The derivational history of Vedic
sákthi- '(inner) thigh'

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Abstract. It is argued that Vedic *sákthi-* '(inner) thigh' (an unambiguous cognate of Hitt. *šakutt-* 'thigh(bone)', attested in the reflex of the PIE collective form *šakuttai*, obl. **šakuttii̯-* of the *ḫaštāi* type), which belongs to the heterogeneous group of heteroclitic stems in *-i-/-n-*, viz. *dádhi-* 'sour milk', *ákṣi-* 'eye', *ásthi-* 'bone', is not a structural parallel to Ved. *ásthi-* but rather belongs with *ákṣi-* in that they share the peculiar nom.-acc. du. in *-í̄* with a final accent (directly attested in the case of *ákṣi-* as nom.-acc. du. *akṣī́* and indirectly demonstrable for *sákthi-* via its secondary remodelling *sakthₐyā ~ sakthₐyau*, which finds a perfect typological parallel in *akṣyàu ← akṣī́*). As such, Vedic **sakthī́* is a near-perfect match to the Old Iranian forms (YAv. nom.-acc. du. *haxti*, OAv. Gdu. *⁺haxtiiå̄*), which go back to Proto-Iranian **saktī́* (> Common Iranian **haxtī́*), and speaks in favour of a Proto-Indo-Iranian **sakt-ī́* 'a pair of (inner) thighs', to which Ved. sg. *sákthi-* (still preserving the accent of the old consonantal stem) would then be back-formed — just like Ved. *ákṣi-* is ultimately based on the Proto-Indo-Iranian nom.-acc. du. **akš-ī́* (< PIE **h₃ekʷ-íh₁* through partial contamination with the reflex of PIE **h₂us-íh₁* 'pair of ears'), which was synchronically very obviously reinterpreted as an *i*-stem case form. As such, Vedic *sákthi-* also provides the possible model for the relegation of Proto-Indo-Aryan **astʰi* 'bone' (most likely the old nom.-acc. pl., i.e. neuter collective) to the nom.-acc. sg., from which it arguably adopted the aspirate (a feature entirely absent from Iranian) in its own turn. It is further argued that on the basis of PIIr. **sakt-ī́* one can reconstruct a Proto-Indo-European neuter dual form **sek̑t-íh₁* (or, conceivably, **seg̑ʷ-t-íh₁*), which represents an important addition to the small group of PIE zero-grade nom.-acc. du. neuters referring to natural pairs of things (nearly all securely reconstructible members of which are words for body parts), such as most famously **(s)h₃⁽ᵉ⁾k̑ʷ-íh₁* 'eyes' and **h₂us-(s)-íh₁* 'ears'.

Keywords: Vedic, Old Iranian, Proto-Indo-Iranian, Hittite, Proto-Indo-European, morphology, word formation, dual.

История словообразования *sákthi-* 'бедро'

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Аннотация. Вед. *sákthi-* 'бедро' (когнат хетт. *šakutt-*) относится к группе гетероклитических основ среднего рода на *-i-/-n-*, наряду с *dádhi-* 'творог', *ákṣi-* 'глаз', *ásthi-* 'кость'. Как и *ákṣi-*, *sákthi-* имеет особую форму ном.-акк. дв. ч. на *-ī́* с ударным конечным слогом. Такая форма засвидетельствована для *ákṣi-* и предполагается для *sákthi-* на основании косвенных данных. Форма **sakthī́* находит точные соответствия в древних иранских языках (ср. мл.-авест. ном.-акк. дв. ч. *haxti*, ст.-авест. ген. дв. ч. ⁺*haxtiiā̆*) и указывает на прото-индоиранскую праформу **sakt-ī́* 'бедра'.

Засвидетельствованная ведийская форма *sákthi-,* сохраняющая ударение старой основы на согласный, представляет собой аналогическую форму, образованную на базе унаследованной формы двойственного числа **sakt-ī́*; схожим образом, форма *ákṣi-* была образована по аналогии с ном.-акк. дв. ч. **akš-ī́* и реинтерпретирована как падежная форма основы на *-i-*. В рамках этого анализа придыхательный согласный в *sákthi-* не является этимологическим, а развился по аналогии со схожей по структуре старой формой номинатива / аккузатива множественного числа собирательного существительного среднего рода **ásthi*.

Индоиранская праформа **sakt-ī́* в свою очередь позволяет реконструировать и.-е. **sᵉkʷt-íh₁* (или **sᵉgʷ-t-íh₁*, если предположить, что конечный согласный в корне представляет собой суффикс) – еще одно существительное среднего рода с нулевой ступенью в форме номинатива / аккузатива двойственного числа. Практически все относящиеся к этой группе существительные обозначают части тела, ср. **(s)h₃⁽ᵉ⁾kʷ-íh₁* 'глаза' и **h₂us-(s)-íh₁* 'уши'. Можно предположить, что распространение **-íh₁-* на формы косвенных падежей двойственного числа среднего рода (ср. инстр.-дат.-абл. дв. ч. вед. *-ī́bhyām* ~ авест. *-ibiiā* ~ др.-перс. *-ībiyā* < и.-е. **-íh₁-bʰi̯oh₁*) является специфической морфологической особенностью рассмотренного типа склонения.

Ключевые слова: ведийский, древнеиранские языки, праиндоиранский, морфология, словообразование, двойственное число.

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A synchronic fact of Vedic grammar is that it possesses a group of nouns that display heteroclitic stem alternation, involving -n- in the weak cases, which is different from the inherited -r-/-n- pattern.[1] These form two distinct groups. The first group[2] includes *yū́ṣ*, W(eak) *yūṣ-ṇ-ás*, loc. sg. *yūṣ-áṇ(-i)* 'broth' < *$*i\underdot{u}H$-s-*, W *$*i\underdot{u}H$-s-n-´* (← loc. sg. *$*i\underdot{u}H$=s-én*) ← *$*i\underdot{e}\underdot{u}H$-s-/$*i\underdot{u}H$-s-´*; *dóṣ*, W *doṣ-ṇ-ás*, loc. sg. *doṣ-áṇ(-i)* '(upper) arm' < *$*d\acute{e}\underdot{u}$-s-/$*d^{e}u$-s-n-* (← loc. sg. *$*d^{e}us$-én*) ← *$*d\acute{e}\underdot{u}$-s-/$*du$-s-´*; *$*\acute{a}s$*[3] → *āsýam*, W *ās-n-ás*, loc. sg. *ās-áṇ(-i)* 'mouth' < *$*h_1\acute{e}h_3$-s*, W *$*h_1{}^{e}h_3$-s-n-´* (← loc. sg. *$*h_1{}^{e}h_3$-s-én*) ← *$*h_1\acute{e}h_3$-s-/$*h_1h_3$-s-´*,[4] and *śíras*, W *śīrṣ-ṇ-ás*, loc. sg. *śīrṣ-áṇ(-i)* 'head' < *$*\acute{k}\underdot{r}$=h_2-es-*, W *$*\acute{k}\underdot{r}$=h_2-s-n-´*

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[1] Of which Vedic preserves *ásṛ-k-*, W(eak) *as-n-´*, loc. sg. *as-áṇ(-i)* 'blood' < *$*\acute{a}s$-ṛ-K-/$*as$-n-´/$*as$-án* < *$*h_1\acute{e}sh_2$-ṛ-/$*h_1{}^{e}s$-n-ós* … (loss of the laryngeal by de Saussure's Law)/*$*h_1{}^{e}sh_2$-én* ← PIE *$*h_1\acute{e}sh_2$-ṛ-*, obl. *$*h_1{}^{e}sh_2$-n-* (→ *$*h_1{}^{e}sh_2$-én- → $*h_1{}^{e}sh_2$-n-´*), loc. sg. *$*h_1{}^{e}sh_2$-én*; *yákṛ-t-*, W *yak-n-´*, loc. sg. *yak-áṇ(-i)* 'liver' < *$*i\underdot{a}k$-ṛ-T- (< $*i\underdot{a}k$-ṛ-K-* by dissimilation)/*$*i\underdot{a}k$-n-´/$*i\underdot{a}k$-án* < *$*i\acute{e}k^w$-ṛ-/$*i^{e}k^w$-n-´/$*i^{e}k^w$-én* ← PIE *$*Hi\underdot{e}k^w$-ṛ-*, obl. *$*Hi\acute{e}k^w$-n- (→ $*Hi^{e}k^w$-én- → $*Hi^{e}k^w$-n-´)*, loc. sg. *$*Hi^{e}k^w$-én*; *śákṛ-t-*, W *śak-n-´*, loc. sg. *śak-áṇ(-i)* 'excrement' < *$*ʃak$-ṛ-T- (< $*ʃ\acute{a}k\underdot{r}$-K-* by dissimilation)/*$*ʃak$-n-´/$*ʃak$-án* < *$*\acute{k}\acute{e}k$-ṛ-/$*\acute{k}^{e}k$-n-´/$*\acute{k}^{e}k$-én* ← PIE *$*\acute{k}\acute{o}k$-ṛ-*, obl. *$*\acute{k}\acute{e}k$-n- (→ $*\acute{k}^{e}k$-én- → $*\acute{k}^{e}k$-n-´)*, loc. sg. *$*\acute{k}^{e}k$-én*; (nom.-acc. sg. replaced by *v_a ā́r, udaká-*), W *ud-n-´*, loc. sg. *ud-áṇ(-i)* 'water' < *$*ud$-n-´, $*ud$-én* ← PIE *$*\underdot{u}\acute{o}d$-r-*, obl. *$*\underdot{u}\acute{e}d$-n- (→ $*\underdot{u}^{e}d$-én- ~ $*ud$-én- → $*ud$-n-´)*, loc. sg. *$*ud$-én*; *áh-ar-*, W *áh-n-*, loc. sg. *áh-an(-i)* 'day' < *$*(H)\acute{a}dʒ^har/(H)\acute{a}dʒ^hn$-* ← PIE *$*(H)\acute{o}\acute{g}^h$-ṛ-*, obl. *$*(H)\acute{e}\acute{g}^h$-n- (← $*(H)^{e}\acute{g}^h$-n-´)*, loc. sg. *$*(H)^{e}\acute{g}^h$-én*, and *ū́dh-ar-*, W *ū́dh-n-*, loc. sg. *ū́dh-an(-i)* 'udder' ← *$*(H)\acute{u}Hd^h$-ṛ-/$*(H)uHdh$-n-´* ← PIE *$*(H)\acute{o}\underdot{u}Hd^h$-ṛ-*, obl. *$*(H)uHd^h$-n-´ (← $*(H)\acute{e}\underdot{u}Hd^h$-n-)*, loc. sg. *$*(H)uHd^h$-én*.

[2] See [Wackernagel, Debrunner 1930: 315–318] for a detailed description; cf. [Nussbaum 1986: 53, 161].

[3] Beside another inflectional paradigm, preserved in *ās-ā́* (instr. sg.) and *ās-ás* (abl. sg.) < *$*h_1{}^{e}h_3$-s-´*, the archaic status of which is confirmed by the Iranian data (even if in theory these forms could also reflect what synchronically must have appeared as a root noun after an early but already Indo-Aryan paradigm split of *ās-, ās-(a)n-* into 1. *$*\acute{a}s$-, ās-´* and 2. *āsýa-, ās-(á)n-*).

[4] See especially [Zinko 2001: 415–417] for the problems involved.

(*$ḱr̥=h_2=s-én$) ← *$ḱér=h_2-s-/*ḱr̥=h_2-és-$, all of which display -ø-/-n- heteroclisis, predictably behave as neuter nouns, and mostly go back to what seem to have (at least secondarily) been amphidynamic *s*-stems. *śíras-*, on the other hand, is a descendant of a proterodynamic *s*-stem, and although it has copied the original position of the accent in the old strong stem, thus matching the usual accent position in the genuine *$CéC$-os* type neuters, its synchronic strong shape is that of the old oblique *$ḱr̥=h_2-és-$. The reason that the oblique was selected here as the nom.-acc. sg. stem clearly lies in the fact that by that time a new oblique *$ḱr̥h_2-s-´$ had already been introduced into the paradigm, so that *$ḱérh_2-s-/*ḱr̥h_2-és-$ → *$ḱr̥h_2-és-$ (→ *$ḱr̥h_2-es-$)/*$ḱr̥h_2-s-n-´$. The source of the new oblique will most likely have been the analytical loc. sg., reanalyzed as the endingless loc. sg. of an *n*-stem by the following proportional analogy: [5] *$CC-én$ (*n*-stem endingless loc. sg.) : *$ḱr̥=h_2-s-én$ (loc. sg.) = gen. sg. *$CC-n-és$: x (*$ḱr̥h_2-s-és$), where x is resolved as *$ḱr̥h_2-s-n-és$. [6]

To what extent this is the direct source of the loc. sg. and the neo-oblique *n*-stem in the rest of the members of this category is indeterminable, since any of these could have started behaving as *n*-stems in the weak caseforms (and at least in the case of *ás-* that seems to be exactly the case) by analogy with a structurally parallel case in which such a loc. sg. was inherited and served as the impetus for the development of a neo-oblique.

1.1. The second group of -X-/-*n*- heteroclites consists of four members (all neuters), viz. *áks̩-i* ~ *aks̩-n̩-ás* ~ *aks̩-án(i)* 'eye', *ásth-i* ~ *asth-n-ás* ~

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[5] This proposal has of course already been put forward, see especially [Lühr 2000: 178] and [Oettinger 2016, esp. pp. 322, 324]. For a radically different approach that views the -*n*- as an original extension with an individualizing function, see [Pronk 2015]. Nussbaum [1986, esp. 215–217], like [Neri 2003: 82, fn. 198], seems to favour contamination with old -*r*/*n*- heteroclitics. Cf. also [Benveniste 1935: 24, 77–78]. For a completely different account of the *n*-stem of Arm. *akn* 'eye', taken as a Hoffmann derivative from *h_3ek^w-, see now [Kölligan 2019: 186–187].

[6] Cf. the well-known cases such as Av. *xšapan-* 'night' beside older *xšap-* ⇐ *$k^ws^ep-én$, or the same development in the case of *er*-locatives as in Ved. *us̩ár-* 'dawn' ⇐ *$h_2us=(s)-ér$. The same development might also be responsible for the type *$h_3réǵ-on-$ itself, if its *n*-inflection is indeed based on the old endingless locative of *$h_3réǵ-r/_n-$.

asth-án(i) 'bone', *sákth-i ~ sakth-n-ás ~ sakth-án(i)* 'thigh', and *dádh-i ~ dadh-n-ás ~ dadh-án(i)* '(thickened) sour milk' (see [Wackernagel, Debrunner 1930: 302–305] and most recently [Kümmel 2018: 164] for an overview of the attestations and discussion), all of which show an alternation between an *i*-stem in the strong caseforms and a nasal stem in the oblique (even though this can only be systematically observed in the singular paradigm of these nouns, in which they display completely indentical behaviour). Apart from that purely synchronic fact, however, they represent an assemblage quite distinct from the *-ø-/-n-* heteroclites discussed above in that they do not by any account form a homogeneous group, neither diachronically nor synchronically (i.e. beyond the singular).

1.1.1. The main odd man out is of course *dádhi-*, which must surely reflect PIIr. **dá-dʰHı-* < **dʰé-dʰH-* < PIE **dʰé-dʰh₁-*, a verbal action noun (with an unproblematic transition to a *nomen obiecti*), made from PIE **dʰeh₁(i̯)-* 'suck (milk)', iterativized through reduplication. [7] Its oblique stem, apparently based on the loc. sg. **de-dʰh₁-én*, seems to speak against the possibility that *dádhi-* (as if from **dʰé-dʰh₁i-*) might have been derived from the *i*-extended root (which in terms of the nom.-acc. sg. form itself is at least a theoretical possibility), although this argument is not entirely waterproof. That *dádhi-* was aligned with the synchronic paradigm of other *-i-/-n-* heteroclites, which conceivably had more claim to it in diachronic terms (see below), could be due to the fact that, as very convincingly claimed by Pronk [2015: 340], it was the only other neuter *noun* in Vedic that ended in *-i* in the nom.-acc. sg. (the *-i* in *vā́r-i*, beside *v₍ₐ₎ā́r* 'water' and *hā́rd-i* 'heart' is of course

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[7] Its well-known relatives are OPr. (Elbing Voc.) *dadan* /dædan/ gl. *Milch* < **dedan*, continuing a thematized **dʰe-dʰh₁-o-* (an alternative, inner-Baltic etymology is offered by [Mažiulis 2013: 100]), and probably Alb. *djath(ë)* 'cheese', although the details on the side of the historical phonology are far from clear; PAlb. **détʰ < *dʰétʰ < *dʰé-dʰH vel sim.* seems a likely alternative, however (see [Hamp 1953: 140–141, 1970: 141; Beekes 1987: 50; Demiraj 1997: 135–136], and most recently [Kümmel 2019: 164]), though in view of the PAlb. 1 pl. middle **-meðę̱ < *-medʰh₂oi̯* (← PIE **-me-dʰh₂*) the conditioning environment would then probably have to be thought in terms of /__#.

not old). Its synchronic paradigmatic allegiance thus seems to have had a purely structural motivation.

1.1.2. Perhaps the most frequently discussed item of the the four -*i*-/-*n*-heteroclites is *ásthi-* 'bone', for reasons of its derivational ambiguity, namely, the fact that it can easily reflect either PIE *$h_2ó/ésth_2$-i-* or *$h_2ó/ésth_2$-* (while *$h_2ó/ést$-i-* is excluded by the presence of the aspirate). [8] As has already been argued on several occasions, it is theoretically possible that *ásthi-* is either a) a recategorization of the strong stem of proterodynamic collective *$h_2ést$-h_2- > *Hásth-i-*, subsequently relegated to the function of a neo-singulative as a replacement of *Hást-*, or b) a formally singulativized proterodynamic collective *$h_2ést$-h_2- → *$h_2óst=h_2$-i-*. [9] Both of these explanations work under the assumption that *ásthi-* must be in one way or another connected with its erstwhile collective in order to succesfully account for the aspirated *tʰ* in the Vedic forms of this word. Alternatively, the starting point could be an *i*-stem extension *$h_2óst$-i-/*$h_2ést$-i-* [10] (cf. *mor-i-*/*mer-i-* beside *mor-*/*mer-* 'dead = stagnant, unmoving water' etc.), [11] secondarily contaminated by the aspirate that regularly developed in the nom.-acc. pl. = collective (such a levelling would be not only unproblematic for Proto-Indo-Aryan but an altogether expected regularity). [12] Iranian, however, unequivocally points to the preservation of a root noun *ast-* [13] (cf. OAv., YAv. acc. sg. *as* < *Hast* < *$h_2óst$, YAv.

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[8] The competing reconstructions *$h_2ósth_1$-* and *h_3esth_1-* (i.e. the logical recourse if one does not wish to propose an *o/e*-ablaut scheme, but in fact an impossible alternative due to the insurmountable problems it would create for the Celtic and Tocharian cognates) are the result of a false projection of Gk. ὀστε- in the derivative ὀστέον onto PIE, falling short of recognizing in the *-ei̯-* element the full-grade of the *i*-extended version of this root noun.

[9] Cf. [Hamp 1953: 140, 1970: 140, 1979: 3, fn. 6; Beekes 1987: 53; Hajnal 1994: 97–98; Lipp 2009: 408, fn. 121; Oettinger 2016: 323].

[10] Apart from Gk. ὀστέον < *h_2ost-é̯i̯-o-*, however, none of the cognates *unambiguously* points to an *i*-stem variant.

[11] See [Furlan 2011: 4–5].

[12] See [Nussbaum 1986: 134; Lipp 2009: 408, fn. 121].

[13] For the material see [Bartholomae 1904: 211–212] and [Kellens 1974: 336–339].

gen. sg. *astō* < *Hast-ás [14] < *h₂ést-os, YAv. nom. pl. *asti* [15] < *Hástʰi < coll. *h₂ést-h₂, YAv. gen. pl. *astạm* < **h₂ést-o/eHom*, OAv. instr. pl. *azdᵊbīš* ~ YAv. *azdᵗbīš* [16] < *Hazd-bʰíš < *h₂ést-bʰis) [17] and strongly suggests the following reconstruction for Proto-Indo-Iranian:

	SG.	**PL.**
Nom.-acc.	*Hást	*Hastʰi
Gen.	*Hast-ás	*Hast-áHam
Instr.	**Hast-ā́*	*Hazd-bʰíš
Loc.	?(*Hast-án)	

From this reconstruction it follows that the easiest solution for Ved. *ás-thi* needs to actually be neither of the above but rather a modified version of (a). It is natural to assume that Ved. nom-acc. sg. *ásthi* is the old collective form, but the crucial point is that the transfer to singular was not at all necessarily due to some semantic development/motivation (although such a scenario would be perfectly possible as an inner Indo-Aryan shift), but rather rests on a purely structural circumstance: there was no corresponding pair to which the relationship between nom.-acc. sg. *ás (< *ást) = synch. *ás-ø and nom.-acc. pl. *ástʰi = synch. *ástʰ-i could be likened, so that the result was the relegation of *ástʰi to the nom.-acc. sg. (now interpretable as *ástʰ-i-ø) by analogy with the structurally immediately comparable nom.-acc. sg. **sákt⁽ʰ⁾i* 'thigh'. This would have occurred irrespective of whether the old nom.-acc. du. of **Hást-* existed at the time

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[14] Here and in the rest of the oblique cases (sg. and pl. alike) with a transition of all root nouns (or stems interpretable as such) to a mobile pattern, as attested in Vedic. On the historical development and synchronic systematization of Vedic accentual patterns see [Repanšek 2020].

[15] By Proto-Iranian Tʰ > Φ / {–s,–ʃ}__ (which was probably contemporary with T > Φ / {–s,–ʃ}(T > Φ)__C).

[16] Functioning as the acc. pl. as is often the case in Younger Avestan.

[17] The rest of the attested YAv. forms all feature secondary thematization (based on the neo-accusative *ast-am) and are irrelevant for the present discussion.

as *Hast-ī (as Hittite °ḫašti implies might indeed have been the case) <
*$h_2$ést-ih₁, thus further matching nom.-acc. du. *sákt(h)ī.

That the *i*-stem in the singular is not inherited and cannot be old under any account becomes immediately clear from the fact that *asth-n-´*, the neo-oblique stem (and thence marginally also generalized to the strong forms on analogy with the *n*-stems, cf. nom.-acc. pl. *asthā́ni* ← neo-oblique *asth-án*-) of this noun, is based on the old root noun *Hast-*. This conclusion is unavoidable regardless of whether one assumes that the oblique in this case is based on an inherited analytical loc. sg. *Hast-án <
$h_2$est-én or has been analogically acquired by contamination (in this case as the result of levelling due to semantic proximity) with the shape of the oblique of the inherited group of *-r-/-n-* heteroclites that possessed strong or vague association with the semantic field BODY PART. [18]

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Given the perfect parallelism [19] between Ved. *ásthi-* 'bone' :: Hitt. *ḫaštāi*, obl. *ḫaštiị̯-* 'bones; bone', on the one hand, and Ved. *sák-thi-* 'thigh' :: Hitt. *šakuttai*, obl. *šakuttiị̯-*, on the other hand, as well as the fact that while *ásthi* under any account directly reflects *$h_2$ést-h_2-*, Hitt. *ḫaštāi* must go back to either a holodynamic collective made to *$h_2$óst-i-/*$h_2$ést-i-* (viz. *$h_2$ést-ōị̯/*$h_2$est-ị̯-´ [20]) or — as per [Oettinger 2016: 323] [21] — a holodynamic collective made to a de-collective *i*-stem

[18] Cf. [Neri 2003: 82, fn. 198].

[19] For the etymological connection see [Kühne 1986: 103, fn. 61], building on the proposal of R. Normier, [Melchert 1994: 61, 96; Rieken 1999: 164–165; Puhvel 2002: 253; Tischler 2004: 743; Kloekhorst 2008: 703–704; Oettinger 2016: 323; Puhvel 2017: 68].

[20] See [Tischler 1983: 202–203; Melchert 1984: 71; Nussbaum 1986: 134; Harðarson 1987: 93; Puhvel 1991: 237; Oettinger 1995: 217–218; 1999: 211; 2009: 341; Steer 2015: 95], cf. also [Rieken 1999: 48–49].

[21] For the derivational process see especially [Steer 2012: 106–107].

singulative *$h_2óst=h_2-i$-/*$h_2ést=h_2-i$- (viz. *$h_2ést=h_2-ōi̯$/*$h_2est-i̯$-ʹ[22]), it is tempting to view *sákthi*- as an exact structural and derivational parallel to *ásthi*-.

Hitt. *šakuttai*, whose probable meaning 'thighs' or, more likely, 'thighbones' is heavily dependent on the etymological comparison, the available Hittite data only indirectly supporting the semantic match with its Indo-Iranian cognate,[23] undoubtedly has the same morphological structure as *ḫaštāi* and must continue either *$sékʷt-ōi̯$/*$sekʷt-i̯$-ʹ (or *$ségʷ=t-ōi̯$/*$seg=t-i̯$- if *$-t$- is in fact an old suffix here, cf. *$nógʷ-t$-/*$négʷ-t$- 'darkening-up' > 'dusk/early black; night')[24] or *$sékʷ/gʷt-h_2-ōi̯ ∼ *sekʷ/gʷt-h_2-i̯$-ʹ, a derivative of *$sókʷ/gʷt-h_2-i$- ∼ *$sékʷ/gʷt-h_2-i$-. The unexpected *a* in the root must in any case have been introduced secondarily from *$sókʷ/gʷt-(h_2)-i$-, the strong stem of the underlying singular/singulative form (unless modelled on *ḫaštāi* altogether).[25] All this would then imply that nom.-acc. sg. *sákthi* is based on the old collective *$sáktʰi$ < *$sékʷ/gʷt-h_2$ just as *ásthi* is a functionally relegated *$h_2ést-h_2$, especially since these words pretty much behave the same

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[22] In both cases *ḫaštāi* of course goes back to a virtual *$h_2est=h_2-ǭi$, showing a secondary shift of the accent to the suffix, as is typical for this category.

[23] For the problems involved in the interpretation of the rather scarce attestations of this word see [Kloekhorst 2008: 703–704; Puhvel 2015: 68; CHD-Š: 80–81].

[24] The reconstruction *$sogʷtǫ́i̯$ might provide a better account of the spelling with a single *-k-* in Hittite (cf. *nekuz* if indeed from *$négʷts$ rather than *$nékʷts$), but this does not mean much if Melchert [1994: 61, 96], building on [Čop 1963: 33–37], is right in assuming that any PIE *$kʷ$ was regularly lenited in any kind of medial position (naturally excluding / __#, e > ø and / __s); cf. also [Kimball 1999: 281–282]. Note that if the form was indeed *$sogʷ-t$- (> *$sokʷ-t$- by regressive assimilation), it is necessary to assume that the suffixal element would have had to be reinterpreted as part of the stem very early on (this same scenario can of course also be valid for *$h_2óst$-/*$h_2ést$- if analyzed as *$h_2ó/és-t$-), otherwise the expected collective (under one view of things) would have to have been **$ségʷ-ot-h_2$ rather than the expected *$sékʷt-h_2$-/*$sekʷt-éh_2$-.

[25] Hitt. *luttāi* 'window(s)' < *$luH-tǫ́i̯$ (see [Eichner 1973: 80] and [Melchert 1984: 71] regarding the etymology), another unambiguous member of the group of such neuter *ai*-stems, nicely shows that it was in fact the zero grade that was generalized here, as is expected.

in Vedic and since this would indeed seem to be the most economical way to account for the aspirate.

2.1. There is one crucial difference between the two paradigms, however, namely, the shape of the nom.-acc. du. *sakth₎yā* (RV X.86.16b, 17d)[26] ~ *sakth₎yau* (AVŚ VI.9.1b, AVP II.33.2b, 90.2b, TB II.4.6.5.2) 'inner thighs',[27] which due to its odd accent placement must surely reflect an archaic form. The nom.-acc. du. *sakth₎yā* finds a nearly perfect match in *akṣyàu* (AVŚ 5x, always syncopated) 'pair of eyes' (f.), showing a clearly secondary transfer of the archaic and well-attested nom.-acc. du. n. *akṣī́* (RV 6x) to the *vṛkī́*-type. The reason behind the formal renewal is clear: since the oblique cases (instr.-dat.-abl. du. *akṣī́bhyām*, gen.-loc. du. *akṣ₎yoṣ*) perfectly matched that of *vṛkī́bhyām*, *vṛk₎yoṣ* (including the mezocolumnar position of the accent), the nom.-acc. du. was remade to conform to that of *vṛk₎yā* < *-íh₂-eh₁*[28] (a similar process affected the gen.-loc. du. *akṣ₎yoṣ*, attested once as such in the VS, but found twice in the AVŚ as a *devī́*-type *akṣyóṣ*[29]).[30] From this it logically follows that since *akṣī́* is

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[26] The acc. sg. form *sákthi* in X.86.6d naturally refers to both thighs, but this does not suggest that *sákthi* should go back to a singulativized collective form *sékʷ/gʷt-h₂. We are clearly dealing with a synecdoche here: X.86.6a-d *ná mát strī́ subhasáttarā / ná suyā́śutarā bhuvat // ná mát práti-cyavīyasī / ná sákth₎y úd-yamīyasī* 'There is no woman with a nicer backside than me, not one who will be better at coitus, none who will reciprocate the movement better than me, none who will lift up her thigh (= *both of her thighs*) better'.

[27] TS and ŚBM both have an already regularized root-accented *sákthyāᵘ*, copying the accent of the nom.-acc. sg. The same goes for *ákṣyāᵘ*.

[28] In the case of *sákthi-* this trend marginally affected the plural paradigm as well, as is shown by the unambiguous acc. pl. form *sakth₎yas* (= *sakth₎yas*) in AVP XX.25.9d (edited by [Kubisch 2012]).

[29] In those forms of the *devī́*-type that have generalized suffixal accent, the inherited sequence *-íi̯- < *-íh₂- is regularly syncopated (the exception being the instr. sg.), while the accent is moved to the desinence by analogy with the rest of the (synchronically!) pre-vocalic endings (the same happens in suffix-accented *i*- and *u*-stems), so that *dai̯u-i̯ā́s : *dai̯u-íi̯au̯š is levelled to *dai̯u-i̯ā́s : *dai̯u-i̯áu̯š.

[30] The same scenario is probably responsible for OP *ušiyā*, attested in XPl 32, for which see below.

the older form and *akṣᵧā* a *forma facilior*, *sakthᵧā* must by implication go back to **sakthī́*. [31]

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[31] Already implied by the entry in [Grassmann 1873: 1440], cf. [Lanman 1880: 371], *pace* [Schmidt 1889: 249, fn. 1]. There is no trace of **sakthī́* in the Vedic corpus, not even in the Ṛgveda itself (vis-à-vis several instances of *akṣī́*). It may be possible to maintain the idea that this situation is due to the fact that the singular forms of *ákṣi-*, as opposed to *sákthi-*, had a wider range of contextual possibilities in which they could appear, so that the old dual form *akṣī́* would in this case be maintained due to its having been a synchronically appropriate nom.-acc. du. form of *ákṣi-*. This is not entirely likely, however, given that *ákṣi* (nom.-acc. sg.) is in fact only used once in the Ṛgveda, the only other occurrence being the Abl.sg. *akṣṇás* (VIII.25.9a, IX.9.4c). Another possibility would then be to regard the feminine dual as influenced by the semantic component FEMALE, if it can be shown that *sakthᵧā* only ever refers specifically to woman's thighs. Now, at least as far as the Ṛgveda is concerned, this is indeed the case: X. 86.16a–d *ná séśe yásya rámbate / ₐ'ntar sakthᵧā kápr̥t // séd īśe yásya romaśáṃ / niṣedúṣo vi-jr̥m-bhate* 'He has no power, whose penis hangs (= remains flaccid) between (<u>a woman's</u>) <u>thighs</u>; it is him that has power, whose (sc. penis), when it has settled down into place, the vulva gapes wide open for'; X.86.17a-d *ná séśe yásya romaśáṃ / ni-ṣedúṣo vi-jr̥m-bhate // séd īśe yásya rámbate / ₐ'ntar sakthᵧā kápr̥t* 'He has no power, whose (sc. penis), when it has settled down into place, the vulva gapes wide open for; it is him that has power, whose penis remains flaccid between (<u>a woman's</u>) <u>thighs</u>' (regarding *sákthi* 'her thigh' as referring to woman's thighs (du.) in X.86.6d see above). The same goes for TB II.4.6.5.1–3 *prá yapsyánn iva sakthᵧau / ví na indra mŕ̥dho jahi / kánīkhudad yáthā sápam* (see [Hoffmann 1976: 571] for restored text) 'Just like when one in the intention to copulate [brings it] forward towards (<u>a woman's</u>) <u>thighs</u>, strike asunder our adversaries, Indra, as one keeps thrusting one's penis'. In RV V.61.3 reference is clearly made to male thighs, but here the form is plural: *jagháne códa eṣₐā́ṃ / ví sakthā́ni náro yamuḥ // putra-kr̥thé ná jánayaḥ* '[Where is] the whip on their haunch? The men have spread out their thighs like women when (our) sons are made'. The fact that *sakthᵧau* in AVŚ VI.9.1b (= AVP II.90.2b) must surely refer to *male* thighs (AVŚ VI.9.1a-b *vā́ñcha me tanₐvaṃ pā́dau / vā́ñchākṣyau vā́ñcha sakthᵧau* 'Desire my body, feet, desire the eyes, desire the thighs') as shown by verse 3, which makes it clear that the entire charm is directed towards a woman, needs no special explanation, given that just like *akṣyàu* in the same line it is simply a later form that has won out by the time of the Atharvaveda. It is also quite possible, however, that the latter hypothesis actually accounts for the Ṛgvedic situation as well, given that we could in fact simply be dealing with different chronological distributions of *akṣī́* vs. *sakthᵧā*. The latter only appears in the younger portion of the tenth book, while *akṣī́* is limited to the Family books

This significant bit of morphology inferable by internal reconstruction finds crucial support in the YAv. acc. du. *haxti* 'inner thighs' < **saktī* together with the OAv. gen. du. ⁺*haxtiiā̊* < **saktiịās*,[32] which — save for the lack of aspiration (for the otherwise expected ***haxδi* cf. OAv. *fᵊδrōi* < **fθráị* by the regular Younger Avestan rule **θ > δ / Φ__*)[33],[34] — is an exact match of the Vedic nom.-acc. du. form implied by *sakthᵧā, sakthᵧau*.

2.2. Ved. *ákṣi-* (n.) itself is clearly a retrograde formation[35] based on the reinterpretation of the inherited nom.-acc. du. form *akṣī́* < **h₃ᵉkʷ-s-íh₁*[36] as the nom.-acc. du. of a neuter *i*-stem (that is to say, a virtual ***h₃ᵉkʷ-s-í-ih₁*),[37] but one that accentually faithfully copies the old nom.-acc. sg. of this noun, which must have been **ák(š)* < **h₃ékʷ(-s)-ø*.

(I.72.10b, I.116.16c, I.117.17c, I.120.6c, II.39.5b) and the older part of the tenth book (X.79.2a). Since there is no *akṣī́* or *akṣᵧā* in the later hymns of the Ṛgveda, however, this hypothesis cannot be tested. Pāṇini's sutra VII.1.77 according to which the nom.-acc. du. of *ákṣi-* etc. ends in -*ī́* is strictly an observation on the specific situation obtaining in the Vedic mantras. His observation needs hardly be extended to a putative Vedic **sakthī́*, though, because he is clearly overgeneralizing: deriving the rule from the preceding two sūtras would lead one to infer that *ásthi-* and *dádhi-*, too, had an erstwhile nom.-acc. du. **asthī́, *dadhī́*, which cannot, of course, have been the case.

[32] Y 53.7, clearly trisyllabic in the fourth pada of a *vahištōištī* meter. The form itself is attested as *haxtaiiā̊*, which can be unproblematically restored as ⁺*haxtiiā̊* (cf. [Bartholomae 1904: 1745; Kellens, Pirart 1991: 272]).

[33] It is possible that this change also included **φ > β / θ__* (on the then unavoidable assumption that **w > *φ / s, θ__*, just as — in that case — **w > β / z, δ__*), although the fact that **w > *β* also occurs after a **δ* while other spirants are not so affected, and that a putative **θφ* then clearly behaves differently than **sφ* (< **sw*), which dissimilates to *sp*, a direct change **w > β / θ, δ__* is perhaps the likelier alternative.

[34] See [Bartholomae 1904: 1744] s. v. *haxt-*, fn. 1, with reference to [Bartholomae 1894–1901: § 278.3, fn. 1].

[35] *Pace* [Oettinger 2016: 324 §10].

[36] Here and in all other cases superscript *ᵉ* will signal a secondarily restored *e*-grade (not anaptyxis!) in a heavy consonant cluster.

[37] Cf. [Wackernagel, Debrunner 1930: 305–305] with older references, [Hamp 1953: 139; Forssman 1969: 49, fn. 20; Nussbaum 1986: 204–205; Tremblay 1996 (1998): 53, fn. 78; ÈSIJa I 281–283; EWAia I 42–43; NIL 370ff.].

In other words, it was in fact the old nom.-acc. sg. *$ák(š)$ < *$h_3ék^w$-(s)-ø that was reshaped as *$ákš$-i-ø (effectively an *i*-stem) through morphological contamination from the side of the reinterpreted nom.-acc. du. The source of the *s is certainly not the old proterodynamic *s*-stem neuter **$h_3ék^w$-s-/*$h_3^ek^w$-és-, regardless of the fact that Slavic *oko, *$oč$-es- < *$h_3ék^w$-os/*$h_3ék^w$-es- would superficially seem to imply just such a starting point, but is undoubtedly due to a contamination with the word for 'ear' *$h_2éu̯s$-es- (just as in Slavic), which was an *s*-stem from the start (see e. g. [Schindler 1975: 264; Stüber 2002: 193–194]). The assumption that the original nom.-acc. du. *$h_3^{(e)}k^w$-$íh_1$ (= most clearly and directly continued by PSl. *$öči$, Lith. $akì$ < *$ak\acute{ī}$ < *$h_3^ek^w$-$íh_1$, Gk. ὄσσε < *$ók_i̯e$ < *$h_3^{(e)}k^w$-$íh_1$, and Arm. $ač'$-k' < *$ak_i̯a$ < *h_3k^w-$íh_1$) [38] was remodelled as *$h_3^ek^w$-s-$íh_1$ after *h_2us-$íh_1$ (< **h_2us-s-$íh_1$) is trivial and the resulting contamination can be viewed as a case of levelling based on semantic (same semantic field) and functional (both refer to natural pairs) closeness of the two inherited items. This development finds a convincing typological parallel in the reiterated influence of '(pair of) ears' on '(pair of) eyes' in Iranian, for which cf. YAv. acc. du. $aši$ < *$ašī$, O/YAv. instr. du. $ašibiiă̆$ [39] < *$ašībi̯ā$ ← *$ušī$ (> YAv. $uši$, OP $ušiy$ /ušī/ 'intelligence, reason' as *duale tantum*), *$ušībi̯ā$ (YAv. $ušibiia$, OP $ušibiyā$ /ušībii̯ā/) for expected **$axšī$, **$axšībi̯ā$.

On a side-note: the XPl version, i.e. Xerxes's rendering of DNb, has $uši$ /ušī/ for the acc. du. form in l. 36 before the enclitic $=cā$, which corresponds perfectly to DNb 32, but uses $ušiyā$ in l. 32 for expected $ušiy$ as attested in DNb 28. The latter seems to be nothing but a younger dual form of the $vr̥k\acute{ī}$-type based on the oblique cases and thus an exact formal equivalent of Ved. $akṣ_i̯ā$, $sakth_i̯ā$. The form $ušiyā$ (DNb 35, XPl 39), however, must in my view be the genitive dual form (naturally in the dative function), which is actually as good as confirmed by gen. du. $gaušāyā$ ← *$gau̯šai̯āh$ (from $gauša$- 'ear', m.) in DNb 53. Given the analogical length

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[38] On Tocharian B $eś$ (possibly but not necessarily from *$ok'i̯e^ʔ$ ~ *$ok'i$ < *$h_3^ek^w$-$íh_1$) and the problems involved see [Ringe 1996: 27–29, Kim 2018: 78].

[39] See [Kellens 1974: 369], also providing a good argument in favour of the existence of an *i*-stem *$aši$- (sg.) in Avestan (as — by implication — probably a reflex of the Proto-Indo-Iranian heritage as far as the morphology itself is concerned).

in *gaušāyā* for expected *gaušayā* < *$g^h e\mu s\text{-}o\mu\text{-}h_1 oh_1 s$, imported from the nom.-acc. du. *gaušā*, it is not just possible but quite likely that *ušiyā*, too, should be read as /ušīi̯ā/ by way of the same contamination process, in this case additionally supported by the instr. du. /ušībii̯ā/.

3

It is significant that just like **haxti-*, Avestan *aši-* is only ever attested in the dual, which strongly implies that dual number was indeed the category in which both items most naturally occurred. All things considered, PIIr. **sákti-* surely does not share its derivational history with **ást^hi-*, but just like **ákši-* rests on an old inherited dual **saktī́* '(a pair of) (inner) thighs', directly confirmed by Iranian **haxtī* (= **haxtī́*) and indirectly by Vedic *sakth̥yā̆ᵘ* ← **sakt^hī́*. Just like the case of **ák(š)-i* ← **ák(š)*, the back-formed strong stem **sákti* too retains the accent of the old nom.-acc. sg. **sákt* < **sók^wt-ø*. The presence of the aspirate in the Vedic pair therefore cannot be old but plainly copies the aspiration from its nearest structural parallel **ást^hi*, in the precursor of which the **t^h* was inherited (see above). Since mutual influence between the two neo-nom.-acc. sg. stems **sákti-* and **ást^hi-* is made very probable by the push behind the reinterpretation of the nom.-acc. pl. **ást^hi-ø* as nom.-acc. sg. **ást^h-i-ø* (discussed above), a contamination of **sákti-* → **sákt^hi-* with **ást^hi-* (and subsequent spread of **t^h* to the rest of the paradigm) is an unsurprising triviality. [40] The Proto-Indo-Iranian state of affairs can thus be envisaged as follows:

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[40] If one supposes that there also existed a nom.-acc. pl. **sákt^hi* < **sék^w/g^wt-h_2*, the latter could arguably have provided a further source for the spread of the aspirate, after having coalesced with the new singular strong stem. It is true that no other neuter stem ending in a *-t* in Vedic has any trace of the aspirate, cf. nom.-acc. pl. n. *-ă̄nti* < **-ont-h_2*, *-v/mānti* < **-\mu/mont-h_2* (the length itself is analogical in both cases), but in neither of these categories **t^h* could actually have won out, given that these examples are both adjectival, so that the nom.-acc. pl. alternant would have been absolutely marginal in comparison with the masculine forms (and the feminine for that matter).

	SG.		DU.
Nom.-acc.	****sák(t)*		**saktī́*
		Instr.-dat.-abl.	**saktī́bʰi̯ā*
Gen.	**sakt-ás*		**saktíi̯ās*
Loc.	**sakt-án*		**saktíi̯au̯*

4

On the basis of PIIr. **saktī́* '(inner) thighs' we can now reconstruct with certainty PIE **sᵉkʷt-íh₁* (or perhaps **sᵉgʷ-t-íh₁*, if the root-final **t* is in fact suffixal), [41] which finds a perfect structural parallel in several archaic PIE items reconstructible as [42] **(s)ʔh₃⁽ᵉ⁾kʷ-íh₁* '(pair of) eyes', **h₂us-íh₁ (< **h₂us-s-íh₁)* [43] '(pair of) ears', **h₁lṇgʷʰ-íh₁* 'lungs', [44] and **du̯i-dḱṃ=t-íh₁* 'twenty' < 'pair of tens', [45] and represents an important

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[41] Naturally enough, PIIr. **saktī́* allows for the possibility that the original nom.-acc. du. restored the strong-grade vowel of the old singular stem (as is most likely the case with *šakuttai*, for which see above) to avoid the otherwise unavoidable triphonemic cluster in the *Anlaut*, so that **saktī́ < *sokʷt-íh₁ ← *skʷt-íh₁* rather than **sekʷt-íh₁ ← *skʷt-íh₁*.

[42] See [Malzahn 2000: 294–300] for a very useful overview of the items in question. On 'twenty' see especially [Rau 2009: 18, fn. 17].

[43] PSl. **ûši* demands **h₂eu̯s-íh₁*, representing a trivial levelling of the *e*-grade singular stem (**au̯s-es-* : **usī́ → *au̯s-ī́*), cf., e.g., [Nussbaum 1986: 212] *contra* [Tremblay 1996 (1998): 54, fn. 84] and [Neri 2003: 82, fn. 198], who would like to see in **h₂us-íh₁* a secondary ablaut grade levelled based on the weak stem of what they argue to have originally been a mobile dual paradigm.

[44] See [Pokorny 1959: 661]. Or perhaps **h₁lṇgʰ-u̯-íh₁ < *h₁lṇgʷʰ-u̯-íh₁* as tentatively suggested by Peters *apud* [Malzahn 2000: 299].

[45] **ǵón-u̯-ih₁ ~ *ǵén-u̯-ih₁* '(pair of) knees' (see [Malzahn 2000: 289–299]) is a different story, however, since we find here a synchronically segmentable suffix (as opposed to the morphologically obscure **h₂us-íh₁* and the purely deradical **h₃⁽ᵉ⁾kʷ-ih₁*).

addendum to the category of inherited duals that marked a natural pair (i.e., "collective duals").

Since in no other documented case *-$íh_1$- is transferred to the oblique cases in the neuter dual, [46] the paradigm of such nouns must be supposed to either preserve the original mezostatic character [47] of such *-$í$-h_1- formations, [48] or else — which would seem to me the

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[46] If *-i-h_1- is indeed functionally comparable to *-eh_2-, one would technically actually not expect it to be transferred to the oblique cases, since the collective plural suffix (*-h_2-) does not feature in any of the oblique caseforms (a different, though in my view unconvincing, view of that particular distribution is given by [Steer 2012]). See further below under fn. 49.

[47] Cf. [Eichner 1982: 40–41; Klingenschmitt 2005: 415; Malzahn 2000: 302] for the same view of things.

[48] The idea that the neuter dual suffix is most likely a conglomerate of the old plural collective *i (as most purely preserved in the old pronominal nom.-acc. pl. *^{o}o-i and in my view no different from the deverbal abstract-forming -i and if so, quite possibly, also with the *-i- in *-$í$-h_2- ~ *-i-h_2- and *-i-$éh_2$-) and the zero grade of the dual collective suffix *-eh_1- has already been tentatively put forward by [Oettinger 1995: 221], but see [Oettinger 2016: 324 §10] for a completely different view of the derivational history of this undoubtedly conglomerate suffix. *Pace* [Neri 2003: 82, fn. 198], speaking *contra* [Malzahn 2000: 299; Fritz 2000], there is no need to assume that *h_1 as the dual marker was *not* a suffix and that the stem of the nom.-acc. du. (m. *-$(e)h_1$-, n. *-ih_1-, new feminine *-eh_2-ih_1- ~ *-e-h_2-ih_1-, *-ih_2-ih_1-) is not in its essence a derivative parallel to the -eh_2- collective plural. Any counterarguments that are based on the fact that *h_1 is part and parcel of the oblique dual endings (as is the unambiguously *non-suffixal* *s in the plural: dat.-abl. *-o +-s, loc. pl. *+-s -u) and as such can only be seen as a purely desinential exponent do not and cannot convince: since the oblique cases of the dual are a relatively late category, based for the most part on their plural counterparts (as they emerged after the split-off of the Anatolian branch), it is clear that *-$(e)h_1$ in the nom.-acc. du. was reinterpreted at a certain point as the exact functional equivalent of pl. *-$(e)s$, from which it naturally followed that wherever there was an *s*-marker in the plural, the dual equivalent will have replaced it automatically with *h_1 (dat. pl. *-$b^h i̯o$-s ~ *-mo-s :: dat. du. *-$b^h i̯o$-h_1 ~ *-mo-h_1, abl. pl. *-$b^h o$-s :: abl. du. *-$b^h o$-h_1, loc. pl. *-s-u :: loc. du. *-h_1-u). This rule was extended *even* to the instrumental, in which the final -s was not in fact the same *-$(e)s$, i.e. a plural marker, at all, though synchronically interpretable as such, so that the following proportion would obtain: instr. pl. *-$b^h i$-s ~ *-m-is :: instr. du. *-$b^h i$-h_1(m) ~ *-mih_1 (the latter not logically segmentable

likelier alternative — be specific to the cases in point: [49] instr.-dat.-abl. du.

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in terms of diachronic morpheme boundaries because it too patently arose only *after* the reinterpretation of instr. pl. *-m-is* as being effectively *-mi* + the plural marker *-s*).

[49] While the possibility of a secondary spread of the length to instr.-dat.-abl. in Indo-Iranian cannot theoretically be entirely excluded, seeing a similar process at least marginally affected *hánu-* 'jaw' (f.), attesting to an analogical instr.-dat.-abl. *hánūbhyām* (see [Lanman 1880: 56] for the attestations), such a scenario is difficult to envisage in the case of *$*h_3k^w$-íh_1* because that would unavoidably require a form like *$*ak\d{s}\acute{\overline{\textit{i}}}$* to have been reinterpreted as a nom.-acc. du. of a *devī́*-stem, which is unimaginable given the difference in gender and the fact that that would then presuppose *$*h_3k^w$-í-* as the weak stem, which was never the case simply because *akṣī́* & c. were never *i*-stems. In addition, *hánūbhyām* is not actually immediately explainable as the result of a synchronic misinterpretation of *hánū* as a nom.-acc. du. of an *ū*-stem, because the latter category possessed no such forms; the form (twice in the TS) must rather *indirectly* copy *devī́bhyām*! Note also that Slavic has no such case of stem-transference and since PBSl. *$*ak\acute{\overline{\textit{i}}}$* and *$*au\d{s}\acute{\overline{\textit{i}}}$* were not synchronically reinterpretable as nom.-acc. duals of a neuter *i*-stem (being the only representatives of their own kind), predesinential *$*-\acute{\overline{\textit{i}}}$-* simply is not likely to be anything but inherited, its source thus surely matching that of its Proto-Indo-Iranian equivalent (if, however, PSl. *$*\tilde{a}\check{c}i$* > *$*\ddot{o}\check{c}i$* and *$*\tilde{a}\d{u}\check{s}i$* > *$*\hat{u}\check{s}i$* were aligned with nom.-acc. du. of feminine *i*-stems, as was the case in Baltic, one would expect **$**o\check{c}$ьma*, cf. Lith. *akìm*, *akim̃* < *$*akim\acute{\overline{a}}$*).

On the one hand, in my view, it is most economical to assume that this particular behaviour (*$*-íh_1$-* throughout the oblique) was only ever typical of deradicals (including *$*h_2us$-íh_1-*, which was unavoidably only interpretable as such after the degemination of a heteromorphemic *-s-s-* to *-s-*), because it was only there that *$*-íh_1$-* in the nom.-acc. du. was synchronically interpretable as a suffix and thus effectively a part of the stem itself (compare a similar reinterpretation and secondary spread of coll. *-i* throughout the oblique in the demonstrative pronoun).

If, on the other hand, one insists on a recurrent *$*-ih_1$-* that would originally be typical of all neuter duals (a possibility rendered unlikely not least by the altogether different behaviour of the functionally comparable plural collective *$*-(e)h_2$-* suffix), the only way to explain the absence of *$*ih_1$* in the oblique cases of other neuter stem types would then have to be an analogical levelling of the masculine forms (e.g., *$*-u-h_1$-* vs. *$*-\d{u}-ih_1$-* but *$*-u-b^{ho}$* etc.). Whether these could have had a steady *$*-h_1$-* in the oblique as part of their dual stem is a different question, though even in case they did, the laryngeal would have been lost anyway by lex Wetter in mobile stems ending in a vowel or a resonant (*$*^oV/\d{R}h_1b^h\d{i}\acute{o}h_1$*) and by Schmidt-Hackstein's law in the case of consonant stems (*$*^oPh_1b^h\d{i}oh_1$*, cf. *$*d^hug_2tr$-* > *$*d^hugtr$-*) which would have applied in the

Ved. *-ī́bhyām* [50] ~ O/YAv. *-ibiiā* [51] ~ OP *-ibiyā* /-ībiịā/ < PIE *-íh₁-bʰịoh₁*, matching PSl. *-ь̃ma* < *-imȧ* (by retraction to a laryngeal-induced length according to Hirt's Law) < *-íh₁-m-o-h₁*, gen. du. Av. *-iiā̊* /-iịāh/ ~ OP *-iyā̊ʰ* /-ī̃ịā/ (see above on the possibility of a secondary length in the OP form) < *-íh₁-h₁oh₁s*, corresponding to Ved. *-ɣ̣oṣ* (→ *-yóṣ*) and PSl. *-ь̃ịu̇* < *-iịoy̆s*

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dat.-abl. du. of those IE branches that use *-bʰị-óh₁* (i.e. Indo-Iranian). This hypothesis would not account for the absence of *h₁* before the Idu. endings *-bʰi-h₁* ~ *-mih₁*, though here the data are of limited value, given that we basically rely on Old Irish, where the evidence is rather ambiguous (*-(a)ib* in thematics could equally likely be from *-oβin* as from *-āβin* < *-o-h₁-bʰih₁m* and the pre-desinential vowel in consonant stems can either be the thematic variant or *-aβin* if < *-h₁-bʰih₁m*, while *u*-stems require the assumption of an analogical spread of the thematic ending anyway), nor does it work for the Balto-Slavic dat.-instr. du. *-amā* < *-o-moh₁* (> PSl. *-oma*, Lith. *-ám* ~ *-ȧm̃*), so that the whole idea of the presence of *-h₁-* in the oblique of non-neuter stems should probably be abandoned. Apart from the domain of thematic stems there would also be no real structural motivation for the spread of *h₁*, but even there the assumption of a recurrent *-o-h₁-* must rest solely on Ved. *-ā-* in the thematic dat.-instr.-abl. du. *-ābhyām*. The latter, however, is much more likely to be analogical rather than reflect anything old — note that Iranian does not have a single unambiguously ancient case of this phenomenon, all YAv. examples (see [Hoffmann, Forssman 2004: 120] for the attestations) being explicable as analogical transfers of the *-ā-* from the feminine *ā*-stems since they are all neuters.

[50] **sakthī́* is only ever attested in the dat.-instr.-abl. du. as *sákthibhyām* (AVŚ X.10.21b, cf. *sakthibhyām* at PvB XVI.2.6), which is demonstrably a secondary remodelling of **sakthī́bhyām* on the basis of the *i*-stem *sákthi-*, as is obvious from the position of the accent that matches that of the singular strong stem.

[51] Note that the short *i* in the Avestan forms is a normal feature of this language, which in the oblique cases does not distinguish between old short *i-* ~ *u*-stems and their long *ī-* ~ *ū*-stem counterparts (cf. [Hoffmann, Forssman 2004: 125–135; de Vaan 2003: 247–248]): it does not speak against the reconstruction with an **ī́* and at the same time allows for an interpretation of the Old Persian forms as surely carrying length. The process of an analogical shortening of all originally long *ī*'s and *ū*'s cannot of course pre-date Younger Avestan (this feature in any Old Avestan form is therefore superstratal), since the prerequisite for the levelling-in of a short predesinential *i* or *u* has to be the Younger Avestan shortening of all long word-final vowels in polysyllables.

$< *\text{-}íh_1\text{-}h_1oh_1u\text{-}s$, loc. du. PSl. $*\text{-}ьi̯ù < *\text{-}i̯i̯ou̯ < *\text{-}íh_1\text{-}h_1oh_1u.$ [52], [53]

Abbreviations

1, 2, 3 — 1st, 2nd, 3rd person; acc. — accusative; abl. — ablative; coll. — collective; dat. — dative; du. — dual; gen. — genitive; instr — instrumental; loc. — locative; nom. — nominative; n. — neuter; obl. — oblique; pl. — plural; sg. — singular.

Alb. — Albanian; Arm. — Armenian; Av. — Avestan; Hitt. — Hittite; IE — Indo-European; Lith. — Lithuanian; OAv. — Old Avestan; OP — Old Persian; OPr. — Old Prussian; PAlb. — Proto-Albanian; PBSl. — Proto-Balto-Slavic; PIE — Proto-Indo-European; PIIr. — Proto-Indo-Iranian; PSl. — Proto-Slavic; Ved. — Vedic; YAv. — Younger Avestan.

AB — Aitareyabrāhmaṇa; AVP — Atharvaveda, the Paippalāda recension; AVŚ — Atharvaveda, the Śaunaka recension; DNb — Inscription b of Darius I from Naqš-e Rustam; PvB — Pañcaviṁśabrāhmaṇa; RV — Ṛgvedasaṁhitā; ŚBM — Śatapatha-brāhmaṇa, the Mādhyandina recension; TB — Tattirīyabrāhmaṇa; TS — Taittirīya-saṁhitā; XPl — a parallel exemplar of DNb by Xerxes.

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[52] The Proto-Slavic mobile accentual paradigm (c) of nom.-acc. du. $*òči$, gen.-loc. du. $*očĭma < *\text{-}imà$, dat.-instr. du. $*očьi̯ù$ ($\rightarrow *očĭi̯u$) and nom.-acc. du. $*ûši$, gen.-loc. du. $*ušĭma < *\text{-}imà$, dat.-instr. du. $*ušьi̯ù$ ($\rightarrow *ušĭi̯u$) (for the half-analogical forms $*očĭi̯u$, $*ušĭi̯u$ see [Dybo 2000: 61]) nicely points to a former oxytone (mezocolumnar) accentual pattern $*okī̀, *okī̀mō, *okii̯où \sim *au̯sī̀, *au̯sī̀mō, *au̯sii̯où$.

[53] All of these forms are of course retrojections based on what must have been late interparadigmatic levelling both in Proto-Slavic as well as in Proto-Indo-Iranian: e.g., $*\text{-}i\text{-}h_1oh_1u$ is really just $*\text{-}i\text{-}h_1u > *\text{-}i̯\text{-}u$ (PSl. $*\text{-}ьi̯u$) remodelled to $*\text{-}i̯\text{-}ou̯$ to match $*\text{-}ou̯ < *\text{-}o\text{-}h_1u$ (> PSl. $*\text{-}u$) of thematic stems. Regarding the reconstruction of the oblique dual cases, see especially [Hoffmann 1976: 561, fn. 2; Eichner 1982: 10–14, 41–42, 133–134], and [Klingenschmitt 2005: 414–416].

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