
WH	Anton Walde & Johann B. Hofmann (1938–1956). <i>Lateinisches etymologisches Wörterbuch</i> . 3rd ed. 2 vols. Heidelberg: Winter.

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