Rhotic degemination in Sanskrit and the etymology of Vedic *ūrú-* ‘thigh’, Hittite ^{UZU}(*u*)*walla-* ‘id.’

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Abstract

This paper examines the absence of geminate *-rr-* in Sanskrit and argues that the synchronic ban on this sequence results from continued high ranking of an Obligatory Contour Principle constraint against heteromorphemic geminates (inherited from PIE) combined with the substrate influence of Dravidian languages in which the rhotics are non-geminable. New *-rr-* sequences that arose in Proto-Indo-Iranian and Proto-Indo-Aryan from PIE **-LL-* or **-LHL-* after loss of the laryngeal and merger of **l* with the rhotic were repaired through degemination. This hypothesis predicts a development of PIE **(-)C_LH_LV-* to Sanskrit *(-)Cī/ūrV-* which has not been previously recognized in the treatments of Indic historical phonology. This development is arguably found in *mūrā-* ‘stupid’ < **mūr_{ra}-* < **m_h_x-lo-* (cf. Hitt. *marlant-* ‘stupid’), *ūrú-* ‘thigh’ < **ū_{rru}-* < **(h_x)u_h_x-Lu-* < **(h_x)u_h_x-Lo-* (cf. Hitt. *walla-* ‘thigh’), *śīrā-* ‘fervent’ < **śī_{rrā}-* < **k_h_x-Ló-* (cf. *śráya-ti* ‘be fervent’), and perhaps in several other examples.

Keywords

Sanskrit historical phonology – Indo-Iranian – Anatolian – Latin – Proto-Indo-European reconstruction – laryngeal loss – Saussure Effect – long syllabic resonants – rhotics – language contact – etymology

1 *GEMRHOTIC in Sanskrit¹

There is no geminate *r* in Sanskrit from its earliest attestation onwards.² In cases where a sequence *-rr-* is expected in external sandhi or in composition, the first *r* is eliminated with a compensatory lengthening of the preceding vowel, if the latter is short (Pāṇ. 6.3.111; Ṛk-Prātiśākhya 4.29).³ The rule applies both to underlying *r* and to *r* < *s* in RUKI context:

(1) *r*-Deletion

- /antaḥ + ṛodasi/ > [anta:ṛodasi:] ‘between two world-halves’⁴
 /punaḥ + ṛu:pa:ṇi/ > [puna:ṛu:pa:ṇi] ‘again forms’⁵
 /ma:tuḥ + ṛiḥan/ > [ma:tu:ṛiḥan] ‘mother’s licking’⁶
 /duḥ + ṛoḥaṇan/ > [du:ṛoḥaṇan] ‘difficult mounting’⁷

1 C is used as a cover symbol for any consonant, L is used as a cover symbol for **r* and **l*, while U stands for **i* and **u*; “→” is used for morphological derivation, while “>” denotes phonological development; ^{TP} = transponate. For Sanskrit data, this article employs standard Indological transliteration which can be easily converted to the IPA: macrons designate vowel length [ː], ring below a symbol indicates syllabicity ([.]), dot underneath a symbol indicates retroflex articulation (*t* = [ɮ], *n* = [ɳ], etc.), *bh*, *dh*, *gh*, etc. are aspirated plosives ([bʰ], [dʰ], [gʰ], etc.), *j* = [ɟ], *ñ* = [ɲ], *ṇ* = [ɳ], *ṽ* = [v], *y* = [j], *ṣ* = [ʂ], *ś* = [ʃ], *h* = [ɦ]; the articulation of the Sanskrit rhotic is debated (see the discussion in the main text below): the widely agreed-upon phonetic interpretation of /*r*/ is [ɻ] which is used in transcriptions below. Vedic texts are abbreviated after Gōto (1987); Greek texts are abbreviated after LSJ; Latin texts are abbreviated after OLD.

2 One apparent exception is the compound *vārrāṣi-* (m.) ‘ocean’ (*scil.*, ‘water-heap’) cited by Rāja Rādhākānta Deva 1825–1857/4: 353, allegedly from a Purāṇa; I have not been able to confirm the form and it is unlikely to be genuine.

3 See Whitney (1889: 61); *AiGr* 1.335; Macdonell (1910: 72); Bloch (1951: 44); Renou (1952: 101); Allen (1972: 70); Kavitskaya (2011: 91–92).

Instances like RV 10.190.2 *ahorātrāṇi* ‘day and night’ (for expected [aḥa:ṛa:tra:ṇi] < /aḥaḥ + ṛa:tra:ṇi/) or RV 8.31.9 *ūdho romaśām* ‘hairy udder’ (for expected [u:ḍʱa:ṛomaśam] < /u:ḍʱaḥ + ṛomaśam/) do not counterexemplify the rule above: the reason for the *prasṛita* treatment here is that the *r*-stems *áhar-* and *ūdhar-* were reanalyzed as neuter *s*-stems on the basis of the fact that the distinction between several allomorphs of *r*- and *s*-stems was neutralized in external sandhi (e.g., the pause form *-ah* in nom.-acc. sg.), hence [aḥo ṛa:tra:ṇi] < /aḥas + ṛa:tra:ṇi/, see Macdonell (1910: 72⁴). Further evidence for this reanalysis comes from instr. pl. *áhobhiḥ* (2x RV) showing that *áhar-* was treated like an *s*-stem.

4 RV 4.7.8 *ubhé antá ródasi saṃcikitvān* ‘between the two world-halves, observing them both together’ (trans. Jamison & Brereton).

5 AVŚ 1.24.4 *sādhaya púnā rūpāni kalpaya* ‘make the forms right again’ (trans. Whitney).

6 RV 1.140.9 *adhivāsām pári mātú rihánn áha* ‘licking all around his mother’s over-garment’.

7 AB 4.21.1 *āhūya dūrohaṇam rohati* ‘having uttered the call, he mounts the difficult mounting’ (trans. Keith; *dūrohaṇá-* refers to the mode of recitation in which the stanza is recited first by pāda, then by half-verse, then by three pādas, and then in a reverse order, cf. ĀŚŚ 8.2.12–13).

Another remarkable fact is that /r/ is the only sound expressly excluded by Pāṇini (8.4.46–52) from the list of Sanskrit consonants that may be doubled in clusters.⁸ The sequence *-rr-* is thus prohibited in Sanskrit both in derived contexts⁹ and morpheme-internally.¹⁰

Sanskrit is not typologically unique in this regard: for instance, in the Romanesco dialect of Italian the rhotic is the only consonant excluded from gemination in external sandhi (*raddoppiamento sintattico*).¹¹ The same restriction is observed in Tamil, Malayalam, and other Dravidian languages where all consonants may be geminated (for instance, in the formation of causative stems), except for /ɾ/, /r/, and /ɻ/.¹² This situation is reconstructed for Proto-Dravidian;¹³ its potential significance for the question of non-geminability of the rhotic in Sanskrit is obvious, since Dravidian languages exerted considerable contact influence on Indo-Aryan.¹⁴ There are other languages in which geminate consonants are generally permitted, but rhotics are joined by some other consonants in being non-geminable.¹⁵

The phonetic basis of the ban on geminate *rr* in Sanskrit is difficult to determine with certainty, since we do not know how exactly Sanskrit /r/ was articulated: Indian grammatical tradition variously describes it as dental (*dantya*),

- 8 Optional gemination of the second consonant in a cluster is taught by Indian grammarians and supported by ample manuscript and inscriptional evidence, e.g., *brahmā* > *brahmmā* 'Brahman', *apa hnute* > *apa hnnute* 'denies', or *adya* > *addya* 'today', see Cardona (2013: 51–64).
- 9 Unsurprisingly, the sequence is not found in internal sandhi either. There is only one set of *r*-initial endings in the language, namely, 3 pl. *-re* / *-rate*, *-ran* / *-ram* and ipv. *-rām*, but there are no such forms in Vedic made from roots ending in *-r*: for instance, the root *śṛ-* 'to smash' makes aor. pass. (*a*)*śāri*, but in the plural the verbal adjective has to be used instead, as in RV 1.174.6 *tvāyā śūrtāḥ* 'they were shattered by you', not *tvāyā †aśran* (where, admittedly, the cluster would have been *-rr-* and not *-rr-*). Middle perfects made from roots in final *-r* invariably use connecting *-i-* before 3 pl. ending: *dadhīrē*, *īrīrē*, *cakrīrē*, etc.
- 10 Sasha Lubotsky points out to me that cases of distant dissimilation of *r* ... *r*, e.g., intens. **ārar-* (root *r-*) > *ālar-^{ti}* 'be on the rise' (*AiGr* 1.221) or **durhīṇā-* 'rage' (root *hī-*) > *durhāṇā-* (Narten 1982: 140) may be related to the phenomenon under discussion.
- 11 In modern Romanesco rhotic degemination is a sociolinguistic marker, see Nodari & Meluzzi (2020).
- 12 For (literary) Tamil see Lehmann (1994: 11); for Malayalam see Mohanan & Mohanan (1984: 581–582) and Sadanandan (1999: 22–23).
- 13 See Steever (1998: 16); Andronov (2003: 300); Krishnamurti (2003: 152).
- 14 See, e.g., Hock & Bashir (2016: 256–359).
- 15 For instance, Biblical Hebrew where pharyngeal and laryngeal fricatives are non-geminable along with the rhotic (Blau 2010: 81–82), Wolof where geminate obstruents, laterals, and glides are permitted, but not rhotics or voiceless continuants (Ngom 2003: 8), or Pulaar where beside [r] voiceless continuants [s], [f], and [h] cannot be geminated (Niang 1997: 48).

alveolar (*dantamūliya* ‘tooth-rootic’), or retroflex (*mūrdhanya* ‘cerebral’).¹⁶ However, evidence across languages suggests that rhotics of all types are marked as geminates.¹⁷ Podesva (2000) proposed a perceptual account of the constraint on geminate sonorants in general arguing that they are easily confused with corresponding singletons due to their relative acoustic similarity to flanking vowels.¹⁸ This hypothesis is supported with experimental evidence showing that intervocalic geminate sonorants are spectrally continuous with adjacent vowels making their constriction duration difficult to perceive.¹⁹

This paper is devoted to the diachronic aspect of the problem: how did the *GEMRHOTIC constraint come about in Sanskrit? To start at the very beginning, we know that there was no *-rr- in Proto-Indo-European where heteromorphemic geminates were not allowed.²⁰ For instance, as Jochem Schindler observed,²¹ there are no adjective stems in *-ro- made from roots in final *-r: PIE speakers apparently avoided the derivation that would lead to a dispreferred structure. We can therefore theorize that Proto-Indo-Iranian inherited from PIE an Obligatory Contour Principle constraint against adjacent identical segments: heteromorphemic geminates continued being avoided in derivation and were repaired through deletion when unavoidable. The continued high ranking of this constraint in Indo-Aryan conspired with the nongeminability of rhotics in Dravidian substratum resulting in the restriction on geminate -rr- throughout the history of Sanskrit.²²

Let us explore the predictions of this hypothesis in more detail. While it is certain that Proto-Indo-Iranian did not inherit any geminate liquids going back to PIE *-rr- or *-ll-, since these sequences were avoided in the proto-language, it seems that in PIE *-rl- or *-lr- were possible clusters: individual IE languages either show no restriction on these sequences (cf. Luw. *ḫūtarlānni*- ‘(little)

16 See Allen (1953: 54–55). Hock (1992: 72–73) argued for alveolar articulation of Sanskrit /r/ and Kobayashi (2004: 99) put forth a phonetic reason for the restriction on -rr- based on the doctrine that Sanskrit /r/ was an alveolar flap, but see the criticism by Ryan (2017: 303). To me retroflex articulation seems likeliest because of the *nati*-rule (*n*-retroflexion via harmony, e.g., *rūpāni* [ɽu:pɑ:ɽi] < /ɽu:pɑ:ni/ in ex. (1) above) and the dissimilation -sr- > -sr-, e.g., *tisrás* ‘3’ (nom.pl. fem. of *tri*-) or *usrás* (gen.sg. of *uśár*- ‘dawn’) on which see Hale (1998).

17 See the general discussion by Ryan (2019: 125–126).

18 See also Kawahara (2007).

19 See Hansen & Myers (2017); Kawahara & Pangilinan (2017).

20 See Szemerényi (1996: 109–110); Mayrhofer (1986: 110–111 & 120–121); Byrd (2015: 43–48 & 2018: 2071). So-called “expressive gemination” (Watkins 2013) is a special case.

21 *Apud* Mayrhofer (1986: 121⁹⁹).

22 For the rhotics’ aversion to gemination in Proto-Dravidian see n. 13 above.

slave', Pal. *warlaḥi-* 'lamb',²³ or Lith. *gurlūs* 'weak') or eliminate them through assimilation or epenthesis in front of our eyes, as it were (cf. Lyd. *serli-* / *selli-* 'authority' (<s> = [ʃ]), OIr. *sell* 'eye, iris of the eye, glance' < **stillo-* < PCelt. **stīrlo-*,²⁴ Toch. A *ārāl* 'end', perl. *ārāl* (< **ārālæ* with epenthesis < ^{TP}*h_x-lo-*, root *ār-* 'to cease'),²⁵ or Arm. *molar* 'erroneous' < **mol-ro-*.²⁶) Given that PIE **r* and **l* merged in Sanskrit,²⁷ can we tell what happened to PIE **-rl-* and **-lr-* by reconstructing forward?

A hypothetical PIE form **Cer-lo-* would be expected to give Proto-Indo-Iranian **Carra-*; the hypothesis that a constraint against geminates in PIE was inherited in Indo-Iranian predicts that **Carra-* would be degeminated, either to **Cara-* or to **Cāra-* with a compensatory lengthening. The latter assumption is borne out by the synchronic facts of Vedic sandhi (*púnar rūpāṇi* > *púnā rūpāṇi*), even though in theory there could be differences between word-internal cases of /VrrV/ versus the treatment of /Vr#r/ in external sandhi or composition. Unfortunately, the development **Cer-lo-* > *Cara-* (or *Cāra-* with compensatory lengthening) can be neither confirmed nor denied: a Sanskrit word of the structure *Cāra-* going back to a PIE root **CeL-* cannot be shown to go back to **Ce/oL₁-L₂o-* (e.g., **Cer-lo-*) rather than **CoL-o-* (with Brugmann's Law) or **CĒL-o-* unless there is a word equation with a liquid suffix in another Indo-European language, for which I have not been able to find a fully convincing example.²⁸ *Non liquet*.²⁹

23 See Sasseville & Yakubovich (2018 [2021]: 51).

24 See Schrijver (1995: 421). Lat. *stēlla* 'star' is inconclusive since it may go back to **stērelā-* with syncope.

25 On Tocharian gerundives, see Fellner (2017).

26 For vowel epenthesis, see Olsen (1999: 338); the PIE root is **mel-* (OIr. *mell₂* 'confusion, error, undoing' (< **mel-so-*), Gk. Ion. μέλεος 'idle, vain, futile' (< **meleho-*), perhaps zero-grade **m₁ls-* in βλάσ(-φημος)).

27 Space limitations prohibit discussing the question of possible preservation of PIE **l* in Indo-Iranian, and I am going to proceed on the admittedly simplified assumption that PIE **l* > Proto-Indo-Aryan **r* at least in those dialects of Indo-Aryan which underlie the texts from which the examples discussed in this paper have been drawn. For a recent discussion of PIE **l* in Indo-Aryan, see Schoubben (2019).

28 Ved. *dhārā-* 'blade, cutting edge' (YAv. *dārā-* 'id.', Ch. Sogd. *d'r*) has been explained as a metonymical extension of **dhārā-* 'gush, pouring, casting (of liquid metal)' (*EWAia* 1.789, root *dhan^t*), which is not entirely satisfactory on the semantic side. A possible direct comparison may be found in Gmc. **darra-n* 'spear', ON *darr* for which Schaffner (2001: 124–125) posited a preform ^{TP}*d^hor-Ló-* and proposed an etymological connection with IE **d^her-* 'to hold (a weapon in hand)'. But under this root etymology Ved. *dhārā-* can be just as well accounted for as a reflex of **d^hór-eh₂-* or **d^hér-eh₂-* (rather than **d^hér-leh₂-*), while Gmc. **darra-n* may also be analyzed as an outcome of **d^hor-s-ó-*.

29 Since it is unclear whether Proto-Indo-Iranian **Carra-* became **Cara-* or **Cāra-* with compensatory lengthening, I am going to employ a compromise notation **Cāra-*.

There is another, more promising question that can be investigated under the hypothesis of a continued high ranking of an OCP constraint against geminates in Indo-Iranian: what happened to **new** *-rr-* sequences arising from PIE **-LHL-* after application of various laryngeal-loss rules, such as the Saussure Effect or the creation of “long vocalic resonants”? For instance, there is no reason to doubt on phonological grounds that **CVLh_x-Lo-* could be a valid PIE formation: cf. **ĝ^helh₂-ro-* > OIr. *galar* (n., -o-) ‘sickness, disease’, Hitt. *kallar(a)-* ‘unfavorable, baleful’. An *o*-grade **CoLh_x-Lo-* would be subject to the Saussure Effect and become **CoL-Lo-* already in PIE.³⁰ If the liquids were identical (e.g., **Corh_x-ro-* > **Cor-ro-*), we would expect the resulting sequence of two heteromorphemic resonants to be degeminated already in PIE: cf. **(s)tómh₁-mṇ* ‘a cut, opening’ > **(s)tómmṇ* > **(s)tómṇ* > Gk. *στόμα* ‘mouth’, Hitt. *ištaman-* ‘ear’.³¹ If the liquids were different (e.g., **Corh_x-lo-*), the resulting form **Cor-lo-* would develop into Proto-Indo-Iranian **Car-ra-* after the merger of **l* and **r*. Since we never find forms with geminate *rr* in Indo-Aryan or Iranian,³² it is not unreasonable to speculate that **Carra-* in our *exempli gratia* reconstruction would be repaired as **Căra-* since it violated the constraint against geminates. Unfortunately, this development cannot be demonstrated due to the same problem as above: a hypothetical Sanskrit or Avestan form **Căra-* from PIE root **CeLh_x-* can always be explained as a plain thematic derivative, rather than a reflex of **CoL₁h_x-L₂o-*, unless the liquid suffix is supported by comparative evidence.³³ Another *non liquet*.

30 While I assume a PIE date of the Saussure Effect, this sound change has been contested by some scholars (Pronk 2011; van Beek 2011).

31 This analysis was proposed by Neri (2005: 212⁴⁹); see also Vine (2019: 229).

Another example of resonant degemination after the loss of a laryngeal is found in OIr. *neim* (n.) ‘poison, Gift’ < Proto-Celtic **neman-* which cannot directly continue the expected protoform **nemh₁-mṇ*: for the final laryngeal in the root **nemh₁-* ‘to give (one’s due), to distribute’ see Nikolaev (2010: 84–85) and *LIV Add.* s.v. The unexpected transition from PIE *men*-stem to a neuter *n*-stem (a virtually non-existent nominal class in Celtic or Indo-European) in this word is best explained as follows: after the loss of **h₁* by Schmidt–Hackstein’s Law (**h_x* > *ø* / C₁CC) in the prevocalic allomorph **nemh₁mn-*, the resulting sequence **-mmn-* underwent degemination to become **-mn-* and then a new strong stem **nemṇ* was back-formed to oblique **nemn-*. (Differently Byrd (2018: 2071) who follows Rasmussen (1999: 647) in assuming an *an* character of the root **nem-* and posits degemination **[nem-men] > *nemṇ*). It is instructive to compare David Stifter’s analysis of OIr. *gein* (n.) ‘birth’ (*apud* Peters 1997 [2002]: 101) which likewise cannot be a regular phonological outcome of **ġen_h₁-mṇ* (Ved. *ján(i)man-*, Lat. *germen* (Stüber 1998: 60–61 & 2015: 116). I thank Michael Weiss for an enlightening discussion of the Irish material.

32 There are no geminate consonants in Old Iranian (Kümmel 2014: 208 & 210–211).

33 Finding evidence for the purported development **CoLh_x-LV-* > **CoL-LV-* > **Car-rV-* >

But the thought experiment may continue: another valid PIE formation containing a sequence of two liquids separated by a laryngeal is **CL_h-Lo-*.³⁴ The expected development of this sequence on the way to Sanskrit is as follows:

(2) PIE **CL_h-Lo-*³⁵

Proto-Indo-Iranian	<i>*CL_hH-La-</i>	(merger of /e/, /o/, and /a/ as /a/)
Proto-Indo-Iranian	<i>*CL_hH-La-</i>	(merger of /h ₁ /, /h ₂ /, and /h ₃ / as /H/)
Proto-Indo-Iranian	<i>*CəLH-La-</i>	(epenthesis ³⁶)
Proto-Indo-Iranian	<i>*CərH-ra-</i>	(merger of /r/ and /l/ ³⁷)
Proto-Indo-Aryan	<i>*Ci/urH-ra-</i>	(ə > i; rounding in a labial context ³⁸)
Proto-Indo-Aryan	<i>*Ci/ūr-ra-</i>	(loss of H with compensatory lengthening)

However, we never find forms like **Ci/ūr-ra-* in Sanskrit. Just as above, it is possible to theorize that the continued high ranking of an OCP constraint against geminates (inherited from PIE) necessitated the repair of disallowed **Ci/ūr-ra-* as **Ci/ūra-*, except that in this case degemination would be of Proto-Indo-Aryan date: in the sequence *C_hRHC* the laryngeal was lost after Indo-Aryan separated from Iranian.³⁹ Importantly, in this case there may be actual evidence to support the claim that the *lautgesetzlich* outcome of PIE sequence **CL_h-Lo-* in Sanskrit was in fact **Ci/ūra-*. Prior to discussing this evidence in the next section of the paper, I summarize my series of hypotheses in the table below, using *lo-* and *ro-* derivatives from roots **Cer-* and *Cerh_x-* for illustrative purposes:

Skt. *Cār-V-* remains a task for the future. One important prerequisite for it is a better understanding of the semantics of the PIE suffixes **-ro-* and **-lo-*.

34 Cf. Gk. *χλωρός* 'pale green, yellow-ish' < *TPg^hlh₃-ró-* or Lat. *malleus* 'hammer' derived from **malalo-* < *TPm_llh₂-lo-* (both transponates are unfortunately uncertain since suffixal **-ero-* / **-elo-* remains a possibility to be reckoned with).

35 The first four sound changes are not critically ordered in respect to one another.

36 See Cantera (2017: 489); Clayton (2018).

37 See n. 27 above.

38 For the phonological development **CL_hC-* > **Ci/ūrC-*, cf. *tīrṇá-* 'one who has crossed' (< **t_hh₂-nó-*) or *gūrtí-* 'praise' (< **g^wrh_x-ti-*); see Pinault (1987–1988: 329); Clayton (2018).

39 This is established on the basis of differing reflexes in Indo-Aryan and Iranian, cf. Ved. *gūrbhīh* 'with songs' vs. Av. *garəbiš* or Ved. *stīrṇá-* 'spread' vs. Av. *starəta-*.

(3) *rr*-Degemination from PIE to Sanskrit

	CVL ₁ L ₂ V	CoL ₁ h _x L ₂ V	CoL ₁ h _x L ₁ V	CL ₀ h _x LV
PIE	* <i>Cer-lo-</i>	* <i>Corh_x-lo-</i> > * <i>Cor-lo-</i> (Saussure Effect)	* <i>Corh_x-ro-</i> > * <i>Cor-ro-</i> (Saussure Effect) > * <i>Coro-</i> (degemination)	* <i>Crh_x-lo-</i>
Proto-Indo-Iranian	* <i>Car-ra-</i> > * <i>Cara-?</i> * <i>Cāra-?</i> (degemination)	* <i>Car-ra-</i> > * <i>Cara-?</i> * <i>Cāra-?</i> (degemination)	* <i>Cāra-</i> (Brugmann's Law)	* <i>CārH-ra-</i>
Proto-Indo-Aryan	* <i>Cāra-</i> (no examples)	* <i>Cāra-</i> (cf. <i>dhārā-?</i>)	* <i>Cāra-</i> (no examples)	* <i>Ci/urH-ra-</i> > * <i>Ci/ūrra-</i> > * <i>Ci/ūra-</i> (degemination)

2 PIE *-CL₀h_xLV- > Skt. *-Cī/ūrV-

Are there any specific examples that could be cited in support of the development of PIE *CL₀h_x-Lo- to Sanskrit *Cī/ūra-? One way to find such evidence is to examine the instances of prevocalic -īL- / -ūL- in Sanskrit. Some of these cases represent analogical transfers of zero-grade root allomorphs from preconsonantal contexts, e.g., AV *pūraya-ti*, Br. *pūraṇa-* 'filling' where *pūr-* was extracted from pass. *pūryate* and p.p.p. *pūrṇa-*⁴⁰ or Ved. *tīrá-* 'shore, bank' which probably owes the root allomorph *tīr-* to *tīrthá-* 'ford'.⁴¹ Other instances contain zero-grades of roots in *-ih_x and *-uh_x, e.g., *vīrá-* 'man' (**uih_x-ró-*) or *dūrā-* 'far' (< **duh₂-ró-*), or may reflect laryngeal lengthening across compound boundary, e.g., *sūrí-* 'patron of sacrifice' if from **h₁su-h_xri-* 'doté de la bonne rétribution'.⁴² There are words in -īra- whose -ī- in all likelihood represents a sec-

40 See *AiGr* 2.2: 26–27 and for details Leumann (1940: 225 = 1959: 318) and Jamison (1983: 149).

41 See *AiGr* 1.27; Zehnder (2007–2008: 197–198). Paul Thieme (*apud KEWA* 1.506) suggested that *tīrá-* may be explained as an outcome of **tī-ro-*, viz., **tīh₂-Ló-* in modern notation (cf. Lat. *trāns* 'across', Hitt. *tarḫu-* 'prevail' for the laryngeal). But morphological details are uncertain and the reconstruction of the liquid suffix is not otherwise supported.

42 See Pinault (1999–2000: 427–441).

ondary replacement of *-i-* going back to an interconsonantal laryngeal.⁴³ In theory, a Sanskrit sequence *-il-/-ūL-* may also represent *-Ūl-* from *-Ūḷ-* < **-Užd-* < **-Uzd-*,⁴⁴ while other words with prevocalic *-ŪL-* are clearly loanwords, e.g., *k(h)īla-* ‘post’, *mayūra-* ‘peacock’, *masūra-* ‘lentil’, *kharjūra-* ‘Indian palm’, etc. But there are yet other, derivationally isolated cases of *-ŪLV-* in Sanskrit, some of which may find their explanation in the rhotic degemination process examined in this paper.

One such case is Ved. *mūrā-* ‘dull, stupid, imbecile’ (RV+).⁴⁵ As Nussbaum (2015) showed, the PIE root **merh_x-* ‘to be slow’⁴⁶ spawned a number of thematic derivatives with the meaning ‘slow, retarded’, including OIr. *mer* ‘de-

43 As Jamison (1988) demonstrated, in Indo-Aryan an interconsonantal laryngeal was “vocalized” as *ī* only in the final syllable; see also Lipp (2009: 2.389–398) with ample references and more recently Kümmel (2016). The *ī* in nominal stems like *gabhīra-* ‘deep’ or *śārīra-* (n.) ‘body’ cannot therefore represent a regular development of root-final **h_x* before the suffix *-ra-*. In the case of adjectives *gabhīra-* and *śāvīra-* ‘powerful’, one may surmise that presuffixal *ī* was transferred from comparatives **ga(m)bhīyāms-* and **śāvīyāms-* where it would be expected (see Schindler (1986: 386–387) on the origin of the long *ī* in comparative suffix and Jamison (1988) on the secondary spread of *ī* in nominal and verbal categories). For *gabhīra-* specifically, Stephanie Jamison suggests (*apud* Nikolaev *forthcoming*) that lexical analogy to the rhyming root *grabhī* (*āgrabhūt*, *grā(b)hītar-*, etc.) may have played a role. Nominal forms like *śārīra-* or *pavīra-* ‘a kind of a metal weapon’ (*pāvīrava(nt)-* RV+) remain problematic. Only a few words of this structure may be explained as *ra-*-derivatives from *ī*-stems; cf. *āṇḍīra-* ‘having testicles’ (Class. Skt.+), from *āṇḍī-* f. (AV+) ‘testicles’ (see *AiGr* 2.2: 461). Frisk (1934: 41–43) argued that some stems in *-īra-* may be analyzed as derived from *cvi*-forms and cited *piṇḍīra-* ‘dry, juiceless’ (Lex.) next to *piṇḍa-* ‘lump’, *piṇḍī kṛ* ‘make into a lump’; I am not persuaded by this hypothesis, but there is no room for a detailed discussion of it in this paper.

44 On the sources of Sanskrit *-l-* see Lüders (1923).

45 *Contra* Whitney (1885: 124), it is quite unlikely that Ved. *mūrā-* is a derivative from the root *mūr(ch)-* ‘to coagulate’: while nominal formations *mūrchā-* (AVP+) and *mūrkhā-* (TS+) indeed have the meaning ‘mentally stupefied, stupid’, it is usually assumed that this is a secondary semantic development possibly facilitated by the similarity with *mūrā-* (Lüders 1909: 194¹). The root *mūrch-* (for which aor. *āmūrchat* AVŚ 20.34.12 is the earliest form, with other forms coming from much later sources) is based on a reanalysis of present stem **mṛh_x-ske/o-* (see *EWAia* 2.368). There are traces of non-extended root *mṛ-* in Indo-Aryan, e.g., *mūrtā-* ‘coagulated’ (AVP+), *mūrti-* (f.) ‘solid body’ (Br.+), but a plain thematic derivative with a zero grade in the root made from the root *mṛ-* could only have been **mūrā-* (< **mṛh_x-ó-*, cf. *°tirā-* from *tṛ-* ‘to cross’); for this morphological type see *AiGr* 2.2: 72–73 and for the phonological development cf. *purū-* ‘much, many’ < **pṛh₁-ú-* or *bhurā-* ‘to move rapidly’ < **bhṛh_x-e/o-*. Ultimately, *mūrā-* and *mṛ-* are probably related and go back to PIE **merh_x-*, but *mūrā-* is not a shallow derivative of *mṛ-*.

46 Cf. OIr. *maraid*, *-mair* ‘to last, to remain’ and Lat. *mora* ‘delay’ (Schumacher 2004: 476). Ved. *mṛ-* and *mūrch-* discussed in n. 45 above probably continue the same root (‘to flow slowly’ > ‘to coagulate’).

mented' (< **merh_x-ó-*),⁴⁷ Gk. (Ion.) μωρός 'stupid, obtuse, foolish' (< **mōr(h_x)-ó-*),⁴⁸ and Hitt. *marlant-* 'stupid', *marlatar* 'stupidity', *marle(š)š-* 'become dumb', etc.⁴⁹ Nussbaum demonstrated—to my mind, conclusively—that Hitt. **marla-* (< **m_hrh_x-lo-*⁵⁰) is a complete etymological match to Ved. *mūrā-* which would then go back to **mūr-ra-* < **m_hrh_x-lo-*.⁵¹

47 See Zair (2012: 136).

48 The comparison between Ved. *mūrā-* and Gk. μωρός goes back to the very beginnings of Indo-European studies (it was first proposed by Pictet (1856: 330), as far as I can tell), but the phonology has always been problematic. Normier (1977: 182²⁶) theorized that Skt. *mūrā-* and Gk. μωρός both go back to **mu_h₃-ró-*; this derivation was accepted by Rasmussen (1989: 71) and Olsen (2009: 357), but the development of word-medial **-uh₂₃-* to **-ūā/ō-* in Greek ("laryngeal breaking") remains controversial and Gk. θυμός (< **d^huh₂mó-* 'smoke', Hitt. *tuh_h-*) remains an important counterexample. Nussbaum's solution plausibly reconciles the Greek form with the Vedic without taking recourse to either debated phonological apparatus ("laryngeal breaking") or substrate influence (Pisani 1964: 117; I thank Massimo Poetto for the reference).

49 One wonders if Ved. *malvá-* 'foolish' (EWAia 2:334: "nicht überzeugend erklärt") may go back to the same root (**^{TP}mor(h_x)-uó-* > *malvá-* with dialectal *l*).

50 For a **-lo-* adjective extended with *-nt-* in Hittite cf. *maklant-* 'thin, slim' next to *maklatar* 'emaciation'.

51 YAv. *mūra-* 'stupid' may seem to present a problem for Nussbaum's analysis, but in fact the problem is only apparent: even though the word looks like an exact correspondence of Ved. *mūrā-*, it is unlikely to be related to it. In principle, YAv. *mūra-* may continue either Proto-Iran. **mūrā-* or Proto-Iran. **murā-* (de Vaan 2003: 284–290). The theory that Vedic and Avestan forms are cognates going back to **m_hrh_x-lo-* would require a development of unaccented **rH* to *ur* in Iranian after a labial consonant which is not assured: normally interconsonantal **rH* gives Iranian **-ar-* and unaccented **rH* becomes **-ər-* (Cantera 2017: 489). One possible example of unaccented **rH* > *-ur-* is YAv. *uruii.āp-* 'whose waters spread wide' (Yt. 8.46) analyzed by Cantera (2001: 44–45) as an outcome of **uruii-* < **uruii-* < **uruii-* < **h₁ur_hu_hu_h₂* (cf. Ved. *urví-* for **ūrvī-*), but on the one hand, this development may have been conditioned by *u* in the onset of the second syllable of **uruii-* and on the other hand, other explanations are available (Lubotsky 1997: 145–146).

However, Bartholomae's translation of YAv. *mūra-* as 'blödsinnig' (1904: col. 1189; Pirart 2004: 322) is based solely on the word's similarity with Ved. *mūrā-*: the Avestan word is attested in Yt. 5.93 in a list describing people with various physical defects who should not partake of Anahita's libations, and the form *mūrāasca* follows *andāasca* 'blind', *karənāasca* 'deaf', and *druuiāasca* 'paralyzed?'. The meaning 'mute' suggests itself, and the etymology presents itself virtually unbidden, cf. Ved. *mūka-* 'dumb, mute', Lat. *mūtus* 'id.' from clearly onomatopoeic PIE **muH-*. YAv. *mūraka-* may be a derivative of *mūra-*, but its meaning is uncertain: *dahakāca mūrakāca pouru.sarəða varšnāca* 'the *dahakas*, *mūrakas*, and *varšnas* of many kinds' (Y. 11.6) refer to daevic creatures presented in the text as antithetical to priests, charioteers, and husbandmen, but even if nom. pl. *mūrakāca* refers to a class of society, their precise identity is unknown (Josephson 1997: 115¹⁶). The word may just as well describe the monsters' inability to speak. To conclude, YAv. *mūra-* 'mute' and *mūraka-* '?' are in all likelihood unrelated to Ved. *mūrā-*.

3 Ved. *ūrú-*

I believe that another example of rhotic degemination may be found in Ved. *ūrú-* (m.) ‘thigh, shank’ (RV+).⁵² There is no Indo-European etymology for this word on the books: the search for a root $^{*}(h_x)\mu eh_x-$ with a suitable meaning from which $^{*}(h_x)uh_2-ru-$ (> Ved. *ūrú-*) could have been derived has not yielded a satisfactory result.⁵³ The idea presented in this section is that the sequence *ūr-* in this word results not from $^{*}uh_xL-$ but from $^{*}\mu Lh_x-$ in preconsonantal position⁵⁴ created by another (suffixal) liquid which was subsequently eliminated after the loss of the laryngeal, as argued in (2) above: $^{*}(h_x)\mu Lh_x-Lu-$ > $^{*}\mu\ddot{u}r-ru-$ > $^{*}\mu\ddot{u}r\acute{u}-$ > *ūrú-*.⁵⁵

3.1

Under the hypothesis that Ved. *ūrú-* goes back to $^{*}\mu\ddot{u}r-ru-$ with a simplification of geminate *rr*, the word may be analyzed as a derivative made from a root $^{*}(h_x)\mu erh_x-$ or $^{*}(h_x)\mu elh_x-$ with the suffix *-ru-*. This suffix is rare but not unknown in Vedic (cf. *dhārú-* ‘sucking’ ~ Gk. $\theta\eta\lambda\upsilon\varsigma$, *sátru-* ‘enemy’, or *bhīru-* ‘fearful’)⁵⁶ and its presence in the word for ‘thigh’ can be accounted for in two ways, either as a product of an established derivational mechanism or by analogy. In PIE, thematic adjectival stems were capable of producing *u*-stem abstracts by the model outlined by Nussbaum (1998: 527–528²²), e.g., $^{*}b^heh_2-no-$ (OIr. *bán* ‘white’): $^{*}b^ho/eh_2-nu-$ (Ved. *bhānú-*, Av. *bānu-* ‘lightbeam’) or $^{*}keh_2i-lo-$ (Goth. *hails* ‘sound’, Welsh *coel* ‘trust, (good) omen’): $^{*}koh_2i-lu-$ (Gk. $\kappa\omicron\iota\lambda\upsilon-\tau\omicron\kappa\alpha\lambda\omicron\nu$). In

52 See Forssman (1986) for a detailed overview of this word.

53 EWAia 1.242: “Eine überzeugende Deutung von $\ddot{u}^{\circ}$ aus iir. oder idg. Vorstufen scheint nicht vorzuliegen”; RIVELEX 2.430: “Die Etymologie ist nicht gesichert”. Lidén’s comparison to Lat. *vārus* ‘bent outwards, bow-legged’ (1907: 262–264) is phonologically and morphologically possible ($^{*}(h_x)\mu eh_2-ro-$ > *vārus*, $^{*}(h_x)uh_2-ru-$ > Ved. *ūrú-*), but semantically unattractive; it was therefore not met with much approval (see the critical appraisal by Forssman (1986: 339); for Lat. *vārus*, de Vaan (2008: 655) starts with the original meaning ‘with the legs opened’ and derives it from the same PIE root $^{*}h_1\mu eh_2-$ as *vānus* ‘hollow’). Forssman himself suggested a lexical four-part analogy (*bahú-* ‘large’: *bāhú-* ‘arm’ = *urú-* ‘broad’: X, where X is resolved as *ūrú-* ‘thigh’), but his explanation did not carry conviction.

54 See n. 38 above for this phonological development. Prevocalic $^{*}\mu Lh_x$ in a labial context would have given *ur* with a short vowel, see the examples in n. 45 above.

55 The loss of initial *v* before $\ddot{u}$ is regular, cf. *ūrmí-* ‘wave’ < $^{*}\ddot{v}ūrmí-$ (< $^{*}TP_{\mu}Hmi-$) or aor. mid. participle *urāṇá-* < $^{*}vurāṇá-$ (< $^{*}TP_{\mu}Lh_1m_hno-$), see AiGr 1.261–262. On the basis of metrical evidence Beguš (2015: 545–546) argued that the loss of *v* before the long high vowel $\ddot{u}$ preceded its loss before the short $\ddot{u}$.

56 See AiGr 2.2: 861; Pinault (1997: 228); see also Schaffner (2001: 500) (on Germ. $^{*}\chi u\eta\chi ru-$ ‘hunger’; differently Neri 2003: 289–303) and Garnier 2017 (on OIr. *ul* ‘beard’ < $^{*}(h_x)pu-lu-$).

the same way, the derivational basis for substantive $^{*}(h_x)\mu Lh_x-Lu-$ ($> ^{*}\mu\bar{u}r-ru-$) could have been provided by an adjectival stem $^{*}(h_x)\mu Lh_x-Lo-$. But it may in the end be more economical to assume that $^{*}\bar{u}r\acute{a}-$ ‘thigh’⁵⁷ was remade to $\bar{u}r\acute{u}-$ by lexical analogy to another u -stem word for a body part, namely, $b\bar{a}h\acute{u}-$ ‘arm’.⁵⁸ Under this analysis we only need to posit one nominal stem, namely, $^{*}\mu\bar{u}r-ra- < ^{*}(h_x)\mu Lh_x-Lo-$.

3.2

Several Iranian cognates have been proposed for Ved. $\bar{u}r\acute{u}-$, but these proposals are ultimately not compelling.

Werba (1986: 334–335³) identified YAv. $uru-$ as the second member of a demon’s name $Spitiura-$ (Yt. 19.46) and conjectured a form of this word in Yt. 5.7. If the Avestan counterpart of Ved. $\bar{u}r\acute{u}-$ were indeed $uru-$, it would be problematic for the etymology of the Sanskrit word pursued in this paper: the sequence $^{*}\mu Lh_xC-$ is normally reflected as $var-$ or $v\bar{a}r-$ in Avestan, probably depending on the position of the accent;⁵⁹ cf. $^{*}\mu r\bar{h}_x\bar{g}- > \text{YAv. } var\bar{a}z-$ ‘strength’, $v\bar{a}r\bar{a}zi-$ ‘strong’ (Ved. $\acute{u}rj-$ ‘nourishment, strengthening’), $^{*}h_2\mu Lh_1neh_2 > \text{YAv. } var\bar{a}n\bar{a}-$ ‘wool’ (Ved. $\acute{u}r\bar{n}\bar{a}-$), or $^{*}\mu Lh_xmi- > \text{YAv. } var\bar{a}mi-$ ‘wave’ (Ved. $\bar{u}rmi-$).⁶⁰ The expected outcome of Proto-Indo-Iranian $^{*}(H)\mu rHru-$ in Avestan would therefore have been $^{*}v\bar{a}ru-$ or $^{*}v\bar{a}ru-$, not $uru-$. However, Werba’s proposal lacks conviction: the meaning of the Avestan personal name is, of course, unknown and other interpretations are possible,⁶¹ while Werba’s conjecture $^{*}uruca$ in Yt. 5.7 is very doubtful and in fact unnecessary.⁶² “YAv. $uru-$ ” is a *vox nihili*.

57 An a -stem $\bar{u}ra-$ ‘thigh’ is actually attested (BhagPūraṇa+), but this form is unlikely to be a precious relic of thematic Indo-Iranian word for ‘thigh’.

58 For close textual association between $\bar{u}r\acute{u}-$ and $b\bar{a}h\acute{u}-$, see Forssman (1986: 341–342), who cites 20 passages in Vedic literature where these words are used side by side (e.g., ŚB 11.1.6.33 $dv\bar{a}u b\bar{a}h\acute{u} dv\bar{a} \bar{u}r\acute{u}$). A similar analogical remaking happened in Umbrian where abl. sg. $p\bar{e}r\bar{i}$ ‘foot’ is due to the influence of the u -stem abl. sg. $man\bar{i}$ ‘hand’, and vice versa, acc. pl. $man\bar{f}$ was remodeled after $^{*}ped\bar{f}$ (Weiss 1993: 43–46). For the analogical influence of u -stem words for body parts in Germanic (where $^{*}f\bar{o}t-$ ‘foot’ was remade as $^{*}f\bar{o}tu-$) see Griepentrog (1995: 155) and for the case of Old English $nosa$ ‘nose’ see Neri (2003: 146⁴²²); cf. also Hitt. $mal\bar{i}šku-$ ‘weak’ which was probably reshaped to a u -stem by contamination with its antonym $daššu-$ ‘strong’. (I would like to acknowledge advice from Stefan Höfler, Craig Melchert, Sergio Neri, and Michael Weiss).

59 See Cantera (2017: 489).

60 YAv. $urui(\bar{a}pa)-$ does not necessarily show the development of unaccented $^{*}rH$ to ur in Iranian, see n. 51 above.

61 See Nikolaev (2021) for a defense of Bartholomae’s analysis ‘having white lambs’ (Bartholomae 1900: 137).

62 For the text see Schmeja (1976: 230); Oettinger (1983: 197–202); Swennen (1998: 211); and a summary in Nikolaev (2021: 147¹⁰).

Bailey (1979: 492) compared Ved. *ūrú-* to Khot. *hurāa* ‘thigh’,⁶³ but the Khotanese word is in all likelihood unrelated: the initial *h-* is very problematic for Bailey’s etymology and while it may in theory be prothetic,⁶⁴ the more natural explanation is to take it from Proto-Indo-Iranian **s*, in which case Khot. *hurāa* (< **hūrā-ka*-⁶⁵ ← Proto-Indo-Iranian **sūrā-* < PIE **suh_x-reh₂*) may be directly related to Latin *sūra* ‘calf of the leg’ (< **suh_x-reh₂*) and Greek (Ionic) ὤρη ‘thigh (as part of the sacrificial victim)’ (< **suoh_x-reh₂*).⁶⁶

Osset. (Iron.) *wærag* ‘knee’ (< **uara-ka-*) compared to Ved. *ūrú-* by Abaev (1989: 88) may in theory be phonologically compatible with Proto-Iranian **u_{ra}-* (< **(h_x)u_hh_x-lo-*),⁶⁷ but the semantic distance between ‘thigh’ and ‘knee’ is considerable and the Ossetic word may in fact belong to a different root.⁶⁸ Nevertheless, traces of Iranian **uar-* ‘thigh’ (< Proto-Indo-Iranian **uar-* or **u_{ra}(r)-*) may be found in Chechen *varie*⁶⁹ ‘thigh’, Ingush *voruv* ‘thigh’, and, with a semantic shift, Bats *varang* ‘shoulder’: these Nakh words are isolated in North East Caucasian (there is no comparative material in Dagestanian languages⁷⁰), which lends credence to Abaev’s view that they may represent Alanian loanwords.⁷¹ Beside this rather tenuous evidence for Iranian **uar-*, Ved. *ūrú-* remains isolated in Indo-Iranian.

63 The meaning ‘thigh’ is assured by the passages in the late Khotanese medical text *Siddhasāra* for which Tibetan and Sanskrit versions are known. For the declensional type cf. loc.pl. -*āvā*.

64 Cf. *hāma-* ‘raw’ < **āma-* or *hāysā* ‘skin, hide’ < **jā-*. Note the recent work by Kümmel (2020) arguing that “prothetic *h-*” in Khotanese may in fact go back directly to **h₂*.

65 **ū* would have been regularly shortened before **r* in Khotanese.

66 The preform **(h_x)u_hh_x-lō- / -lēh₂-* would probably lead to Proto-Iranian **u_{ra}-* (with a loss of the laryngeal, see Cantera (2017: 489)) > **u_{ra}-* > **u_{ra}-*, but the initial **u* would have been reflected in Khotanese as *b-*, cf. *birgga-* ‘wolf’ (Proto-Iranian **u_{ra}-*), *bile* ‘intestines’ (< **u_{ra}-* ‘soft’), *bilga-* ‘kidney’ (< **u_{ra}-*), *balysana-* ‘limited district’ (< **u_{ra}-*), etc.

67 Cf. *bærzond* ‘high; height’ < Proto-Indo-Iranian **b_hǵ_hant(a)-*, Ved. *bṛhánt-*; *zærdæ* ‘heart’ < **ǵ_hrdaja-*, Ved. *hṛd-*.

68 Osset. *wærag* is usually taken to be from PIE **uel-* ‘to turn, to bend’ (Bielmeier 1977: 229–230).

69 In the transliteration of Nichols & Vagapov (2004); the forms are cited in the nominative singular.

70 See Klimov & Khalilov (2003: 85); Comrie & Khalilov (2010: 210–211).

71 Abaev (1959: 100 & 1989: 88). The Iranian origin of *varie* is accepted in the etymological dictionary of Chechen (Vagapov 2011: 174–175). Several other words for body parts in Nakh languages have been borrowed from Iranian, e.g., Chechen *t’aara* ‘teat’ (Osset. Iron. *tar* ‘chest’ < Iran. **tāra-*), *t’ingar* ‘belly’ (Osset. Iron. *dængæal* ‘swollen’), Ingush *bokqar* ‘croup, ingluvies (in a bird’s digestive system)’ (Osset. Iron. *boqqwyr* ‘double chin’ < *bog* ‘uncastrated bull’ + *qwyr* ‘neck’), Ingush *gholg* ‘knucklebone (in a game)’ (Osset. Digor. *golæ* ‘knucklebone, joint’), Chechen *qias* ‘mane’ (Osset. *qīs* < Iran. **gāisa-*). For linguists-

3.3

Assuming that the proposed derivation of Ved. *ūrú-* from $*(h_x)u_lh_x\text{-}Lo\text{-}$ does not flounder on dubious phonology, what could the underlying root $*(h_x)uelh_x\text{-}$ or $*(h_x)uerh_x\text{-}$ be? There are two possibilities.

3.3.1

First, we may consider the root $*h_luerh_x\text{-}$ ‘wide, broad’.⁷² An adj. $*h_lurh_x\text{-}lo\text{-}$ ‘broad’ would not be out of place in a Caland system which is well documented for this root.⁷³ There are ample parallels for words with the meaning ‘wide, thick, fat’ giving rise to words for ‘thigh’: cf. PDE *thigh* < Gmc. $*peuho\text{-}$ < $*teuk\text{-}$, Lith. *tùkti* ‘to be(come) fat’⁷⁴ or Lat. *femur* ‘thigh’ vs. Gk. $\theta\alpha\mu\acute{\upsilon}\varsigma$ ‘thick’.⁷⁵ Similarly, adj. $*h_lurh_x\text{-}lo\text{-}$ may have acquired the meaning ‘thigh’ via the mechanism known as “transferred epithet”, assuming that adj. $*h_lurh_x\text{-}lo\text{-}$ ‘thick’ was used in a fixed expression with a word for ‘leg’ (cf. Swed. (dial.) *bus-lägg* ‘thigh’ lit. ‘swollen leg’⁷⁶ or Wakhi *bajlāng* ‘thigh’ lit. ‘thick leg’⁷⁷) or was simply substantivized as ‘the thick one’.⁷⁸

3.3.2

But there is a different etymological possibility that allows for directly comparing Ved. *ūrú-* with a word for ‘thigh’ in a different IE language. This is the analysis pursued in this paper.

Hitt. $^{(UZU)}(u)walla\text{-}$ ⁷⁹ (c.) was identified as a name for a body part early in Hittite studies, and, on the basis of attestations known at the time, Alp (1957: 26–27) proposed a contextually plausible translation ‘thigh’, which has been

tic contacts between Alanian and Nakh languages see Troubetskoy (1922); Abaev (1959); Thordarson (2009: 23–28).

⁷² See NIL 250–251.

⁷³ Besides the *u*-stem $*h_lurh_x\text{-}u\text{-}$ ‘broad’ (Ved. *urú-*, Gk. $\epsilon\upsilon\rho\acute{\upsilon}\varsigma$, OAv. *vouru-*), cf. Av. *uruui.āp-* ‘whose waters spread wide’ (see above n. 51 for the phonology of the form), *s*-stem abstract Ved. *váras-* ‘expanse’ = Gk. $\epsilon\upsilon\rho\acute{\upsilon}\varsigma$, comparative Ved. *váriyas-*, etc. For Caland associations of $*lo\text{-}$ stems in general cf. Gk. $\mu\epsilon\gamma\acute{\alpha}\lambda\omicron\text{-}$, Goth. *mikils* ($*megh_2\text{-}$), ON *karl* ‘man’ ($*gerh_2\text{-}$), Hitt. *tūwala-* ‘long’ ($*deuh_2\text{-}$), Old Prussian *toūlan* / *tūlan* ‘much’ ($*teuh_2\text{-}$), OCS *teplъ* ‘warm’ ($*tep\text{-}$), etc.

⁷⁴ On the possible relationship between $*teuk\text{-}$ and $*teuh_2\text{-}$ ‘be fat’, see Neri & Ziegler (2012: 42 & 46).

⁷⁵ This analysis of Lat. *femur* was proposed by Alan Nussbaum (*apud* Nikolaev 2010: 62²⁷).

⁷⁶ See Rietz (1862–1867: 67).

⁷⁷ See Steblin-Kamenskij (1999: 92).

⁷⁸ On the difference between these two mechanisms, namely, ellipsis-based substantivizations and direct substantivizations, see Höfler (2020).

⁷⁹ On the singular spelling *ú-wa-al-la-aš* (KUB 55.53 i 11) see Kloekhorst (2008: 944).

widely accepted in later scholarship. Both humans and animals have a right and a left *walla-* made up of bones and meat, the latter being particularly desirable;⁸⁰ in catalogs of body parts, *walla-* is listed between the lap and the knee, and, in the vocabulary list KBo 1.51. rev. 6, *walla-* translates Akk. *pēmu* ‘thigh’ (CAD/P 321).⁸¹ Next to Hitt. *walla-* we find an *i*-stem *walli-*, easily identifiable as a Luwian intrusion: for instance, the word is used in Hittite-Luwian ritual fragment KUB 35.146 (MS, CTH 767) where we find acc. sg. *wallin* and acc. pl. *wallinza*.⁸²

In her study of Hittite construction rituals, Kellerman (1980: 70–71) argued that in KBo 4.1 obv. 47ff. (CTH 413) and KBo 15.24 ii 20 (CTH 415A) the word *walla-* refers to metal stakes laid at the foundation of a temple. Tischler (1995) took the construction usage as the original one and argued that *walla-* ‘stake, post, bolt’ is related to Gk. ῥῆλος ‘nail’ and Goth. *walus** ‘staff’.⁸³ However, it seems more likely that the meaning ‘stake’, etc. is secondary, owing to the metaphorical use of the word for a body part;⁸⁴ in fact, it cannot be excluded that the reference in construction rituals is to metal objects (models) that were shaped like a thigh. Under the view that ‘thigh’ is the original meaning of Hitt. ^(UZU)*walla-*, the word has remained etymologically isolated.⁸⁵

Phonologically, a comparison with Ved. *ūrú-* ‘thigh’ does not seem to present any problems, even though the exact preform of Hitt. *walla-* cannot be determined with complete certainty: the Hittite word is best taken from **(h_x)uolh_x-lo-*,⁸⁶ but **(h₁)uelh₁-(l)o-* and perhaps even **(h₁)ulh_x-lo-* may be equally possible.⁸⁷ Under any analysis, Hitt. *walla-* ‘thigh’ goes back to a root **(h_x)uelh_x-* and

80 The uncanny similarity between Hitt. *wallaš/n ḥaštai* ‘(meat on the) thigh bone’ (see Poetto (2000: 109)) and Ved. *ūrvastha-* (ŚB 8.7.2.17+), Pāli *uraṭṭhi* ‘thigh bone’ is perhaps worth mentioning.

81 See Cohen (*forthcoming*).

82 See Tischler (1995) and HEG 4.231–234 with updated bibliography to which one should add Mouton (2005: 140–141).

83 On this root see Neri (2003: 255–257).

84 As Tischler himself correctly observed, we are dealing with “ein Bauelement, das ähnlich wie ein Schenkel geformt ist”. Comparable metaphors are found in OE *scīa* ‘leg’ vs. MHG *schīe* ‘post’ or Gk. *σίῶν* ‘pillar’ and Arm. *siwn* ‘id.’ (< **kīh_xuōn*), compared to **(s)kih_xu-* ‘shin’ (Skt. *aṣṭhīvā-*, YAv. *ascūm* ‘shank’) by Karl Praust (*apud* Lubotsky 2002: 323).

85 Kloekhorst (2008: 944), unaware of Tischler (1995), states that there is “[n]o further etymology”. Weiss (2010: 270⁸⁷) tentatively took *walla-* from **uat-s-lo-* and compared Umbr. *vatuva* identified by him as a body part, possibly thigh.

86 Plain thematic *o*-grade **(h_x)uólh_x-o-* would be expected to lose the laryngeal by the Sausure Effect and come out as Hitt. **wala-* (Kimball 1999: 341–344), but also the references in n. 30 above); in theory, however, ⟨ll⟩ may be ascribed to the influence of Luwian (cf. acc. pl. *wallinza* mentioned in the main text above).

87 **(h₁)ulh_x-(l)o-* would be expected to give †*ūlla-*; cf. **h₂urgi-* > *hurki-* ‘wheel’, **h₂urne-* >

is thus fully compatible, phonologically and semantically, with Ved. *ūrú-* if the latter goes back to analogically remade **(h_x)ulh_x-Ló-* or a derivative thereof.⁸⁸

3.3.3

A tertium comparationis for Ved. *ūrú-* and Hitt. *walla-* may be found in Latin: this is the word *volva* (Var.+), Class. Lat. *vulva* (f.) ‘human or animal womb; female sexual organ’.⁸⁹ The standard etymology suggests a connection with the root **uel-* ‘to turn, wrap up, enclose’, assuming that ‘uterus’, viz., ‘membrane enclosing a fetus’ was the original meaning of the Latin word.⁹⁰ This is not an unreasonable approach: even though the meaning ‘female genitals’ (Pers.+) is not attested for *vulva* much later than the meaning ‘womb’, the diminutive *vulvula* is used by Gn. Naevius (3rd cent. BCE) in the meaning ‘sow’s womb used as food’.⁹¹ Nevertheless, in theory it remains possible that *vulva* originally referred to external female genitalia and then started to be applied to uterus secondarily. Under this (admittedly speculative) assumption one may tentatively entertain an etymological connection between Lat. *vulva* and the Vedic and Hittite words for ‘thigh’.⁹² The immediate phonological advantage of this analysis over the traditional connection with the root **uel-* ‘to enclose’ is the explanation of *vulva* with its unassimilated cluster **-lu-* as a syncope product of pre-Latin **uelauā*⁹³

hurnezzi ‘sprinkles’. For the development of initial **ul-* cf. *u-ur-ri-er* ‘they helped’ (KBo 3.60 ii 7 (OH/NS)) < **ulh_i-*. However, **ulla-* could then undergo a later (MH) development to *walla-*, cf. OH *ulkiššara-* > NS *walkiššara-* ‘skilled’ (see Kloekhorst (2008: 93–94²⁰³) and for the etymology n. 102 below) or OH *úrani* > MH *warani* ‘burns’, unless this change is viewed as an adjustment of the zero-grade middle to the root vocalism of act. *warnu-* (I would like to thank Craig Melchert for discussing these problematic forms with me). Hitt. *walla-* may therefore go back to **(h_i)ulh_x-o-* or **(h_i)ulh_x-lo-* (identical with the pre-form postulated for Ved. *ūrú-* above), as long as it is assumed that the spelling *walluš* in KUB 39.1 iv 9–10 (OH/NS) is an NS intrusion in the late copy.

88 After this paper was presented at the 40th East Coast Indo-European conference in June of 2021, I was pleased to learn through the courtesy of Václav Blažek that he already proposed a comparison between Ved. *ūrú-* and Hitt. *walla-*, without, however, addressing the long *ū* of the Vedic form (Blažek 2000: 55).

89 For the change **o > u* / *__lC* cf. **uelti* ‘wants’ > *volt* > *vult*, see Weiss (2020: 151).

90 See de Vaan (2008: 689). The usual comparandum is Ved. *úlba-* n. (RV 10.51.1+), *úlva-* (VS 19.76+) ‘womb’ (see *AiGr* 2.2: 867, *EWaia* 1.232), but the alternation *úlba-* / *úlva-* may suggest foreign origin of the Vedic word (Kuiper 1955: 179). Recently, Merritt (*forthcoming*) argued that Lat. *volva* is related to Ved. *ūrvá-* ‘enclosure’ and Gk. εἰλῶν ‘wrap’ from a root **uelh_x-*.

91 Fr. 23 Ribbeck; codd. *bulbam*.

92 Hitt. *walla-* was tentatively compared to Lat. *vulva* by Carruba (1991: 174) in the context of his (very doubtful) connection with Lyc. *lada-* ‘wife’ as “die Umhüllte”.

93 For syncope feeding *e > o* / *__lC* cf. **ueluūō* ‘roll’ > *volvō* (Weiss 2020: 135 & 150).

(^{TP}(*h_x*)*uel_x-ueh₂*⁹⁴) where the medial **-a-* would be the expected vocalization product of the root-final laryngeal posited in the hypothetical root **(h_x)uelh_x-* in order to explain Ved. *ūrú-*. By contrast, pre-Latin **uel-ua-* from PIE **uel-* ‘to enclose’ (so the traditional etymology) would be expected to give **volla*.⁹⁵

Granted ‘female genitals’ was the original meaning of Lat. *vulva*, how would the comparison with Hittite and Vedic words for ‘thigh’ work semantically? Across cultures, thighs are a common euphemism for genitals. One term for intercourse in Greek comedy is διαμηρίζειν ‘get between the thighs’ (Ar. Av. 669), which reminds of Apuleius’ coinage *interfeminium* ‘the space between the thighs’ (Apul. *Apol.* 33), but hardly served as its model.⁹⁶ Queen Medb in Irish heroic saga is in the habit of offering sexual intimacy to men in exchange for alliances or services, calling these favors *cardes mo śliasta-sa fessin* ‘the friendship of my thighs’ (LL 97). In Vedic, *sakthī* ‘thigh’ (du.) is regularly used to refer to female genitals, e.g., *ūt sakthyòr grdām dhehi* ‘bring the penis into the two thighs’, uttered by the priest during the performance of the Ásvamedha ritual (TS 7.4.19)⁹⁷ or an even more explicit phrase *prayapsyánn iva sakthyáu | ví na indra mṛdho jahi* ‘like someone who is going to bring the penis into the two thighs, smash aside our enemies, o Indra’ (TB 2.4.6.5.2–35 ~ ĀśŚS 2.10.14).⁹⁸ Examples could easily be multiplied.⁹⁹ In fact, there is at least one specific

94 PIE *o*-grade **uolh_x-ueh₂* > **uol-ueh₂* (with the Saussure Effect) would have given **volla*, cf. **solh_xuo-* ‘whole’ > **soluo-* > *sollo-* (→ *sollers* ‘skilled’). PIE zero-grade **(h_x)ulh_x-ueh₂* would have given **lāva*, cf. **h₂ulh₁-neh₂* ‘wool’ > *lāna*.

95 The root **uel-* ‘to enclose’ did not have a root-final laryngeal: Ved. *vr-* (in which several PIE roots have fallen together) is *anīṭ* and Gk. εἰλέω and OIr. *fillim* do not indicate a laryngeal either (compare further Hsch. γ 106 γάλλια: ἔντερρα < **ul-no-*). Lat. *volvō* ‘to roll’ (if from the same root) goes back not to **uelauē/o-* with a laryngeal reflex but to **ueluue/o-*, a thematized *u*-present of the type Gk. τανύω ‘stretch’, ἀνύω ‘accomplish’, etc. De Vaan (2008: 689) does not comment on the phonological difficulty of deriving Lat. *vulva* from **uel-ua-*; the reason he accepted this etymology may have been Schrijver’s dismissal of the development **lu* > Lat. *ll* (1991: 293–294; see also Prósper 2017: 90–95), but this sound change is in fact beyond doubt (Driessen 2005: 41–48).

96 Cf. also μῆρῶν μεταξύ ‘(penis growing) between the (woman’s) thighs’ (Archil. fr. 66) or Solon 16.2 (Gentili–Prato) μῆρῶν ἱμείρων ‘desiring thighs’ (in a pederastic context). Note also the clever word-play in an epigram of Rufinus (AP 5.36.2 = 12.2 Page), in which μῆρι-όνην is employed to signify the female genitalia (τίς ἔχει κρείσσονα μῆριόνην ‘which of the three girls had the best pussy’): the form is perhaps best interpreted as acc. of an *ā*-stem **μῆριόνη* which at the same time makes an allusion to the name of the hero Meriones.

97 See Watkins (1995: 265–276).

98 On this passage see Nikolaev (2015: 232–235).

99 Parallels are not limited to Indo-European traditions: Bibl. Hebrew *yarek* ‘thigh’ is used to refer to male genitalia at *Gen.* 24 and to a woman’s womb (or external genitals?) at *Num.* 5.22.

instance in which a word for female genitals may be etymologically related to a word for thigh elsewhere in Indo-European, namely, Gk. ἰχταρ ‘female genitals’ (Hp. *Mul.* 2.174) for which Weitenberg (1976) offered a compelling comparison to Hitt. *ikt-* ‘leg’.

In view of these parallels,¹⁰⁰ the proposed derivation of Lat. *vulva* from the same root as Ved. *ūrú-* and Hitt. *walla-* ‘thigh’ becomes a possibility to consider seriously: the meaning ‘female genitals’ may be due either to an euphemistic use ($*(h_x)uelh_x-uo$ ¹⁰¹ ‘thigh’ > ‘female genitals’) or to a morphological derivation of some kind (e.g., possessive $*(h_x)uelh_x-uo$ ‘occupying the thighs’¹⁰² or locative $*(h_x)uelh_x-uo$ ‘located at/between the thighs’¹⁰³).

3.4

To conclude this section, three terms for body parts have been argued to be etymologically related: Ved. *ūrú-* ‘thigh’ (< $*ūrrú-$ < $*(h_x)ulh_x-Lu-$ ← $*(h_x)ulh_x-Lo$ ¹⁰⁴), Hitt. *walla-* ‘thigh’ (< $*(h_x)uolh_x-lo-$, $*(h_l)uelh_l-o-$ or $*(h_l)ulh_l-(l)o-$), and Lat. *vulva* ‘external female genitals’ (< $(h_x)uelh_x-uo$). Even though the exact preform of the Hittite word cannot be determined with complete certainty (see 3.3.2), while the comparison with Latin *vulva* requires an additional semantic assumption, namely, that the meaning ‘uterus’ is secondary (see 3.3.3), the

¹⁰⁰ Note also H.D. Jocelyn's suggestion that Lat. *fēmina* (n.) ‘female genitals’ may be a derivative of *femur*, *feminis* with a long vowel analogical to *fēmina* (*apud* Adams 1982: 93³), even though there is little reason to reject a straightforward connection with *fēmina*.

¹⁰¹ *o*-stem $*(h_x)uelh_x-uo$ is reconstructed here under the assumption that the word for female genitals and uterus secondarily became feminine in Latin due to its meaning and was transferred to the *ā*-declension.

¹⁰² Cf. Ved. *ṛṣvá-* ‘high’ < $*h_3r-s-uo-$ ‘occupying height’ ($*h_3er-es-$ > Gk. ῥπος; but see Martin Peters *apud* EWAia 1.262) or OCS *vlaxъ* ‘sorcerer’ < $*ul̥k-s-uo-$ ‘having magical powers’ ($*uelk-es-$ > Ved. *várcas-* ‘brilliance, vital power’, $*ul̥k-s-ró-$ > Hitt. *ulkiššara-* ‘skilled’; see Klingenschmitt (1994: 251); Oettinger (2017: 260)). For possessive denominal *-uo-* see further *AiGr* 2.2: 868 and Rix (1981: 285–287).

¹⁰³ For locative function of *-uo-* cf. $*prh_2-uo-$ ‘located in the front’ > ‘first’ (Ved. *púrva-*, Toch. B *parwe* ‘earlier’, *pārweṣṣe* ‘first’, OE *forwest* ‘first’, Gk. πρῶρα ‘prow’, etc.), $*kei-uo-$ ‘located here’ > ‘close’ (Ved. *śéva-* ‘dear’, Lat. *civis* ‘citizen’, see Vine (2006b: 148–149)), $*sel-uo-$ ‘by oneself’ > ‘one’s own’ (OIr. *selb* ‘property’), see Neri (2013: 197, 199). However, according to another school of thought, the function of *-uo-* in $*prh_2-uo-$, etc. was “kontrastiv-exklusiv” / oppositional (Vine 2006b: 148 (with references); Dunkel 2014: 217; Oettinger 2017).

Another way of analyzing Proto-Italic $*uelauā-$ is by assuming a derivative of $*(h_x)uelh_x-u-$ or even a remade dual form of this stem, but a direct comparison of this hypothetical *u*-stem with Ved. *ūrú-* ‘thigh’, du. *ūrú* would be reckless.

¹⁰⁴ See above for the likely alternative that there never was a *u*-substantivization of thematic $*(h_x)ulh_x-Lo-$, but thematic $*(u)urá-$ < $*ūrrá-$ < $*(h_x)ulh_x-Lo-$ was remade as a *u*-stem by contamination with *bāhú-* ‘arm’.

main attraction of this analysis is the phonological explanation of the long vowel in Ved. *ūrú-* ‘thigh’ as a regular product of a “long syllabic resonant” in the sequence $*CL_hC-$. At present, I remain agnostic about further connections of the root $*(h_x)uelh_x-$; ¹⁰⁵ the available evidence is insufficient to determine the quality of the root-final laryngeal or establish whether there was an initial laryngeal in this root. ¹⁰⁶ The development $*(h_x)u_lh_xLV- > *ūrrrV- > ūrú-$ shows that the sequence *-rr-* that arose secondarily in Indo-Aryan after the loss of the laryngeal was eliminated through degemination in accordance with predictions made in section 2 of this paper.

4 Further examples of rhotic degemination

Following the adage that ten bad etymologies are better than one good one, ¹⁰⁷ I would like to signal several other etymological possibilities for Sanskrit words containing otherwise inexplicable prevocalic *-ŪL-*. As often with etymologies, they range from merely possible to unprovable, questionable, dubious, hopeless, ludicrous, and outlandish. One problem shared by the etymologies presented below is the total absence of comparative evidence for a liquid suffix. For instance, the old comparison between Ved. *múla-* ‘root of a plant’ and Gk. *μῶλυ* ‘mythical herb’ may be revived under the assumption that *múla-* < $*m_lh_xLo-$ (while *μῶλυ* < $*mólh_xu-$), but the reconstruction of the suffix $*-ro-$ or $*-lo-$ in this form is entirely hypothetical. The quality of some other examples is diminished by the uncertainty about the meaning of the Sanskrit word. For instance, if Ved. *śīrá-* (always of fire in the RV, also as a first compound member in *śīrá-śociṣ-*) means ‘making hot/cooked’, the word may be compared to Ved. *śráya-ti* ‘be fervent, become cooked’ and derived from $*k_lh_xLó-$; ¹⁰⁸ but the exact mean-

105 Blažek (2000: 55) compared the root $*uel-$ ‘to turn’ (see n. 88 above) and cited some of its derivatives referring to body parts: Lat. *valgus* ‘bow-legged’, Oicel. *vil* (pl.) ‘intestines’, Gk. *γάλλια* ‘entrails’. While the meanings of these words agree with the concept of bending and curving inherent in the root $*uel-$ (cf. Gk. *ἐλιξ* used of intestines by Aristotle *P.A.* 675b 24), they still remain semantically distant from ‘thigh’. Another problem is that the root $*uel-$ did not have a root-final laryngeal (see n. 95 above) which would be necessary for the explanation of Ved. *ūrú-* advanced in this paper.

106 None of the proposed cognates require the reconstruction of an initial laryngeal. If Hitt. *walla-* is taken from a zero-grade $*(h_x)u_lh_xlo-$ (see n. 87 above), the initial laryngeal can only have been $*h_l$.

107 Adapted (and mistranslated) from Lehrs (1902), whose ninth commandment for philologists was “Du sollst nicht glauben, dass zehn schlechte Gründe gleich sind einem guten.”

108 The underlying root $*kleh_x-$ may be an extended form of $*kel-$ (*LIV* 323, Lat. *calēre* ‘be warm’), see *EWAia* 2.668–669.

ing of the Vedic word is unknown. Another example is Ved. *kīrī-*: if the word means ‘praiser’, it can be taken from the same root *kṛ̥-* as *kīrtī-* ‘praise’ and *kārā-* ‘chant of victory’ and derived from **kṛ̥H-Li-*,¹⁰⁹ however, according to Jamison (1991: 251–252), the contexts favor the translation ‘humble, mere, weakling’,¹¹⁰ in which case the proposed etymology obviously falls.¹¹¹ With these caveats in mind, the following cases may offer additional support for the rhotic degemination process examined in this paper.

The etymology of Ved. *kūla-* ‘slope, hillside’ (RV+) is uncertain:¹¹² Vine’s derivation from **kḷh₃-o-* ‘elevation’ is very plausible (2006a: 507), but his solution requires a secondary thematization of an unattested root noun **kūl-*.¹¹³ Building on Vine’s proposal, I submit that the Vedic word may go back to **kḷh₃-Lo-* ‘elevation’ (from the root **kelh_x-*, Lat. *culmen* ‘summit’, Lith. *kėlti* ‘raise, lift’, PDE *hill*).¹¹⁴

Besides familiar *dhīra*₁ ‘wise, characterized by insight’ (*dhī-*), there is another word *dhīra*₂ (BhagGīta+) that refers to a different set of personal qualities: ‘steady, brave, energetic, well-controlling, self-possessed’.¹¹⁵ It cannot be made from the root *dhṛ-* ‘to uphold’ which is anīṭ (cf. ipv. *didhṛtam*, *dhṛtā-*, *dhartār-*, *dhārman-*, etc.). According to *AiGr* 2.2: 857 (followed by *EWAia* 3.278), *dhīra*₂ is etymologically identical with *dhīra*₁ which was reanalyzed in post-Vedic times as a derivative of *dhṛ-*, which is not implausible, albeit unprovable. Even though the late date of the Sanskrit word invites caution, a supposition may be made that *dhīra* < **dhīr-rá-* goes back to the same form **d^hḷh₁-ró-* as Gk. θαλερός ‘blooming, fresh’ (often used of people in the meaning ‘vigorous, robust’) and Arm. *dalar* ‘green, fresh’ (for the root see *LIVAdd.* s.v. **d^helh₁-*).¹¹⁶

109 *EWAia* 1: 357, following the lead of Thieme.

110 *RVC ad RV* 5.52.12 notes “the fact that the word is regularly followed by *cid* ‘even’ and often refers to a person receiving divine aid despite his condition”.

111 Lubotsky (1988: 28) surmised that the word is non Indo-European.

112 Mallory & Adams (2006: 181) compared OIr. *cúl* ‘back’ and Lat. *cūlus* ‘arse’ (< **kuh_x-lo-*), which does not convince semantically.

113 As Vine himself admits, this is “le fait le plus dérangement”.

114 A plausible alternative is **kṛh_x-Lo-* ‘*Abhang*’ from the root **kerh_x-* ‘hang’ (Lith. *kárti*, *LIV* 353) for which Gk. κρημνός ‘embankment, edge of a river’ vs. κρέμαμαι ‘I am suspended, hang’ provide a nice semantic parallel. I thank Stefan Höfler for a discussion of this idea.

115 On 23 July 1861 Otto Böhtlingk wrote to Rudolf Roth from St. Petersburg: “*dhīra-* macht mir viel Kopfbrechens. Aus der Bedeutung klug, verständlich kann ich die von beständig nicht recht entwickeln” (Brückner & Zeller 2007: 302). Two homophonous words *dhīra*₁ ‘wise’ and *dhīra*₂ ‘firm’ were also accepted by Gonda (1936: 169).

116 Gk. θαλερός is probably remade from **θéléρος* (< **d^hḷh₁-ro-*) with later accent shift by analogy to oxytone *ro-* adjectives; the root vowel /a/ was imported from the nasal-infixed verbal

Greek and Armenian words provide an attractive comparandum to Skt. *dhīra*-₂ under the theory that its original meaning ‘fresh, energetic’ in post-Vedic times developed to ‘steady, firm, well-controlling’, possibly under the influence of the root *dhṛ*-.

RV 10.97.9c (= VS 12.83c) contains the word *sīrā́-* the meaning of which is debated: *īṣkṛtir náma vo mātā́ | átho yūyám stha níṣkṛtīḥ | sīrā́ḥ patatrīṇī sthana | yád āmáyati níṣ kṛtha* “your mother is the ‘Restorer’ by name, and you all are ‘Expellers’. You (*scil.* the healing plants to whom the hymn is addressed) are *sīrā́ḥ* with wings. You expel what causes affliction”. The phrase *sīrā́ḥ patatrīṇī sthana* was replaced by *sarā́ḥ patatrīṇī stha(na)* in AVP 11.6.5c, TS 4.2.6.2c, MS.2.7.13c, and KS.16.13c showing that the meaning of the word *sīrā́-* had become obsolete already in the Vedic period. Ved. *sīrā́-* normally means ‘stream’ (4x in RV), and Stephanie Jamison translated the problematic pāda as “[y]ou are streambeds [= stalks] with wings [= leaves]”, while Geldner (1951–1957: 3.307) thought that “*sīrā́* muss hier einen anderen Sinn haben.” If the context suggests that *sīrā́ḥ patatrīṇīḥ* means something like ‘winged expellers’, perhaps the hapax *sīrā́-* may go back to virtual **srh₃-Leh₂* ‘assailant’¹¹⁷ from the root **serh₃-* of Gk. ῥώμαι ‘move violently’ and Hitt. *šarḫ-* ‘to thrust oneself at, to rush’ (*LIV* 535). Needless to say, this is merely a possibility.

The name of the Pūrus, an Aryan tribe that vied with the Bharatas for pre-eminence in Ṛgvedic India and apparently fought on the side of the Dāsas in the Ten Kings’ War, may be a substantivization of **pūrā-* < **p_lh_x-Lo-*.¹¹⁸ The possibilities for root analysis are virtually limitless: for instance, **pūrā-* may go back to the root **pelh₁-* (*LIV* 469) found in Gk. πάλλω ‘shake (a spear)’, πόλεμος ‘war’,¹¹⁹ and perhaps Lat. *populus* ‘group of warriors brandishing their spears’ < **pepl₁(h₁)-ó-*.¹²⁰ Of course there is also **pleh₁-* ‘to fill’ that reminds of the Celtic tribe *Helvetii* and a handful of other roots of suitable structure.¹²¹ In the end,

stem θάλλω and/or the *u*-stem adj. *θαλῦς (fem. θάλεια ‘flourishing, rich’). Arm. *dalar* is a regular reflex of **d^hl₁-ro-* (Beekes 2003: 194).

117 Note the Anatolian evidence for an agentive suffix **-leh₂-* (Luwian non-mutated *-alla-*, Lyc. *-ala-*) discussed by Sasseville (2014/2015).

118 A prevocalic allomorph of the same root might be contained in the name *Purukūtsa*, a king of Pūrus and the father of Trasadasyu, see Mayrhofer (2003: 57 & 59) with references.

119 For a different etymological analysis of Gk. πόλεμος see Kölligan (2017).

120 See Rix (1995: 82); differently Neri (*apud* Oettinger 2012: 245) who instead connects Lat. *populus* to **pleh₁-* ‘to fill’. One wonders if the same root might lurk behind Indo-Aryan **pūrša-* ‘man’ (posited by Wackernagel (1930: 458 = 1955: 131), see also *EWaia* 2.149–150 s.v. *pūruša-*).

121 E.g., **perh₃-* ‘to grant’, **pelh₂-* ‘to approach (in fight)’, **pleh₂-* ‘to be wide’ (in the sense ‘spread out’, see Klingenschmitt (2010: 90)), etc.

this analysis, too, is merely a possibility, since the meaning of the name *Pūrú-* remains unknown.

Future scholarship will show if there is value to any of the proposals made in this section.

5 Conclusion

This paper has examined the curious synchronic absence of geminate *-rr-* in Sanskrit (evinced by the facts of Vedic sandhi) and attempted to identify its diachronic antecedent in the PIE constraint against heteromorphemic geminates which received additional support from the contact between Indo-Aryan and Dravidian languages in which */r/* is non-geminable. The central hypothesis of this paper is that new *-rr-* sequences arising in Indo-Iranian and Indo-Aryan from PIE **-LL-* or **-LHL-* after merger of **l* with **r* and the loss of the laryngeal were repaired through degemination. While the development of sequences like PIE **Cer-lo-* or **Colh_x-ro-* in Sanskrit cannot be established with certainty, one prediction of the degemination hypothesis, namely, the development of PIE **(-)Cl_oHVLV-* to Sanskrit *(-)Cī/ūrV-*, is borne out by several examples: *mūrā-* ‘stupid’ < **mūr_ora-* < **m_orh_x-lo-* (analyzed by Nussbaum as a direct counterpart of Hitt. *marlant-* ‘stupid’), *ūrú-* ‘thigh’ < **ū_orru-* < **(h_x)ul_oh_x-Lu-* ← **(h_x)ul_oh_x-Lo-* (cf. Hitt. *walla-* ‘thigh’) and perhaps some others.

Acknowledgments

I would like to thank Roberto Batisti, Václav Blažek, David Buyaner, Alberto Cantera, Dieter Gunkel, Stefan Höfler, Stephanie Jamison, Jared Klein, Hiroshi Kumamoto, Martin Kümmel, Sasha Lubotsky, Andrew Merritt, Craig Melchert, Sergio Neri, Alan Nussbaum, Norbert Oettinger, Georges-Jean Pinault, Kevin Ryan, Niels Schoubben, Martin Schwartz, and Michael Weiss for sharing their work, generously answering my queries, or providing comments on earlier versions of this paper. I would also like to thank the two anonymous reviewers whose detailed comments did much to clarify my presentation and my thinking about these matters. It goes without saying that the individuals named above may or may not agree with my conclusions and no one of them is to be blamed for what I have done in response to or despite their advice.

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