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POTENTIAL TRACES OF THE TYPE *penk^{wer} AND ITS DERIVATIVES IN OTHER BRANCHES

The discussion in the article is only based on part of the evidence for IE *-(e)r(o)-extended numeral forms that are often mentioned alongside each other; previous studies on the subject (such as the pertinent parts of Brugmann 1907, Szemerényi 1960 or the numerous works by Meillet) invariably cover a much wider range of languages and formations. Some of these are mentioned in passing in §1.2.2 in the introduction to the main text; however, they are omitted from the core part of the study because they either admit viable alternative explanations or are generally difficult to interpret. This material will be briefly reviewed below, with notes on how the assumption of a PIE adverbial type *penk^{wer} may help provide alternative explanations for the relevant types.

Many of the forms and types mentioned below – particularly the Ital. (§A–B) and OArm. (§E) evidence – have spawned a great amount of controversy. Only a small part of the discussion surrounding these forms can be reported here, and the survey below should by no means be treated as a full-fledged study of the pertinent formations.

A. Osc. *pumperia*-, Umbr. *pumpeřia*-¹

A feminine substantive *pumperia*- is attested a number of times in Osc. inscriptions from Capua; the forms are NOM.PL **pumperias** (Cp 11), **púmperia(s)** (Cp 28), **pumperi(as)** (Cp 26) and DAT/ABL.PL **púmperiais** (Cp 29, 30, 32), **púmpe(riais)** (Cp 27). In Umbr., there is one attestation of the evidently cognate form NOM.PL **pumpeřias** (Iguvine Tables, IIb) (the unexpected correspondence of Umbr. ř to Osc. r is usually explained as due to the spelling of Umbr. **pumpeřias** being influenced by the preceding word **fameřias**). See Untermann (2000: 602–603) with references.

These forms are traditionally treated as derivatives of PIE *penk^{we} ‘5’ (expected Osc.-Umbr. *pompe, itself unattested, but present in a number of derivatives, including e.g. the name of Pompeii; Untermann 2000: 604). However, their meaning is not securely known – the standard interpretations are based partly on the context of the attestations and partly on reconstructing forward on the basis of the supposed etymology. Thus, Umbr. *pumpeřia*- is usually interpreted as ‘group of 5 people’: the part ‘group of people’ is based on its occurrence in the sequence **tekvias fameřias pumpeřias**, which seems to refer to family-like entities, and the part ‘5’ is based on the supposed etymology. The Osc. forms, on the other hand, all occur as part of date designations, and it has been speculated that the meaning is ‘the fifth day’, ‘five days’, or even ‘the day on which the *pumperia*- (in the Umbr. sense) have their solemn assembly’ (Conway 1897: 650).

If the above forms can indeed be considered to point to a substantive *penk^{werijā} with the original meaning ‘group of 5’ – which is far from certain – it can be derived from the reconstructions posited in §6 in the main text: adv. *penk^{wer} → adj. *penk^{wer}-o- (BSl., Pre-PGmc.) → derived adj. *penk^{wer}-iyo- → subst. *penk^{wer}-iyeh₂ ‘group of 5’ vel sim.

The forms have also been dealt with in accordance with the traditional ‘4’-theory (e.g. Brugmann 1907: 26, Szemerényi 1960: 97–99). For yet other proposals, see Untermann (2000: 603).

¹ For an in-depth treatment of these Sabellic forms see now also: BLANCA MARÍA PRÓSPER, ‘The Indo-European ordinal numerals ‘fourth’ and ‘fifth’ and the reconstruction of the Celtic and Italic numeral systems’, *Die Sprache* 51 (2014/2015), 1–50 (see esp. 34–43).

B. Lat. *decuria* and *centuria*

A further set of Ital. forms often brought into discussion in connection with the aforementioned material are Lat. *decuria* (Pl.) ‘group of 10 men’, ostensibly cognate with Umbr. **tekurries**, *decurier* DAT/ABL.PL with uncertain meaning (Untermann 2000: 167), and Lat. *centuria* ‘unit of 100 men’ (Cincius) (cf. also *centuriō* ‘centurion’, Lucil.). Although doubtlessly related to the numerals **dekm̥* > *decem* ‘10’ and **(d)k̥mtom* > *centum* ‘100’, respectively, the forms are problematic in view of the unexpected final *-u-* of the numeral stem in the complex *-ur-* (the bare *decur-* has also been sought in the isolated *decures· decuriones*, Paul. Fest.). A genuine PIE variant stem **dek̥-u-* has been posited for the numeral ‘10’ to explain these forms (see the references in Untermann 2000: 167), based on an alleged comparandum in PGmc. **tigu-* (traditionally explained as a metanalysis of **tigum-* < **dekm̥-*, however) as well as Umbr. **tekvias** (a word with uncertain meaning, but attested in the very same locus, see §A above; that it should have any connection to the numeral ‘10’ has been questioned, e.g. Szemerényi 1960: 99). Variants of the traditional ‘4’-solution have also been applied to explain the Italic *-ur-* forms, see e.g. Brugmann (1907: 26–27) and Szemerényi (1960: 98–100).

The hypothesis presented in §6 in the main text is not designed to explain these problematic forms, which present a crux to any theory. They can of course be interpreted as historically descended from the type **penk^wer*, although the unclear process of remodeling the stem to *-u-r-* is required in any case.

C. OHG *huntari*, ON *hundari*

The noun *huntari* (*hunteri*), MASC *ia*-stem ‘centurion, captain’ is found in the OHG Tatian (Schützeichel 2006: 170). ON attests the word *hundari* (*hundare*), NEUTR *ia*-stem ‘hundred, i.e. an administrative division in medieval Sweden’² (early attestation in the Vallentuna rune stone inscription, Wessén & Jansson 1940–1943: 321–324; later in OSw.³).

These words are clearly related to OHG *-hunt*, ON *hund(rað)* < PIE **(d)k̥mtom* ‘100’, but the relationship to the numeral has been interpreted in a number of different ways. Some scholars have treated these forms as old inherited formations derived with a suffix **-er-* or **-or-* directly from PIE **(d)k̥mt-* ‘100’, connecting them with Lith. *šimter-iópas* ‘100-fold’ (§2.2 in the main text), PSl. **s̆terь* ‘100-fold’ (cf. Cz. *stěry* ‘id.’, OCS *s̆toricejŕ* ‘100 times’; §2.1 in the main text) and – in spite of the problems mentioned in §B – Lat. *centuria*; thus e.g. Ernout & Meillet (1979: 202), Pokorny IEW (1: 192).

However, attributing such archaic status to the words in question may not be warranted. Although the hypothesis according to which OHG *huntari* is merely an adaptation of Lat. *centuriō* ‘centurion’ recreated with native Gmc. material (see references in Brugmann 1907: 27) is hardly compelling, the simplest explanation is that it is derived from *-hunt* by means of the agent noun suffix **-āria-* borrowed from Lat.; this position is authoritatively supported by EWA (4: 1245).

Thus, although the set Lith. *šimter-*, PSl. **s̆terь*, PGmc. **hund-ar-*, (remodeled?) Lat. *cent-ur-* would yield an interesting reconstruction PIE **(d)k̥mt-er-* if taken at face value, there are grave problems with using these forms for comparative purposes.

D. OIr. personal numerals

OIr. has a category of ‘personal numerals’ for the range 2–10, mostly denoting groups of people (though see below), and displaying the morphological profile of *o*-stem NEUTR substantives (Thurneysen 1946: 242–243):⁴

² On the nature and role of this unit in the territorial division of medieval Sweden, see Line 2007: 206–224.

³ S.v. *hundare* in the University of Gothenburg’s online lexicon *Fornsvensk lexikalisk databas* (URL: <https://spraakbanken.gu.se/fsvldb/>, last accessed: May 6, 2016).

⁴ The personal numeral for ‘2’ is formed differently.

personal numeral		corresponding cardinal	
<i>triar</i>	‘3 people’	<i>tri</i>	‘3’
<i>cethrar</i>	‘4 people’	<i>cethair</i>	‘4’
<i>cóicer</i>	‘5 people’	<i>cóic</i>	‘5’
<i>se(i)sser</i>	‘6 people’	<i>sé</i>	‘6’
<i>mórfes(s)er</i>	‘7 people’ (‘big 6’)		
<i>ochtar</i>	‘8 people’	<i>ocht</i>	‘8’
<i>nónbor</i>	‘9 people’	<i>noí</i>	‘9’
<i>de(i)chenbor</i>	‘10 people’	<i>deich</i>	‘10’

These forms are usually viewed as compounds of the cardinal numeral and the noun *fer* ‘man’ < PIE **wihro-* (thus also Thurneysen, *ibid.*). Under this interpretation, the original **w-* is still visible as OIr. *-b-* in the last two members of the set, *nónbor* ‘9’ and *de(i)chenbor* ‘10’.

However, the personal numerals are also found in the DAT of apposition following possessive pronouns, and in such constructions their use is not limited to denoting groups of people – cf. the example quoted by Thurneysen, *ibid.*: *biit a triur do anmair ind éiuin* (Sg. 93a2) ‘they are all three (used) for the name of the bird’. If not a secondary development, this does not square well with the noun ‘man’ being the source of the element attached to the numeral.

Thus, some scholars have assumed an authentic suffix **-Vro-* in these forms, cf. e.g. Pedersen (1893: 272, 1913: 136). Under such a view, however, the unexpected *-b-* in the last two members of the set must be ascribed to a folk-etymological intrusion. Szemerényi (1960: 98), who prefers the solution based on the metanalysis of **k^{wet}wer-o-* (§4.3 in the main text), notes that “popular etymology, connecting the formation with *fer*, seems to have been at work in shaping “9” and “10””.

If they were to be connected the hypothesis postulated in §6 in the main text, these forms could have exactly the same origin as the Sl. collective type **pętero* discussed in §2.1 in the main text, i.e. go back to a neuter substantivization of the adjectival type **penk^{wero-}* ‘5-fold’.

E. OArm. ordinals⁵

As was briefly mentioned in §1.2.2 in the main text, OArm. famously forms its ordinal numbers in a way that – at least superficially – does not recall the types familiar from the other IE languages (Schmitt 2007: 132, Winter 1992b: 353–356). The principal formation spanning 2–10 is characterized by the suffixation of an element *-(e)rord*, inflecting as a nominal *ā*-stem. The forms 2–4 also attest alternative shorter forms:⁶

ordinal numeral		corresponding cardinal	
<i>erkir, erk^rord</i>	‘2 nd ’	<i>erku</i>	‘2’
<i>erir, err^rord</i>	‘3 rd ’	<i>erek[˘]</i>	‘3’
<i>č[˘]orir⁷, k[˘]a^rord, č[˘]orr^rord</i>	‘4 th ’	<i>č[˘]ork[˘]</i>	‘4’
<i>hinger^rord</i>	‘5 th ’	<i>hing</i>	‘5’
<i>vec[˘]er^rord</i>	‘6 th ’	<i>vec[˘]</i>	‘6’

⁵ For a novel approach as well as detailed research history see now also: OLIVER PLÖTZ, ‘Laryngeal aspiration and the weakening of dentals in Classical Armenian’, *Indogermanische Forschungen* 121 (2016), 249–269 (see esp. 256–257).

⁶ The morphology of the ordinal ‘1st’, *arajin*, is clearly unrelated.

⁷ On the grounds of internal reconstruction (Winter 1992b: 354–355), it is likely that the original short form for ‘4th’ was **k[˘]ar[˘]*, providing the basis for the synchronically irregular and therefore presumably more archaic variant *k[˘]a^rord* of the long ordinal – note the same relationship obtaining for ‘2nd’ (*erkir* : *erk^r-ord*) and ‘3rd’ (*erir* : *err^r-ord*) as well. (The syncope of in the latter forms is due to the well-known rule of OArm. affecting underlying /i/; Schmitt 2007: 39, 48–50). The actually attested short form *č[˘]orir* can the be assumed to be reshaped to match the cardinal more closely.

<i>ewt</i> ‘ <u>nerord</u> ’	‘7 th ’	<i>ewt</i> ‘ <i>n</i> ’	‘7’
<i>owt</i> ‘ <u>erord</u> ’	‘8 th ’	<i>owt</i> ‘	‘8’
<i>innerord</i>	‘9 th ’	<i>inn</i>	‘9’
<i>tasnerord</i>	‘10 th ’	<i>tasn</i>	‘10’

As a type, the short forms are often considered to descend from the PIE multiplicative adverbs in **-s*, thus **dwis* ‘twice’ >> *erkir*, **tris* ‘thrice’ >> *erir*, **k^wet(w)js* ‘4 times’ > **k^war⁷* (Winter 1992: *ibid.*, who cites parallels such as Lat. *bis consul*, lit. ‘twice consul’, also meaning ‘being consul for the 2nd time’; similarly Olsen 1999: 631). The derivation requires certain assumptions regarding the phonological developments and subsequent morphological restructuring, however, and many alternative views have been expressed as well (see Martirosyan 2010: 262 with references).

The origin of the longer forms in *-(e)rord* is likewise controversial and has been widely debated. A common point of convergence is the assumption of a morpheme boundary before the element *-ord*. The latter has been reconstructed as **-k^wort-os*, **-k^wort-eh₂* or the like and compared to the multiplicative morpheme seen in Ved. *-kṛt*, Av. *-kərət* (as in *sakṛt*, *hakərət* ‘once’) as well as PSI. **kortō*, Lith. *kaĩtas* ‘time (in multiplicative sense)’, probably identifiable with the root **k^wer-* ‘cut, do’ (LIV₂: 391); detailed discussion in Olsen (1999: 527–529).⁸ Whatever the etymology, it seems certain that *-ord* must have been a compositional element contributing the semantics necessary to generate an ordinal numeral as well as similar ‘positional’ elements (*mijn-ord* ‘the one in the middle, mediator’, *yetn-ord* ‘in the back, last’; Olsen 1999: 529–530).

The origin of the synchronic interfix *-(e)r-* is famously unclear. Most theories operate with analogical transfers within the numeral system (e.g. from the numeral ‘4’ or from the *-r-* present in the short ordinal numerals), and it is commonly assumed that the longer variant *-er-* spread from *hingerord* ‘5th’ (with its underlying **penk^we-*) to the higher numerals, the original form of the interfix being *-r-* (Szemerényi 1960: 94, Olsen 1999: 420). Some theories have to rely on additional assumptions – recently e.g. Viredaz (2004: 91), who starts from the expected PIE ordinal **k^w(e)twr-to-* ‘4th’, developing to Pre-OArm. **č^w(e)ar-do-* or **k^war-do-*; from there, according to the argument, **-do-* could get abstracted and transferred to **hinge-do-*, which would develop to the attested *hinger-* by a postulated regular change **d > r* in this position.

As in the previous sections devoted to reviewing the additional material, it is not possible to engage in a full discussion of this complicated problem here. However, it is useful to review how the hypothesis postulated in §6 in the main text could be used to contribute to it. As was briefly reported in §1.2.2 in the main text, Meillet argued for considering the OArm. ordinals related to Lith. *penkeri*, PSI. **pęterō* and their kin – but he was forced to assume an archaic PIE ordinal formation, which is generally considered untenable. Meillet’s connection with the BSl. forms is sometimes still mentioned in newer literature (e.g. de Lamberterie 1988: 232), but no improved theory has been built around it, and it only plays a minor role in the discussion of the problem.

As was mentioned earlier in this section, it appears that in the long forms, it is the element *-ord* that contributes the ordinal semantics, whereas the interfix *-(e)r-* has no identifiable overt function. Formally, it would be possible to derive *hingerord* ‘5th’ directly from a virtual Post-PIE **penk^wer-k^wort-eh₂*, with the adverbial PIE **penk^wer* ‘in/on/at 5’ as the first member of the compound; the higher ordinals would have a similar origin too (*vec^werord* ‘6th’ < Post-PIE **swek^wer-k^wort-eh₂*). The original semantics of the adverb may well have been a frequentative ‘X times’ (< ‘in a group of X, counting X’), especially if the short forms of the ordinals 2–4 (*erkir*, *erir*, **k^war*) really continue the morphologically different frequentative adverbs of the type **dwis* ‘twice’ and if there was a general inclusion of frequentative morphology in the ordinal system in the

⁸ The recognition of the OArm. sound law by which PIE **k^w* (> **p > *h*) > \emptyset / $_o$ is necessary for this particular etymology; see Olsen 1999: 806. The origin of the element *-ord* is not of crucial importance in the present study, so the matter need not be pursued here.

prehistory of OArm. Alternatively, one could imagine that instead of using the adverbial formation **penk^wer* 'in/on/at 5' in the meaning 'in a group of 5, counting 5' (typological parallel Lith. *trisè* 'in a group of 3'), as was the case in the prehistory of BSl. and Gmc., OArm. generalized a more literal meaning 'at 5, in the 5th position', leading towards the ordinal semantics of the outcome formation. In either case, it would be the fuller form *-er-* of the interfix that would turn out original (from forms such as **penk^wer*, **swek^ser*); the long forms of the range 2–4 displaying a simple *-r-* (*erkrord* '2nd error^d '3rd', *k'arord* '4th'), would be unrelated altogether, instead displaying the morphology of the short ordinals *erkir*, *erir*, **k'ar* – whatever their ultimate origin (see above).

All in all, the crux posed by the OArm. ordinals admits a number of speculative explanations and this situation is unlikely to change. However, it is noteworthy that the assumption of the PIE adverbial type **penk^wer* provides yet another way of analyzing the OArm. problem.⁹

F. Further material

The above sections certainly do not exhaust material that could potentially be brought into connection with the hypothesized PIE type **penk^wer*. There remain obscure formations, often difficult to interpret on both the synchronic and diachronic level, such as the Pahl. de-numeral adjectives formed with a suffix possibly read *-rīn* (*panjrīn* 'fivefold', etc.; attested in the Pahlavi Yasna e.g. in Y.10.16, Y.11.9),¹⁰ not to mention stray lexical items like the alleged Gaul. *peperacium* (see §1.2.2 in the main text).

(References: see the bibliography in the main text).

⁹ The failure of *-i-* to delete in *hingerord* (in accordance with the well-entrenched rule mentioned in fn. 7) is a mystery under any theory. The conclusion that it rests on a repair based on the cardinal appears inescapable, but it is surprising, the more so because the morpheme denoting '5' does surface as *hng-* in inflected forms such as GEN/DAT.PL *hngic* 'or higher numerals such as *hngetasan* '15'.

¹⁰ Sometimes interpreted as superlative *-īn* added to the cardinal extended with an unexpected *-r-* (different lections are possible, however). See Salemann 1930: 65, Dhabhar 1949: 193.