

Avestan compounds and the RUKI-rule

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1. In a number of Indo-European languages, PIE **s* was retracted to *š* after **r, u, K, i*. This retraction, which is known in the literature as the RUKI-rule (henceforth, RUKI), is a shared innovation of Indo-Iranian and Balto-Slavic. It probably was also operative in Armenian, although the evidence is limited to two items, viz. *t'aršamim* / *t'ařamim* 'I wither' and *veřtasan* 'sixteen' (Meillet 1936: 39f.) For the remaining satem language, Albanian, RUKI cannot be demonstrated because PIE **s* yielded Alb. *sh* [š] in most environments (cf. Kortlandt 1986: 42f. and 1987).

The retracted pronunciation of **s* was a phonetic feature, probably common to the satem group, which was phonemicized in the separate branches. This is the reason why, for instance, RUKI was operative in Indo-Iranian also after **i < *H* or **r < *l*, i.e. in the position after sounds which have only arisen as the result of specific Indo-Iranian sound changes. Here are some examples:

**i < *H*

- PIE **kreuH₂-s-*, **teuH₂-s-* > Skt. *kravíř-* n. 'raw meat', GAv. *təuuīř-* n. 'violence';
- PIE **kH₂s-* > Skt. *(a-)śīřat* 3sg. them. aor., GAv. *sīřōit* 3sg. opt. and *sīřā* 2sg. impv. them. aor. 'to instruct, command').

**r < *l*

- PIE **k^wels-* > Skt. *karř-*, Av. *karř-* 'to draw furrows, plough'.

2. In Iranian, the phonemicization of RUKI can be associated with the development of PIIr. **ts* to Ir. **ss > s* and PIIr. **-t^st-*, *-d^zd^h-* to *-st-*, *-zd-*.¹ These newly arisen *s, z* were not affected by a preceding *i u r*, cf.

- GAv. *us^o* prev. < PIIr. **uts*;
- GAv. *cisti-* 'thought' (Skt. *čitti-*) < PIIr. **čit^sti-*;

¹The development of PIE **k > PIIr. *č* in Iranian is a matter of controversy. If the commonly Iranian reflex of this phoneme was **s > Av. s*, OP *ř* (position defended, for instance, by Nyberg 1931, cf. also Hoffmann 1976: 637, fn. 25), this may have played an important role in the phonemicization of RUKI, as this PIIr. **s* was not retracted in the RUKI environment. If, however, PIIr. **č* yielded PIIr. **t^s* (from where Av. *s*, OP *ř*), as was argued e.g. by Klingenschmitt (1975: 77), the development PIIr. **č > *s* only occurred in separate languages and is thus of a much later date than **ts > s*.

- GAv. *vōistā* 2pl. pf. ‘you know’ (Skt. *vet̐tha*) < PIIr. **uid̐tHa*;
- GAv. *vərəzda-* ‘big, mature’ (Skt. *vr̐ddhá-*) < PIIr. **ur̐d̐d̐a-*.

In this way, the new *-st-*, *-zd-* < PIIr. **-t̐t-*, *-d̐d̐-* became phonemically distinct from *-št-*, *-žd-* < PIIr. **-st-*, *-zd̐-* in the RUKI environment (e.g. in the superlative suffix *-išta-*, Skt. *-iṣṭha-*), which resulted in the rise of two new phonemes **š*, **ž*.

Since PIIr. **s* in many positions became Ir. *h*, Iranian had two morphophonemic pairs, viz. *h/š* (e.g. OP *had-* vs. *ni-šad-*) and *s/ž* (e.g. OP *ava-stā-* vs. *ni-štā-*).

3. The RUKI distribution in Iranian simplicia is well preserved (cf. Av. 2sg. impv. med. *dāhuuā* vs. *kərəšuuā* or 2sg. pres. *daḍāhi* vs. *kərənūšī*). The only moot issue is the fate of **šr* in Avestan. We find LAv. *tišrō* nom.pl.f., *tišram*, *tišranam* gen.pl. ‘three’², and, on the other hand, GAv. *θβisrā* (Y 31.13) ‘brilliance, luster’ < **tuisro-* (cf. Skt. *tvīṣ-* ‘agitation, sparkling, flashing’). Moreover, the sequence *fšr* probably yielded *fsr* in Avestan, cf. GAv. (+YH) *fsəratū-*/*fsratū-* of unclear meaning and etymology (for a discussion see Narten 1986a: 186ff.).³ Reconsidering the evidence, we see that the reliable examples of *sr* < **šr* are limited to GAv., so that the different treatment of the *šr* cluster is probably due to a dialectal difference between GAv. and LAv. At any rate, the vacillation in Avestan indicates that dissimilation *šr* > *sr* must be a relatively late phenomenon, independent of the well-known Sanskrit dissimilation of **ṣ(a)r*, **ṣr* to *s(a)r*, *sr*.

4. The situation regarding compounds and reduplicated formations is different, however. Here we find numerous instances where RUKI did not apply side by side with the secondary spread of *š*, albeit only marginal.⁴ We start with the latter category.

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In Old Persian, we find *niy-a-šādayam* 1sg. impf. ‘I established’ (from *ni-šādaya-*, *√had-* ‘to sit’), *niy-a-štāyām* 1sg. impf. ‘I commanded’, *niy-a-štāya* 3sg. impf. (from *ni-štāya-*, *√stā-* ‘to set, stand’) with the RUKI *š* after the augment (Kent 1953: 40). Further, the PIIr. enclitic

²GAv. *dušəṛəθri-* most probably comes from *duš-* + *həṛəθri-* ‘having bad protection’, cf. Kuiper 1979.

³A comparable development **yžr* > *yžr* was assumed for the hapax *ā-* and *vī-yžrādaīiciti* (Yt 8.31) ‘to stream’, if this formation be related to *yžar-* ‘idem’ (Bartholomae GIP: 18), which remains uncertain.

⁴This state of affairs is not very different from Sanskrit. There are two instances of analogical spread of *ṣ* in the RV. One is the pluperfect *pari-āṣasvajāt* (1.182.7), where *-ṣ-* is due to the fact that the root *svaj-* ‘to embrace, encircle’ is exclusively used with the preverb *pāri* (*pāri ṣvajāt*, *pāri ṣasvaje*, *pāri-ṣasvajānā-*, *pāri-ṣvāj-*, etc.). The other instance is *upa-ṣtūt* (9.87.9), probably an adverb (for the meaning see Oldenberg, Noten ad loc. and Renou EVP IX: 100), with *ṣ* taken from compounds like *ānu-ṣtuti-*, *pāri*, *prāti*, *du(ṣ)-ṣtuti-*, *su*, *ari-ṣtutā-*, *puru*, *ṣi-ṣtuta-* and *sū*. However, we still have *upa-stuta-* and *upa-stut-* with the correct sibilant (cf. also *deva-stūt-* and *iṣaḥ-stūt-*).

Already in the AV the instances of secondary *ṣ* become more numerous (after the augment: *abhy aṣṭhām* 10.5.36, 16.9.1, *ādhy aṣṭhām* 12.1.11, *ādhy aṣṭhāt* 10.10.13, *vy aṣahanta* 3.10.12, *abhy-aṣicyanta* 14.1.36; after the reduplication syllable: *vī taṣṭhe* 9.10.19, *vī taṣṭhire* 4.6.2; cf. Whitney ad AVPr. II.92, 93), and the analogical spread of *ṣ* went on in the later texts.

pronoun *-si-, -sa- has been generalized in Old Persian as -šaiy, -šim, -šām, -šš from the RUKI environment, whereas GAv. generalized the other variant, viz. *hōi*, *hīm*, *hīš*. In LAV., however, the RUKI distribution is preserved to some extent (Bartholomae: 1726).

In Avestan, I know of only two instances of secondary š, and both are problematic. In N 44, *pairiiaštaieiti* appears after *pairištaiieiti* in the same passage without any difference in meaning, and it is likely that this is a mss. error, considering the poor state of the preservation of this text. The second instance is Yt 14.54

yaṭ nūrəm viiāmbura daēuua
mašiiāka daēuuaiiāzō
vohunīm vā tācaieicīti
*frašaēkəm vā frašicaṇti*⁵

‘wenn jetzt die daēvischen Vyāmbura’s, die daēvaanbetenden Menschen, das Blut fließen lassen oder (es) unter Vergießen verspritzen’ (Bartholomae – Wolff).

The figura etymologica *frašaēkəm fraši(ṇ)caṇti* refers to a ritual abuse of some kind (Lommel 1927: 142 fn.). The forms are usually derived from *fra-√hic-* ‘to pour’, the š being taken from forms where the root stood after preverbs in -i, but, strangely enough, we find -h- there, cf. *paiti.hiṇcaiti*, *hiṇcōiš*, *hiṇcōiṭ*, inf. *paiti.hiṇcāi* (see also below, § 6.1.3.).

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5. In Late Avestan, second members of a compound in *st-*, *sp-* often appear without RUKI reflexes, which is most probably due to the influence of frequent sequences like *-ist-*, *-isp-* where the absence of RUKI reflexes was phonetically regular.

5.1. After *u*, *st-* always remains unchanged, cf. *ərəzu.stauuah(a)-* (V 6.16) ‘as thick as a finger’, *baē(.).ərəzu.stauuah(a)-* (V 6.18) ‘as thick as two fingers’, *bāzu.stauuah(a)-* (V 6.20) ‘as thick as an arm’, *gāustauuah-* (Aog 78) ‘as big as a cow’, *+gaostāni-* (V 15.29,30) ‘cowshed’, *bāzu.staoiiah-* (Yt 5.7) ‘with very strong arms’, *mainiiu.stāta-* (Yt 13.2) ‘placed by the spirits’, *hustarəta-* (Yt 17.9) ‘beautifully spread’.

These compounds are fairly young formations, and for the speakers of the language there was no need to apply RUKI because of the frequent sequence *ust < *ut-t* (e.g. *ustānazasta-* ‘with outstretched arms’, *ustəma-* ‘final, last’, etc.).

5.2. After *i* or *r*, *st-* usually appears as *št-*, as expected, but unchanged *st-* is also occasionally attested, primarily in late texts, cf.

- *paiti.staiiata* (Yt 17.17) 3sg. med. inj. caus. of *√stā-* (vs. *paitištā-*, *paitištāna-*, *paitištana-*, *paitišti-*, *paitištātə-*, *paitištātaiiā-ca*), probably after Yt 10.89 *staiiata*;
- *bərəzi.stūna-* (Vyt 9) ‘with high posts’;

⁵ A better reading is *+frašicaṇti* (Kellens 1984: 169).

- *bi-staora-* (N 45) ‘consisting of two head of large cattle’ (vs. NPr. *pairi-štūra-*);
- *sruuī.staiiām* (Yt 10.129) acc.sg. ‘having as barbs two horns’ (Gershevitch 1959: 280f);
- *aṇtarə.stā-* (Yt 13.153; only the ms. J10 reads *aṇtarə.štā-*) ‘staying in between’;
- ⁺*hap^vharə-stāt-* (V 4.49; only mss. Pt2 and M3 write *aṇ^vharəštātəm*, cf. Kellens 1974: 266ff) ‘staying in secrecy’ (vs. *vaṇharə-štā-* ‘staying in clothes’);
- ⁺*x^vaini.starəta-* (Yt 5.102), [°]*u-* (V 14.14) ‘with a beautiful cover’⁶;
- *vī-staru-* (Yt 5.76, 13.102) NPr. (vs. *ni-štarətō.*, *aiβi-štara-*, for which see Gershevitch 1959: 253 fn., etc.).

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Here, too, the probable reason for the absence of RUKI reflexes in these recent compounds is the abundance of the sequences *ist* (< **itt*) in Avestan.

5.3. Initial [°]*sp-* of the second member always remains unchanged, cf. the finite forms and derivatives of [√]*spas-* ‘to espy’ (*hispōsaṇt-* ptc. act. and *hispōsəmna-*⁷ ptc. med. of the red. pres., *auui.spašta-*, *pouru.spaxšti-*, *baēuuarə.spasan-*) and *vī-√spar-* ‘to pound’ (*vīsparaṭ* 3sg. inj., *vīspara* 2sg. impv.).⁸ This treatment must be seen in the light of the development of PIIr. **čū* (PIE **kū*) to Av. *sp* (e.g. PIE **H₁ekūo-* > PIIr. **acūa-* > Av. *aspa-*, OP *asa-*, cf. Skt. *ásva-* ‘horse’). The probable intermediate stages were PIIr. **čū* [t^su] > **t^sp* > **śp* > Av. *sp*. It is conceivable that the final stage (**śp* > Av. *sp*) has also triggered the development **šp* > *sp*, which had as a result that the cluster *šp* is unattested in Avestan.

On the other hand, it should be borne in mind that Av. *sp* < PIIr. **čū* was not affected by RUKI, so that *sp* after RUKI was a frequent sequence, cf. the following forms and derivatives of the root [√]*spā-* ‘to throw’ < PIIr. **čūā-* (cf. OP *niy-a-saya*, Kellens 1984: 138, although it has no clear etymology outside Iranian): *sispata*, *sispəmna-*, *aipi.spaieiti*, *ni-spā-*, *upairi.spāt-* (cf. Gershevitch 1959: 275), *pairi.spāti-*; further *nasu-spā-* ‘thrower of the corpses’, *spaiia-* ‘throwing of the corpses’ (cf. Kellens 1974: 235 with references), and *pouru.spāḍa-* ‘having a great army’ with *spāḍa*, which is probably derived from the same root. Also the very frequent *vīspa-* ‘every’ (< PIIr. **vicūa-*) may have played a role. Accordingly, the analogical origin of *sp-* after RUKI is likely.

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5.4. It is significant that compounds the second member of which began with [°]*sm-* and [°]*sn-* always have *š* in the RUKI environment, simply because elsewhere in the language *sm* and *sn* after RUKI do not occur. Here is the evidence:

⁶Geldner edits in Yt 5.102 *x^vaēui.starəta-*, with the mss., and this reading is defended by Gershevitch 1959: 189, who compares Oss. *xiw* / *xew* ‘astride’ and translates the compound ‘spread astride’.

⁷In Yt 10.45, Geldner reads *hišpōsəmna-*, but in the additions at the end of the book he says that *hispōsəmna-* is the correct reading, *-šp-* being only attested in one inferior manuscript L 18, cf. Kellens 1984: 193.

⁸The *s-* in *nasu-spaiia-* (V 1.16) ‘cooking of the corpses’ is secondary, probably taken over from *nasu-spaiia-* ‘throwing away of the corpses’, see Duchesne-Guillemin 1936: 16.

^ošm-: finite forms and derivatives of $\sqrt{(s)mar-}$ ‘to remember’, cf. *paiti-šmarənte*, *paiti-šmarəmna-*, *paiti-šmarənt-* etc., *aiβi.šmarəta-*, redupl. *hišmarənt-*, *hišmāiriia-*, ⁺*ratuš.mərət-* (= *ratu-šmərət-*) ‘paying attention to the rules’. The š is probably secondarily introduced into *paiti.šmuxta-* ‘shod’, cf. *fra-muxti-*. For *maiδiiōi-šəma-* see below, § 6.4.

^ošn-: YH *hū-šnāθra-* (Y 38.3 = Y 67.6) ‘gute Badestellen habend’ (for the meaning cf. Narten 1986a: 219).

6. We may conclude that the behaviour of Avestan compounds with second members in ^os(C)- is quite predictable and does not present serious problems. The situation with compounds and reduplicated formations in ^oh- (< ^o*s-) and ^ox^v- (< ^o*sq-) after RUKI is much more complicated, however. We find three different reflexes, viz. *h/x^v*, *š*, and *šh/šx^v*, and their distribution has not yet been established. It is clear that *š* is the expected variant, but it is not the case that compounds with *š* represent the older, archaic layer. For instance, there seems to be no reason why the infinitive *aiβišasta* (*aiβi* + $\sqrt{had-}$) must be older than the infinitive *aiβiš.hutaiiaēca* (*aiβi* + $\sqrt{hu-}$) or 3sg. *paiti.hištaiti* (*paiti* + red. pres. $\sqrt{stā-}$). Sometimes, we even find different reflexes with the same root, cf. *nišādaia-* caus. vs. *nišhiða-* red. pres. from *ni* + $\sqrt{had-}$.

In view of this state of affairs, it seems worth while to investigate the question whether the three reflexes may to some extent be phonetically conditioned. In the following sections, we shall examine the evidence from this perspective.

6.1. Let us first look at *h* in the RUKI environment.

6.1.1. This reflex is regularly found when the next syllable contains š:

- *paiti hištaiti*, *paiti hištəmna-* (Yt 10.36) red. pres. act./med. ‘to take stand (in battle)’ from $\sqrt{stā-}$;
- *paiṛi.harəšiiēnte* (Y 27.6) ‘they will be filtered’, 3pl. fut. $\sqrt{harz-}$;
- *varšni-haršta-* (Y 1.9, 2.9, 3.11, 4.14, 6.8, 7.11, 17.8, 22.11, Vr 1.2, 2.2) ‘characterized by coupling of the ram’ (epitheton of Aiiāθrima, the fourth season), from $\sqrt{harz-}$ ‘to let loose’ with the LAV. development **ərš* > *arš*;
- *paiṛi.aḡharšta-* /*pari-haršta-*/ (Yt 5.8,63; V 14.4) ptc. ‘filtered’ (for the secondary *-aḡ-* see Caland 1893: 589f).

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There is only one exception, viz. *viš.huškō* (V 5.36) ‘dried out’, but this word is probably corrupt, see the appendix.

This limitation of RUKI is reminiscent of a similar situation in Sanskrit, where *s* does not become *ṣ* if the next syllable contains a *ṣ*,⁹ cf. *sisakṣi* (1.73.8) 2sg. redupl. pres. $\sqrt{sac-}$ ‘to follow’

⁹In simplicia, we only find *yāsisīṣṭhāḥ* (4.1.4), 2sg. prec. of the *siṣ-*aor. *yā-* ‘to go’ (for this form see Narten 1964: 210f.), which is explained by Wackernagel (AiGr. I: 233) by dissimilation from the sequence *s-ṣ-ṣ* (vs. *vanīṣṭṣṭa*, *janīṣṭṣṭa*, etc.).

(vs. 3sg. *śiṣakti*, 3sg. impv. *śiṣaktu*, 2pl. impv. *siṣakta*), *anu-seśidhat-* (1.23.15) part. pres. intens. *√sidh-* ‘to succeed’; *ānu-spašta-* (10.160.4) part. *√spas-* ‘to perceive, espy’; *sú-snuṣa-* (10.86.13) adj. ‘having a good daughter-in-law’. Cf. further *pāri saniṣvaṇat* (8.69.9), where *ṣ* does not even stand in the next syllable.

Nevertheless, it seems improbable to me that the *h* of the Avestan compounds is due to a Proto-Indo-Iranian development, as these compounds are of a recent date. Rather, we may assume that this reflex is due to dissimilation of *śh* (*śh* > *h* / *_ś*), the more so as *h* stands before *i*, /*r*/ and *ar*, i.e. in those positions where we normally find *śh*, see below.

6.1.2. The preverb *ham-* and the prefix *ha-* often do not show RUKI reflexes:

- *auui.ham.vazaite* (Yt 19.67²) ‘flows (into the lake)’.
- *auui.haṇtacaiti* (Yt 19.67²) ‘flows together (into the lake)’.
- ⁺*auui.haṇtacina-* (V 21.7 = 11 = 15) adj. ‘flowing together’ (*frā.tē hazagrēm xām azəm iḍa frasnaieni gaodanəm* ⁺*auui.haṇtacinā yaṭ asti puθrahe θrimō* ‘Dir will Ich nun die tausend Quellen rein waschen, (die) zum Milchgefäß zusammenfließen, das die Nahrung des Kindes ist’, Bartholomae – Wolff). In Geldner’s edition and in Bartholomae’s dictionary (s.v. and p. 181), *auui.haṇtacinā* is taken as two words, *auui* being analyzed as a postposition to *gaodanəm*, but in view of the verb *auui.haṇtacaiti*, it seems preferable to consider *auui.haṇtacina-* as a compound.
- *rāiti.haṇkərəθa-* (Y 19.16) ‘accomplished by *rāiti-*’. On the other hand, Geldner in his edition reads *rāiti haṇkərəθa-* in two words, thus considering *rāiti* an instr.sg., which is a possible analysis (cf. Duchesne-Guillemin 1936: 118).
- *mainiiu.ham.tāšta-* (Yt 10.67) ‘created by Mainyu’. This hapax, too, may be analysed as two words, *mainiiu* being instr.sg. In the same Yašt (10.143), it is said about Miθra’s chariot: *ham.tāštəm yō daḍuuā spəntō mainiiuš* ‘fashioned by the creator Spənta Mainyu’ (cf. Gershevitch 1959: 294 about this passage and construction). A clear compound with the same meaning is *mainiiu.tāšta-*, attested several times.
- *huuarə.hazaoša-* (Yt 10.51, 13.92, Ny 1.1) ‘in all harmony with the sun’ (Gershevitch 1959: 99). It is conceivable, however, that this is not a compound either (cf. Duchesne-Guillemin 1936: 128f. for a discussion of this word).

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The *śh*-reflex is only found in *huš.ham.bərət-* ‘easily acquiring’, *huš.ham.bərəta-*, and *huš.ham.sāsta-* ‘easy to manage’, for which see below, § 6.2.2.

This situation is comparable to that of Sanskrit where the initial *s-* of the preverb *sām* does not undergo RUKI, cf. the following examples from the RV: *ādhi sām punāmi* (10.13.3), *ādhi sam-dadhūḥ* (3.3.3); *ānu sām rabhadhvam* (10.103.6), *ānu sam-cārantī* (3.33.3), *ānu sam-tāvīvat* (4.40.4); *abhi sām* and *abhi sam-* (19x). The reason for the aberrant behaviour of *sām* is simple. When a verb has two preverbs, the second preverb is much more closely connected with the verb than the first. This follows, for instance, from the accentuation in subordinate clauses, where the second preverb, in contradistinction to the first one, loses its accent, cf. *abhi sam-*

dadhuḥ (1.101.6), *abhi sam-cāranti* (8.48.1, 10.4.2), *abhi sam-nāvāmahe* (8.69.5) (see Delbrück 1888: 48, Oldenberg 1907).

The behaviour of *°sam-* in the nominal compounds of the RV is more complicated, however. If the second member is a verbal noun in *-ta-*, i.e. a formation closely associated with the verb, the *s-* of *sam-* remains unchanged, cf. *ádri-sam-hata-* (9.98.6), *puru-sam-bhṛtā-* (8.66.4, 8.100.6), *sú-sam-rabdha-* (10.72.6), *sú-sam-śita-* (5.19.5), *sú-sam-skṛta-* (1.38.12, 8.77.11), *sú-sam-iddha-* (1.13.1, 5.5.1), *sú-sam-ubdha-* (1.158.5), *sú-sam-piṣṭa-* (4.30.11), *sú-sam-mṛṣṭa-* (3.43.6). The other nominal compounds indiscriminately show *°sam-* or *°sam-*, cf. *su-sam-sād-* (7.9.3), *su-sam-kāśā-* (1.123.11), *su-sam-dṛś-* (8x) vs. *su-ṣam-sād-* (1.112.7, 9.68.8), *svādu-ṣam-sād-* (6.75.9), *su-ṣam-īdh-* (5.8.7, 7.17.1). The original distribution probably was *su-ṣam-īdh-* vs. *sú-sam-iddha-*, but the "unchangeable" *sam-* analogically spread to other contexts.¹⁰

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The rule that *sām* is resistant to RUKI was also analogically applied to the prefix *sa-* (RV 1.113.6 *vī-sa-dṛśa-*, 5.57.4 *sú-sa-dṛś-*, cf. the frequently attested *su-sam-dṛś-*). A comparable generalization may account for *huuarə.hazaoša-*.

6.1.3. Further, no RUKI-reflex of the root *haēc-* 'to pour' is attested:

– pres.ind. V 9.52 *paiti.hiṇcaiti*, pres.opt. V 8.40, 58², 70², 71², 9.15, 16³, 17⁴, 18³, 19³, 20³, 21⁴, 22³, 23⁴, 24³, 25², 26² *paiti.hiṇcōiš*, 9.47 *paiti.hiṇcōit*, inf. V 9.14 *paiti.hiṇcāi*), which is comparable to the absence of the RUKI reflex in Skt. *sisice* (RV 3.32.15) and *sisicuḥ* (2.24.4) vs. *siṣicatuḥ* (7.33.13). Presumably, the palatal environment could block the operation of RUKI. For the secondary *-š-* in the figura etymologica *fra-šaēkəm fra-šicaṇti* (Yt 14.54) see above, § 4.

6.1.4. Other instances of *h-* are uncertain.

– *pouru.hazagra-* 'amounting to many thousands' in both its occurrences (Yt 13.65 and V 20.4) stands between *pouru.sata-* 'amounting to many hundreds' and *pouru.baēuuan-* 'amounting to many ten-thousands' and is likely to be a nonce formation.

– *pairi.harəzāt* (N 75), 3sg. conj. of *√harz-* 'to let loose' is attested only in a late inferior text and has irregular vocalism, which may be attributed "au compte des négligences de la transmission manuscrite" (Kellens 1984: 101). On the other hand, it is important to note that N 75 *pairi.harəzāt* is used as a *terminus technicus* for 'to filter', which, elsewhere in the Avesta, occurs either in the future (Y 27.6 *haoma pairi.harəšiiēnte* 'Haomas must be filtered', Vr 12.1 *haomanāma harəšiiamnanāma yōi harəšiiēnte*), or as a participle *pairi.aḥaršta-*, in both cases with phonetically regular vocalism (LAv. *-arš-* < **-rš*). It is probable that N 75 *pairi.harəzāt* is based on Y 27.6 *pairi.harəšiiēnte*, which would account not only for its vocalism, but also for its *h-*.

¹⁰ Note that *suṣamīdh-* is used both times in a *figura etymologica*, cf. *suṣamīdhā sām īdhire* (5.8.7) and *suṣamīdhā sāmīddhe* (7.17.1), which points to its formulaic use and, consequently, to its antiquity (for the construction see further Hoffmann 1986: 201 = 1992: 834).

- *pāiri.haēzaṇ^vha* ‘?’ (V 21.4,12,16) is unclear (see Kellens 1984: 108f. with references). 308
- P 34 (35) *varəzi.haomanaghəm*: see JamaspAsa – Humbach 1971: 54f.

6.2. Typically Iranian is the peculiar reflex *šh* or *šx^v*, which takes the place of the initial *h* or *x^v* of the second member. The *šh/šx^v* forms are frequent in LAv., but also in GAv. we find two examples, viz.

- GAv. *huš.haxi-* (Y 32.2, 46.13) ‘good ally of (+ instr.)’, instead of the expected **hu-šaxi-* from *hu-* + *haxi-*, cf. Skt. *su-ṣakhī*, *su-ṣākhi-* ‘id.’;
- GAv. *ānuš.haxš* (Y 31.12) adv. ‘in due course’, cf. Skt. *ānuṣāk* ‘in turn’.

The *šh*-forms are also found in Old Persian, cf.

- *ušhamaranakara-* (DNb 34, XPl 38) ‘good military leader’, attested in a formula *hamaranakara amiy* (*ahmiy* XPl 38) *ušhamaranakara* ‘as a military leader I am a good military leader’, which was the only way in old Indo-Iranian languages to express the idea ‘I am a good military leader’ (see Hoffmann 1986a = 1992: 829ff.).¹¹
- *Pātišuvāri-* ‘Patischorian’ (DNc 1). The Akkadian spelling of this name, viz. *pa-id-di-iš-ḫu-ri-iš*, and Gr. (pl.) Πάτισχορείς suggest that we must read the Persian word as *Pātiš^huvāri-*. The etymology of this term is disputed.

Furthermore, the *šx^v*-forms are found in Middle Iranian. Pahlavi *padišxwarr* [ptšhw]¹² ‘dish, bowl’ goes back to **patišx^varna-* and proves that OP *p-t-i-š-u-v-r-n-m* attested in a recently discovered inscription on a silver bowl must be read *patiš^huvarnam* ‘bowl’ (cf. Sims-Williams 1990). Elam. *bat-ti-iš-mar-na-bar-ra-is* can reflect OP **patiš^huvarna-bara-*¹³ ‘cup-bearer’ (Hinz 1973: 96, 1975: 189, Sims-Williams, o.c.).¹⁴

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The forms with *šx^v* are even preserved in Modern Persian, cf. *nišx^vār* ‘cud’ < **ni-sūāra-* (next to *nišwār*, its “arabicized form”, Henning 1965: 33, fn.1).

6.2.1. The *šh/šx^v* forms are generally ascribed to analogical restoration of *h/x^v* or to “einer Contamination der lautgesetzlichen Formen **hušaxa* und *haxa*” (Bartholomae GIP: 167), which

¹¹A probable parallel in the RV, not mentioned by Hoffmann, is the vocative *sánitaḥ sūsanitar* (8.46.20) ‘(O Indra,) a good winner as a winner!’.

¹²As indicated by Sims-Williams, *padišwarr* [ptšwl], which is a variant of the Pahlavi word, is due to the simplification of the cluster *šxw*, cf. Pahl. *duš(x)wār* [dws(h)w’l] ‘difficult, disagreeable’. “The third form *ptšhw’l* [padišxwār], which appears to have borrowed its *-ā-* from *xwār* “food” etc., has no claim to be regarded as ancient” (Sims-Williams, l.c.).

¹³For Elam. *-šm-* reproducing OP *-š^hu-* cf. Elam. *ba-ut-ti-iš-mar-ri-iš* for OP *Pātiš^huvāri-*.

¹⁴Sims-Williams (o.c.: 242) keeps the possibility open that “*padišwarr* is a direct descendant of Old Persian *patišuvarna-* and that *padišxwarr* (whose *-x-*, like that of Avestan *paitiš.x^varəna-*, is in any case a non-etymological accretion due to the influence of cognates with initial *x^v-*) is the later form”. This possibility can safely be discarded, since, as we shall see below, the forms with *-x-* are a linguistic reality.

amounts to the same thing. This explanation is not really satisfactory. There can of course be no doubt that forms like *huš.haxi-* are due to analogy because they are practically limited to compounds. However, a massive analogical replacement of **š-* by *-š.h-* can only take place in a ‘Kunstsprache’, which is acceptable as long as we speak about the *šh*-forms in Avestan. But the mere fact that these forms are also attested in Old Persian, Pahlavi, and Modern Persian, sufficiently demonstrates by itself that this is not an invention of the redactors of the Avesta but a linguistic reality.

There are more considerations in favor of the view that *šh/šx^v* was *sprachwirklich*. As was plausibly argued by Hoffmann (1958: 17 = 1975: 74), compounds like *druxš.manah-*, *vāxš.bərəti-*, *afš.citra-*, *aβž.δāta-* are likely to be based on the analogy with *šh* forms, which looked as if they contained a nom.sg. in the first member. Besides, we have seen above (§ 6.1.1.) that *h-* after RUKI is most probably due to dissimilation from *šh-* before *š* in the next syllable. Finally, the analogical origin of *šh/šx^v* does not explain the peculiar distribution of the *šh* and *š* forms, indicated by Caland (1893: 589), viz. that *šh* is primarily found before short vowels. We shall return to the origin of the *šh*-forms below.

6.2.2. Since the *šh* forms were a linguistic reality, we are justified in looking at the phonetic contexts where these forms appear.

šhax-:

- GAv. *huš.haxi-* (Y 32.2 *huš.haxā*, Y 46.13 *huš.haxāim*¹⁵) ‘good ally of (+ instr.)’ (Insler 1975: 198, Hoffmann 1986a: 200 = 1992: 833);
- GAv. *ānuš.haxš* (Y 31.12) adv. ‘in due course’ (Insler), cf. Skt. *ānuṣāk* ‘in turn’;
- *hušhaxman-* (Yt 13.30) ‘having good partnerships’;
- *ā.hišhaxti* (V 5.34) (3sg. red.pres. *√hac-* ‘to follow’, Skt. *síṣakti*).

šhah-:

- *paitiš.hahiiia-* (Y 1.9, 2.9, 3.11, 4.14, 6.8, 7.11, 17.8, 22.11, Vr 1.2, 2.2, A 3.2,9²) name of the deity of the third season, lit. ‘bringing crops’.

šhar-:

the finite forms and derivatives of *√har-* ‘to care for’:

- *nišaṇharatū /nišharatu/* (Y 58.4) 3sg. impv. (for the forms with analogical *-aṇ-* see Caland 1893: 589f.);
- *nišhauruuaiti* 3sg. (Y 57.16; Yt 10.103);
- *nišaṇharətaiaē(-ca) /nišhartaiiai/* (Y 58.2,3, 71.11³; Yt 5.6) inf.;
- *niš(.)harətar-* (Yt 10.54,80, 14.45, 19.18) ‘protector’ (Vyt 14 fem. *nišaṇharəθrī-* /nišharθrī-/);

¹⁵The latter form is written in Geldner’s edition as one word, but the major mss. do have a dot.

– *pasuš.hauruua-* (Yt 11.7; V 5.29, 13.8, 10, 11, 12, 13, 17, 20, 24, 42, 49², 15.3) ‘(dog) protecting the cattle’;

– *pəṛənāiiuš.harəθri.bu-* (Y 62.2) ‘having protection of a person of full age’;

– *dahmāiiuš.harəθri.bu-* (Y 62.2) ‘having protection of an initiated person’.

°*šhas-*¹⁶:

– *pasuš.hasti-* (V 15.32, 33-34², 47) ‘fold for small cattle’,

– *biš.hastra-* (N 31) ‘assembly of two’, *θriš.hastra-* (ibid.) ‘assembly of three’.

°*šḥam-*:

– *huš.ḥam.bəṛət-* (Yt 18.1²) ‘easily acquiring’,

– *huš.ḥam.bəṛəta-* (Yt 13.67) ‘easily acquired’,

– *huš.ḥam.sāsta-* (Vr 3.4, Vyt 64, G 4.9, H 2.18 *huš.ḥam.sāsta-* vs. H 2.36 *duš.ḥam.sāsta-*) ‘easy to manage’.

Secondary *šh* is attested in NPr. (Yt 13.102) *fraš.ḥam.varəta-* (Mayrhofer 1987: 41).

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°*šhəṛəz-*:

– *paitiš.həṛəzəm* (V 14.11) inf. √*harz-* ‘to leave’.

°*šhiδ-*:

– reduplicated present of √*had-* ‘to sit’¹⁷: *nišhiδaiti* (Vyt 54, H 2.2, 2.13, +*nišhiδaiti* Y 10.15¹⁸), subj. (V 16.1) *nišhiδāt*, opt. (Vyt 59) *nišhiδōiš*, (V 9.29) -*t*, (V 8.11, 9.33-35, 16.8², 9², 10²) -*aēta*.

°*šhu-*:

– *aiβišhuta-* (Y 11.3; some mss. *aiβiš.huta-*) ‘pressed out’,

– *aiβiš.hutaiiaēca* (Vr 9.3) inf. ‘to press out’,

For *viš.huška-* see the appendix. Note further *barəziš.hauuaṇtō* (Yt 17.9,10), +*barəziš.hauuaṇtəm* (Yt 5.102) /barziṣṇant-/ ‘with cushions’, on which Bartholomae (951) comments: "Schrullenhaft statt *ziš'vant* geschrieben". A similar case is *pasuš.huua* (N 58), loc.pl. of the word for ‘cattle’, but since the text is very late and badly preserved, we cannot be sure about the form. We shall return to these words below, § 6.5.

¹⁶ *nišaghasti* (Y.57.30) is "une faute évidente pour *nišhauruuiti*" (Kellens 1984: 59).

¹⁷ Humbach 1972: 987 convincingly argued that the unexplained loss of *ž* in **hiždati* < **si-zd-* is due to dissimilation. Both in Avestan and OP, the finite forms of the root *had-* are only attested with the preverb *ni-* (*apa.hiδat* Yt.19.56 probably corresponds to Skt. *apa-sidh-*), so that we may assume that *ž* in **niš(h)iždati* has been dissimilated.

¹⁸ Geldner edits *nišhaδaiti* with J2. Pt4. Mf1. K4. L20, cf. also *nišhaδaiti* M1. P6. B3. L17; *nišhaδaite* Mf2. J5; *niš.haδəti* Bb1; *niš.haδaeta* L3. On the other hand, we find *nišhiδaiti* J3. K10. L1.2. B2; *nišhiδəiti* J6. H1; *nišhiδəti* K11. L13; *nišhiδiti* J7.

There are only three compounds where we find *šh* before long *ā*, viz. *ašiš.hāgəṭ*, *ārmaitiš.hāgəṭ*, and *pairiš.hāuuani*-. These are discussed below, § 6.5.

6.3. Compounds with second members in $\overset{\circ}{x}^v$ - show the following picture. The most common reflex is $\check{s}x^v$, cf.

- *hušx^vafa* (Y 57.17) 3sg. pf. $\sqrt{x^v}ap$ - ‘to sleep’;
- *paitiš.x^vana*- (N 26) ‘disturbing noise’;
- *pairiš.x^vaxta*- (Y 11.7) ‘surrounded on all sides’;
- *paitiš(.x^varəna*- (V 3.14, 8.43,44, 9.16,40) ‘jaws’;
- *aiaṇhō.paitišx^varəna*- (Yt 10.70) ‘with iron jaws’;
- *aiβiš.x^varəθa*- (V 6.32,38,41) ‘suitable for consumption’;
- *anaibiš.x^varəθa*- (V 6.31,34-5,37) ‘unsuitable for consumption’;
- *mainiiuš.x^varəθa*- (Y 55.2²; Yt 10.125) ‘reared on supernatural food’ (Gershevitch 1959: 312 135);
- *pasuš.x^varəθa*- n. (V 19.41 Gl.) ‘food for the cattle’.¹⁹

Unchanged x^v is found in three compounded verbs (V 18.16,24 *ni-x^vabdaieiti* 3sg. ‘to put to sleep’, Y 57.10 *paiti x^vaṇhaiieiti* 3sg. ‘to thrash’, cf. for the meaning Benveniste 1959: 43f, ViD 10 *aiβi x^varənti* 3pl. ‘to eat’) and in compounds with $\overset{\circ}{x}^v arənah$ - ‘good fortune’, viz. personal names *ātərə-x^varənah*- (Yt 13.102) and *aiβi-x^varənah*- (Yt 13.117), adjectives *aiβi.x^varənah*- (Yt 15.48) ‘full of $x^v arənah$ ’, *pouru.x^varənah*- (Yt 18.1; V 19.3; Ny 3.11, 5.6; S 1.9, 2.9; Vyt 7, 24 *paouru.x^varənah*-) ‘with much $x^v arənah$ ’, *viṇdi-x^varənah*- (Yt 15.45) ‘with the found $x^v arənah$ ’.

Finally, in one compound we find both variants, viz. *pouruš.x^vāθra*- (Y 68.11; Yt 10.108, 18.4, 19.54) ‘bringing much comfort’ next to *pouru.x^vāθra*- (Y 1.14, 2.14, 3.16, 4.19, 6.13, 7.16, 17.14, 22.16; Yt 1.14; Vr 1.6, 2.8; Az 7; S 1.28, 2.28). The distribution of these forms has been clarified by Duchesne-Guillemin (1936: 14), who has pointed out that the majority of the occurrences of *pouruš.x^vāθra*- is found in metrical texts (Y 68.11; Yt 10.108, 19.54), whereas *pouru.x^vāθra*- is never attested in a metrical text and is therefore likely to be younger. Only in Az 7 (a late and unoriginal text, see Bartholomae XXII) does *pouru.x^vāθra*- stand on its own. In Yt 1.14, this word is used in parallel with *vīspa.x^vāθra*-, while elsewhere it occurs in a standing expression *ašax^vāθra*- *pouru.x^vāθra*-. We may conclude that the absence of -š- in *pouru.x^vāθra*- is due to the influence of the surrounding compounds.²⁰

¹⁹The compound *kərəfš.x^var*- (V 3.20; 6.45², 46², 47²; 7.29², 30², 33², 34², 8.10², 36², 37², 98², 99², 9.49; FrW 11²) ‘eating corpses’ is ambiguous: it may show the development *fš.x^v* < **-fšv*- < **-psv*-, but the secondary character of -š- cannot be excluded either (cf. compounds like *druxš.manah*-, *vāxš.bərəti*-, *ašš.citra*-, *aβž.δāta*-, etc.). Vyt 38 *apaitiš.x^varəθā* and N 108 *hiš.x^vistō* are unclear.

²⁰Note, however, that Gr. Παράχοάθρας, El. *ba-ru-ma-at-ra*, *bar-ru-ma-ut-ra* and Arm. *parxar* (Bartholomae: 904, Hinz 1975: 182) seem to point to the form **pouru.x^vāθra*-. El. *par-ru-ma-tur-ri-iš* may be an *i*-patronymicon to the same name (Gershevitch 1969: 219, Mayrhofer 1973: 215).

The aberrant x^v of *ni-x^vabdaieiti* and two other verbs may be ascribed to their late and nonce character, but the consistent spelling of $^{\circ}x^v arənah$ -compounds calls for an explanation. It is remarkable that in the position after $-ā$, the initial x^v of $^{\circ}x^v arənah$ - likewise remains unchanged (*ušta.x^varənah*-, *vīspō.x^varənah*-, *barō.x^varənah*-, *haomō.x^varənah*-), whereas, for instance, the initial x^v of $^{\circ}x^v arəna$ - ‘eating’ often does appear as $-ḡ^v h$ - ($^{\circ}ḡ^v harəna$ - ‘dish, bowl’, $^{\circ}haḡ^v harəna$ - ‘cheek’). I hope to return to this issue in the future (see now Lubotsky 1998).

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6.4. Finally, we must look at the phonetic contexts of the \check{s} -forms.²¹ Most frequently, we find \check{s} before long \bar{a} :

$/^{\circ} \check{s}āh-/$:

– *išāḡhaēta* (Yt 19.53²) 3sg. opt. med. des. \sqrt{han} - (with secondarily lost h - of the reduplication), corresponding to Skt. *siṣāseta*, cf. Kellens 1984: 197 with references.

$^{\circ} \check{s}ā(n)-$:

- *daighu-šānō* (Yt 13.151) acc.pl. ‘who has conquered the country’;
- *zaṇtu-šānō* (ibid.) ‘who has conquered the district’;
- *vaghū-šānō* (ibid.) ‘who has conquered the goods’.²²

Here also belongs $*f\check{s}ū-šā$ -, attested in the gen.sg. *f\check{s}ū-šō* ‘owner of cattle’ (Skt. *go-ṣā́-*, *go-ṣā́ni-*; for a discussion of the original inflection see Kuiper 1942: 231ff., Kellens 1974: 106ff., and Beekes 1982-3: 200ff.).

$^{\circ} \check{s}ā(ii)-$:

- GAv. *hišāiīā* 3sg. pf. $\sqrt{hā(ii)}$ - ‘to bind’.
- F 4e (249) $^+paiti-šāθrāi$ ‘sich zu entschliessen, Entschlüsse zu treffen’ was taken by Bartholomae as an inf. to the same root, but Insler (1971: 580) has proposed to derive this word from the root $\check{s}āh$ - ‘to command, direct’, assuming dissimilation from $*pa^i ti-šāstrāi$ “with $s > \check{s}$ after i in analogy to the usual alternation $st-$ / $-i-št-$ ”. This derivation may be more attractive from a semantic point of view, but involves an analogy which is further unattested in Avestan.

$^{\circ} \check{s}āc-$:

- *gairi-šācō* (Yt 8.36, 19.66) nom.pl. ‘staying in the mountains’;
- *huuō.aiβi-šācim* acc.sg.f. (Y 52.1) ‘readily helping’.

$^{\circ} \check{s}ār-$:

- *hišārō* adj. ‘caring for’ (Y 57.17), probably derived from \sqrt{har} -. The attested form may be

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²¹ $^{\circ} \check{s}ūta$ - in *mainiiu.šūta*- (Yt.13.42) and *arəmə.šūta*- (Yt.13.72) does not come from $\sqrt{hū}$ - ‘to set in motion’ as assumed by Bartholomae s.vv., but rather from $\sqrt{\check{s}(ii)u}$ - ‘to move’ (cf. Duchesne-Guillemin 1936: 125).

²² In view of the context, *vī-šānō* (ibid.) ‘who has conquered the *vis*’ is likely to be an analogical formation $*vīs-šānō$ with a simplified cluster, and not an old compound $*vič-sanH$ -, as assumed by Kellens 1974: 107. The long \bar{a} in these acc.pl. forms may be unoriginal (Kellens o.c.: 111) but is certainly a linguistic reality.

the nom.sg. of a participle **hišārats* < **sisārṇts* (for the ending see Schindler 1982: 195ff.), although the long vocalism remains problematic.

°šād-:

- *nišāδaiiaṭ* (Y 9.24) 3sg. inj., *nišāδaiiōiš* (H 2.14²³) 2sg. opt. caus. of √*had*- ‘to sit’; note that secondary *š* in OP *niy-a-šādayam* (see § 4) presupposes caus. **ni-šādaya*;
- *armaē-šāiḍe* (Y 62.8) dat.sg. ‘sitting quietly’²⁴;
- *tušni-šāδō* (Yt 13.29) nom.pl. ‘sitting in silence’;
- *maiδiiōi-šāδəm* (Yt 13.100) acc.sg.f. ‘sitting in the middle’.

Further, we find °š- in the sequence °šas-:

- *aiβišasta* (Y 11.2) inf. ‘to mount (a horse)’, *nišasti*- (V 16.15³, 16, Pahl.cit. 3.14) f. ‘mounting (a woman)’ from √*had*- ‘to sit’;
- *vi-šastarə* (Yt 19.8) 3pl. pf. √*stā*- ‘to stand’;
- GAv. (Y 45.4) *vīspā hišas*, Yt 1.8 *vīspa hišas*, meaning something like ‘viewing, seeing everything’ (for the analysis see Humbach 1954: 53f), must be the reduplicated present participle from a root √*hā*-, probably ‘to view, regard’ (thus also Insler 1975: 75). Here possibly belongs GAv. (Y 32.13) *hīšasaṭ* /hišat/ 3pl. impf. of the same stem (Insler o.c.: 208, cf. also Schmidt 1979: 96).

The remaining instances of *š* are:

- GAv. *hu-šōna*- (Y 53.5) /hušana-/ ‘of good or easy gain’, corresponding to Skt. *suśāṇa*-;
- *vī-šaptaθa*- (Y 1.8, 2.8, 3.10, 4.13, 6.7, 7.10, 17.7, 22.10, Yt 7.4², Ny 3.6²), deity of the added seventh day after each full moon and new moon;
- *maiδiiōi-šōma*-²⁵ (Y 1.9, 2.9, 3.11, 4.14, 6.8, 7.11, 17.8, 22.11, Vr 1.2, 2.2, A 3.8²), deity of the second season and the feast connected with it, lit. ‘in the middle of the summer’. Theoretically speaking, °šōma- can also stand for /°šma-/ with an anaptyctic vowel, although anaptyxis in the cluster *šm* is rare (we only find *aēšōma*- /aišma-/ in Gāthic and in Yt 19.46, V 19.43, FrW 9.2). We then have to assume that /°šma-/ is due to the loss of laryngeals in compounds (the word for summer was PIE **semH*-), Av. /°šma-/ corresponding to Skt. *śma*- in *grīśmā*- m. ‘(mid)summer’ (Mayrhofer EWAia I: 509f.), cf. also NPr. *mərəzišmiia*-, if Mayrhofer’s analysis (1987: 62f.) of this name as *mərəzi*° ‘short’ + ‘summer’ is correct. On the other hand, the compound does not look very old (cf., for instance, *maiδiiōi(.)zarəmaia*-, deity of the first season), so that it may be preferable to analyze the second member as /°šama-/ < **smH*-a- or **samH*-a- (cf. Av. *ham*- ‘summer’).

²³Vyt 60 *nišhāδaiiōiš* is an inferior variant.

²⁴The status of *airime.aphaδō* (Yt 13.73) nom.pl.f. ‘id.’ with secondary -*aṇ*- and exceptional short vowel is not quite clear, cf. Kellens 1974: 305ff.; **armōi-ždō* (N 103) probably does not exist, cf. Kellens o.c.: 230.

²⁵The stem *maiδiiōi-šam*-, posited by Bartholomae (118), must be corrected into *maiδiiōi-šōma*-, since all attested forms are thematic (Duchesne-Guillemin 1936: 154).

6.5. Before we discuss the origin of the *šh/šx^v*-forms, let us recapitulate our results concerning compounds and reduplicated formations in *°h*- and *°x^v*- after RUKI.

– *h* is found when the following syllable contains a *š* (probably, due to dissimilation *šh* > *h* / *š*); when *h*- belongs to the preverb *ham*- or the prefix *ha*- (not always); and in the present *paiti.hiṇcaiti*.

– *šx^v* is the normal reflex of second members in *°x^v*-; *°x^v*- is only found in three verbs (*ni-x^vabdaieiti*, *paiti x^vaṅhaieiti*, *aiβi x^varəṇti*), which seem to be nonce formations, and in compounds with *°x^varənah*-.

– *šh* is most frequently found in the position before *i*, *u*, *ərə* and before *a* followed by *x*, *h*, *r*. For *šhas*-, *šḥam*-, and *šh* before long *ā* see below.

– *š* is primarily attested before long *ā*-, but also in the sequences *°šas*-, / *°šan*-, / *°šap*-, / *°šam*-.

The overlapping is found in compounds with second members in *°has*-, / *°ham*-, and *°hā*-. Let us look at these first.

Words with *°šhas*- are likely to be of secondary origin. The Nirangistān words *biš.hastra*- and *ḡriš.hastra*- are attested in an inferior text, where we see a tendency to introduce the adverbs *biš*, *ḡriš* ‘twice, thrice’ into compounds, cf. *ḡriš.urvarā*- (N 90) ‘consisting of three plants’, formed after compounds like *biš-āmrūta*-, *ḡriš-āmrūta*- ‘pronounced twice, thrice’. As to *pasuš.hasti*- (4x V), it may be influenced by another typical Vidēvdāt word *pasuš.hauruua*- ‘(dog) protecting the cattle’ (11x in V and Yt 11.7). On the other hand, *aiβišasta*-, *nišasti*-, *višastarə* and *hišas* look good, and we can be rather confident that *š* is the original reflex.

Further overlapping is found in the position before /am/, where we have both *°šḥam*- (in *huš.ham.bərət(a)*-, *huš.ham.sāsta*-, cf. also OP *ušhamaranakara*-) and **°šəm*- (*maidiiōi.šəma*-). As we have seen above (§ 6.1.2.), the prefix *ham*- does not normally show RUKI reflexes, but if we compare the situation found in Sanskrit, *°šḥam*- in nominal compounds is not unexpected, which is corroborated by the OP word, and, indirectly, by NPr. *fraš.ham.varəta*-. As to *maidiiōi.šəma*-, it can stand for / *°šma*-/ after all, and besides, it cannot be excluded that the nasalized vowel *ḡ* provided a different environment (see below).

There are only three compounds where we find *šh* before long *ā*. The adverbs *ārmaitiš.hāgəṭ* and *ašiš.hāgəṭ* (Y 58.1, 71.11) ‘accompanying Ārmaiti, Aši’ are difficult because their formation, the original length of the vowel and the phonetical reality of *-gəṭ* remain unclear (for a discussion cf. Kellens 1974: 298ff, Hoffmann – Narten 1989: 71). Still, if *-gəṭ* was phonetically close to [x], we may assume that *šh* was regular in the sequence [šhāx]. As to *paiṛiš.hāuuni*- (Y 1.10, 2.10, 3.12, 4.15, 6.9, 7.12, 17.9, 22.12, Vyt 18) ‘staying around Hāvani (deity of the first part of the day)’, *šh* is likely to be secondary in this word, due to the zero-grade forms **paiṛiš.hu*-.²⁶

²⁶The same explanation may be proposed for the unclear form V 14.7 *paiṛiš.hanāna*- ‘Keltergerät’ if we accept Lommel’s (1935: 145) emendation to **paiṛiš.hauuāna*-.

The distribution between the three reflexes, viz. *š*, *šh/šx^v*, *h*, is presented in the following table:

position	<i>š</i> -forms	<i>šh</i> -forms	<i>h</i> -forms
+ <i>i u r ʁ</i>		<i>šhi-</i> <i>šhu-</i> / <i>šhr-</i> / <i>šx^v</i>	<i>hiš-</i> / <i>hrš-</i>
+ <i>ā</i>	<i>šā-</i>	<i>šhagət</i> [<i>šhāx(t)</i>]	
+ <i>a</i>	<i>šas-</i> <i>šān-</i> <i>šap-</i>	<i>šhax-</i> <i>šhah-</i> <i>šhar-</i> <i>šham-</i>	<i>harš-</i>

As we have seen above, the *h*-forms are most probably due to dissimilation of *šh*, so that they constitute a sub-class of the *šh*-forms. The only issue then is the distribution of *š*- and *šh*-forms. It follows from the table that appearance of the *šh*-forms is triggered by two factors: a following close vowel or *ʁ* and the presence of consonants *x*, *h*, *r* in the root (for *šham-* see below). Since *x*, *h*, *r* are continuants pronounced in the back of the mouth (for the postalveolar or retroflex pronunciation of *r* in Iranian see Hoffmann 1986b: 173 = 1992: 847), it is phonetically plausible that [š] in the position before these consonants has been retracted further back, to a retroflex [ʂ] with a *x* off-glide. The development of RUKI *š* in Slavic, where it eventually became *x*, shows that this process can even happen spontaneously (cf. also Spanish *dije* [dixe] < [diše] < Lat. *dīxī*).

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It may appear puzzling that a following close vowel or *ʁ* also lead to a retracted pronunciation of *š*, but, in fact, this is no more strange than the RUKI rule itself, where exactly the same sounds trigger the retraction. As far as *šham-* is concerned, I can only suggest that a nasalized vowel [ə̃] (for its pronunciation see Hoffmann – Narten 1989: 73ff) was sufficiently close to produce the same effect.²⁷

In Iranian languages, *š* sometimes becomes *xš*. A well-known development is PIE **ǵn-* > **ǵn-* > **šn-* > *xšn-* (e.g., Av. and OP *xšnā-* ‘to know’). Av. *xšma-* ‘you, yours’, which is a variant of *yušma-*, shows that when, for whatever reason, the initial (y)*u-* of *yušma-* was lost (see Kuiper 1978: 19ff.), the initial *š-* merged at some stage with the cluster *xš-*. Note that this happened in Avestan only, as is clear from the contrast between Oss. *s(y)max/sumax*, Yaghnobi *šumox* ‘you’ and Oss. (æ)*xsæs*, Yaghn. *uxš* ‘six’ < **xšyaš*, Oss. (æ)*xsæv*, Yaghn. *x(i)šap* ‘night’ < **xšap-* (Edelman apud Kuiper 1978: 36).

Furthermore, Kellens (1976: 60ff.) has presented strong arguments in favour of the view that the reflex of PIIr. **čt* had not yet merged with *št* after RUKI in Proto-Iranian. While the reflex of the RUKI *št* is always *št* in Avestan, PIIr. **čt* sometimes appears as *xšt*, e.g. *paiti.fraxštar-* ‘interrogator’ < PIIr. **prac-tar-*, *yaxšti-* ‘branch’ < PIIr. **iacti-* (cf. Skt. *yaštī-*), *spaxšti-* ‘vision’ < PIIr. **pac-ti-*, etc. (for the evidence see Kellens o.c.: 61). Since we find the

²⁷ As Professor Kortlandt points out to me, nasal vowels are often close to [ŋ] or [h], as far as their articulation is concerned, because lowering of the velum not only opens the nasal cavity but, at the same time, widens the space above the larynx.

same reflex in Sogdian and Bactrian, we must assume East Iranian dialectal preservation of the difference between **čt* and the RUKI *št*.

If we assume that *š* was pronounced [*ʃʰ*] in some environments, it becomes immediately clear that this pronunciation could have led to analogical reinterpretation of [*ʃʰ*] as *š-h* and [*ʃʰu*] as *š-xʷ* at a compound boundary, e.g. **hušaxi-* > **hušʰaxi-* → *hušhaxi-*. Furthermore, we can better understand how peculiar spellings like *barəziš.hauuaṇt-* /*barzišṽant-*/ or *pasuš.huuā* /*pasušṽa-* have arisen. If the redactors of the Avesta pronounced **barzišṽant-* as [*barzišʰuṽant-*], they could easily reinterpret this word as a compound in the same fashion as they did, for instance, with **baxšahyā* [*baxšohuṽā*] (*u*-umlaut, cf. Narten 1986b: 269f), which appears in the mss. as *baxšō.huuā*.

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APPENDIX. Av. *viš.huškō*

Av. *viš.huškō* is a hapax (V 5.36), occurring in a passage where Ahura Mazdā gives an answer to Zaraθuštra's question: How big is the impact of the death of a deceitful two-legged villain (*mairiīō druue bizaṇgrō*) or a false teacher on the creatures of Spənta Mainyu. Ahura Mazda's answer starts with *yaθa vazayaciṭ viš.huškō tarō yārə mərətō*, then continues with a lengthy enumeration of all kinds of harmful influence a deceitful villain, just as a false teacher, has on the truthful, when he is alive, and finishes with *nōiṭ auuaθa mərətō* 'but not so, when (he is) dead'.

The sentence *yaθa vazayaciṭ viš.huškō tarō yārə mərətō* is translated by Bartholomae – Wolff as "Wie ein vertrockneter, über ein Jahr toter Frosch!" (cf. also Geldner 1881: 207 "So wenig als ein ausgetrockneter frosch, der über ein jahr todt gelegen ist"), but this translation can hardly be correct. First of all, such an emotional reaction is totally out of place in the rather dry legal prose of the Vidēvdāt. What we expect is an illustration of something which is harmful when alive, but (ritually) harmless when dead. Also from the morphological point of view, the traditional analysis is problematic, as *vazayā-* 'a frog', which is always feminine in Avestan, does not correlate with *viš.huškō* and *mərətō*.

The solution to these problems becomes immediately clear if we compare V 8.33 (*kaṭ tā nara yaoždaiiṇ aṇhən ... yā nasāum auua.hištāt hiškunəm tarō yārə mərətanəm* 'Will the men be purified who come in contact with a corpse of those who, being dead longer than a year, are dried up?'). From the answer to this question we learn that a dried up corpse is not ritually impure any more. Accordingly, *yaθa vazayaciṭ viš.huškō tarō yārə mərətō* must be translated 'just as a frog [or] a dried up dead body, (lying) longer than a year'. Note that both *vazaya* and *mərəta-* are daēvic words.

It follows that *viš.huškō* stands for *hišku-* of V 8.33. Of these two adjectives, *hišku-* is more appropriate in this context because in all its occurrences it refers to a quality of a body (cf. V 9.31 *tanuš hiškuui* 'dry body', V 8.34 *nōiṭ⁺ hišku hiškuuāi sračšīiciti* 'a dry [body] does not

stick to a dry [body]'), while *huška-* functions as an attribute of *aēsma-* 'fire-wood', *zəm-* 'earth', and *pəṣu-* 'passage'. This consideration as well as the fact that the *šh* of *viš.huškō* is aberrant (see above, § 6.1.1.) make me conclude that *viš.huškō* is likely to be a corruption of *hišku-*.²⁸ Since the syntax of V 5.36 demands one or two times *vā* 'or', one of the possible restorations is **vā hiškuš vā*. This corruption must be rather old. The mss. do not show any variants, while the Pahlavi translation simply transliterates the word as *wyšhšk* (the interpretation of this compound as '[a frog] whose venom is dried up', Hoshang Jamasp 1907: 245, is of course a folk-etymology).

There is yet another reason to suspect a corruption, viz. the aberrant formation of *viš.huška-*. In his dictionary, Bartholomae explains *viš.huška-* as a compound of *vī* + *huška-*, assuming for *vī* the meaning 'durch und durch' (Bartholomae 1435, cf. Geldner 1881: 207, fn. 2: "*vi + huska* durch und durch, gänzlich ausgetrocknet"). The problem with this analysis is that *vī*, in my opinion, never has this meaning. The only parallel to be found in Bartholomae's dictionary is *vī-xrūmañt-*, translated by Bartholomae as 'über und über blutig' in Y 57.10, Yt 4.8, and 'unblutig' in V 4.30,33. The phrase V 4.30,33 *yō narəm vīxrūmañtəm x^varəm jaiñti* 'who inflicts a *vīxrūmañtəm* injury to a man' occurs in a list of assaults and stands between V 4.26,29 *yō narəm arəduša snaiṭi jaiñti* 'who hits a man with an *arəduš*-injury (an injury without apparent consequences, cf. Bartholomae 194)', on the one hand, and *yō narəm tacaṭ.vohunīm x^varəm jaiñti* (V 4.34,36) 'who inflicts an injury, involving flowing blood, to a man', on the other. It follows that *vīxrūmañt-* *x^vara-* is most probably an injury with bruises, so that *vīxrū-* presumably means 'a bruise' ('Quetschwunde', Dehghan 1982: 63). As was already pointed out by Benveniste 1970: 39, it is unthinkable that a very similar phrase in Y 57.10 *yō aēsməm stərəṭṭata snaiṭiṣa vīxrūmañtəm x^varəm jaiñti* would then mean '(Sraoša,) der dem Aēsma mit niederschmetternder Waffe eine über und über blutige Wunde schlägt' (Bartholomae – Wolff). Benveniste further draws attention to the fact that Sraoša has an 'arme d'une massue hardie' (*darši.dru-*), whereas his opponent Aēsma is armed with a bloody weapon (*xruui.dru-*). I think that we must interpret the Y 57.10 passage in the sense that Sraoša beats his adversary black and blue, the more so as it continues *aṭca hē bāḍa kamərəḍəm jaynuuā paiti x^vaṇhaieiti yaṭa aojā nāidiiāghəm* 'and then, beating him on his head at times, he thrashes him, as a stronger one [thrashes] a weaker one' (cf. Gershevitch 1959: 206 for the meaning of *bāḍa* and Benveniste 1959: 43f. for the meaning of *paiti x^vaṇhaieiti*). The last passage containing *vīxrūmañt-* is Yt 4.8 *nasūm stərəṭṭata snaiṭiṣa vīxrūmañtəm maire nāsaite*, which is rather incomprehensible and is clearly based on Y 57.10.²⁹ At any rate, we cannot conclude from this passage that *vīxrūmañt-* means 'über und über blutig' (Bartholomae) or 'ganz blutig' (Lommel).

²⁸The confusion of *hišku-* and *huška-* is also attested in V 8.34. The mss. show the following readings: K1 *x^vškō*; P10.2 *huškō*; Pt2. P2 (sec.m.). B2. O2 *hušku*; Jp1. Mf2. L1.2. Br1. Dh1 *hišku*, L3. K10 *hišku* and *hiškō*, M2 *hišku* and *hušku*. Geldner edited *huškō*, which is corrected by Bartholomae to **hišku*.

²⁹Kellens (1984: 369, note 14) even proposes to emend *maire nāsaite* to **x^varəm jaiñti(ca)*.

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