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A New Rule in Vedic Metrics

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In this paper I propose a new rule of Vedic meter. The glides **v* and **y* are regularly lost before the corresponding high vowels *ũ* and *ĩ* in Vedic. I argue that the word-initial glides **v* and **y* before the short vowels *ũ* and *ĩ* still “make position” and that they should be restored for metrical purposes. This means that word-final syllables of the shape *-ŨC* should be scanned long if the following syllable begins with a *u-* or *i-* that goes back to **vu-* or **yi-*. This new rule has consequences for the general metrical shape of the R̥gveda, as cadences previously scanned as irregular will be repaired to their canonical shape. The rule can also be employed as etymologically decisive for words that can potentially go back to forms with or without an initial glide.

§1 INTRODUCTION

In Vedic, consonantal **v* (or **u*) is regularly lost before the high back vowel **ũ* (AiG I: 261–62). There were two main sources of the sequence **vũ* in pre-Vedic: the Proto-Indo-European sequence **(C)u̯RH*, which yields **(C)vũr* and subsequently *(C)ũr* (e.g., *urũ-* ‘wide, broad’ < **vurũ-* < PIE **u̯rHũ-*),¹ and the reduplication syllable of roots with the structure *vaC* (**vuvaC-* > *uvaC-*, e.g., **vuvāca* > *uvāca*).² The loss of glides also occurs in external sandhi. When word-final *-o* (**-av*) is followed by word-initial *ũ-*, **v* is lost, resulting in *-a ũ-*, e.g., RV 1.2.2a *vāya ukthēbhir* for Pada-Pāṭha *vāyo ukthēbhiḥ*. If, on the other hand, any other vowel (except for short *a-*) follows word-final *-o* (**-av*), **v* is preserved and the result is *-av V-*, e.g., RV 7.92.3b *vāyav iṣṭāye* for Padapāṭha *vāyo iṣṭāye* (cf. AiG I: 261–62).

The few exceptions to the glide loss can easily be explained by analogy. AiG I: 262 lists three such examples: the compound *hotṛ-vũrya-* ‘election of priest’, the 3rd sg. medial form of the optative *vurita*, and 3rd pl. forms with the *-ur* ending, such as *babhũvũr*. In the first two cases *v* was restored on the basis of other forms in the paradigm of the verb *√varⁱ*

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1. The development of PIE **u̯rHũ-* to Ved. *urũ-* includes several steps: first, PIE **u̯rH* regularly develops to Ved. *vur* and the laryngeal gets lost, yielding **vur-ũ-*. Thereafter, **v* is lost before *u*, yielding the attested *urũ-*. This is exactly parallel to the development PIE **pl̥h₂-ũ-* > Ved *purũ-*. The only alternative explanation would be to assume that the laryngeal was lost early in **u̯rH-ũ-* and that the **u̯rH-V* sequence resyllabified to **ur-*. The Avestan cognate *vouru-* (< **u̯rHũ-*) with initial *v-*, however, clearly shows that in Proto-Indo-Iranian and in Avestan no resyllabification occurred. It would be highly unparsimonious to assume that such resyllabification happened on the way from Proto-Indo-Iranian to Vedic, especially because there is no motivation or independent evidence for such resyllabification. For a recent treatment of *ĩr* and *ũr* sequences, see also Lubotsky 1997.

2. The original reduplication vowel was *a*, which is confirmed by RV 1.67.8b *vavāca* (attested once in the R̥gveda). Reduplication in Vedic, however, undergoes innovation: the reduplication vowel of verbs with *u* or *i* in the zero-grade and of verbs with the structure *vaC-/yaC-* becomes *u* or *i* respectively (Kümmel 2000: 21). Parallel to *suṣvap-*, *suṣup-*, the strong and weak forms of the perfect of *√vac* were **vuvac-* / **vu-uc-* (yielding *uvac-* and *ũc-* after the loss of **v* and contraction).

‘to choose’. In the latter case **v* was a hiatus-preventing glide that was inserted in order to avoid the sequence ***uu* or was analogically transferred from forms with other vowel-initial endings (e.g., *babhūvāthur*). The same is true for the -*v-u*- outcome in the weak form of the perfect participle in -*uṣ*- to roots in -*u* /-*ū*-, e.g., *suṣuv-ūṣas*.

The glide loss before homorganic vowels targeted not only **v* but also **y* (or **j*). The examples of this loss are, however, limited to word-internal position: pre-Vedic **śray-iṣṭha*- (< PIE **kreiH-isto*-) yields **śra-iṣṭha*- after the loss of **y* before *i* and finally *śreṣṭha*-³ after desyllabification of *i*.⁴

There is one example where **y* may have been lost before *i* word-initially in the reduplication syllable: the middle participle *iyānā*-. However, this participle could go back either to the root present **iyānā*- (< **ih₂-mōh₁nó*-, as in Ved. *yāmi*) or to the reduplicated present **yiyanā*- (< **ji-ih₂-mōh₁nó*-, as in Grk. *δίζημαι, διζήμενος*; cf. García-Ramón 1999: 88; LIV²: 310–11). There is no formal way to decide between the two options.

The purpose of this paper is to show that the lost glides **v* and **y* were still present before the corresponding high short vowels—or at least accessible to the poets—at the time when books 2–8 of the Rīgveda were composed, and that they still “make position,” in the sense that the glides must be restored for metrical purposes and that word-final syllables of the shape -*VC* must be scanned long if they were followed by **vu*- or **yi*- (*-*VC*. *vu*-; *-*VC*. *yi*-). This new rule repairs at least twenty-six irregular cadences to their canonical structure (thirty-two by a less conservative count). I also show that this new scansion that restores the lost **v* and **y* repairs irregular openings as well, although their metrical structure is less regular and therefore less relevant. Finally, I argue that the rule can be employed decisively for cases with unclear etymology, such as the participle *iyānā*-. To my knowledge, no such rule has previously been proposed in the existing literature on Vedic metrics.⁵

§2 METRICS

The cadences of the triṣṭubh (eleven-syllable verse) and jagatī (twelve-syllable verse) are metrically the most regular features in the Rīgveda. According to van Nooten and Holland (1994: xvii), 15,855 of 16,450 (or 96.4%) triṣṭubh cadences have the canonical structure – ∘ – ×. Likewise, 4,863 of 5,011 (or 97.0%) jagatī cadences have the canonical structure – ∘ – ∘ – ×.⁶ This leaves room for only 3.6% or 3.0%, respectively, of cadences that have other structures and are therefore “irregular” or non-canonical.

Openings in the Rīgveda are much less regular than cadences. Nevertheless, there exist some tendencies for metrical regularity even in openings. The structures × ∘ – ∘ – and × – – – constitute 72.6% of all openings, with structures such as × – ∘ and × ∘ ∘ ∘ occurring

3. After the loss of **i*, the *i* in the disyllabic sequence **a-i* desyllabified, yielding *-*aḷ*- and consequently -*e*- (cf. Lubotsky 1995: 219). Such sequences, however, scan disyllabically in the Rīgveda (cf. van Nooten and Holland 1994: iv), which again indicates that **y* was present when the hymns were composed.

4. Exceptions to this rule can here too be explained by analogy. As Lubotsky (1995: 219) points out, “all -*ayi*- sequences actually attested in Vedic must be secondary.” The one prominent counterexample, *rayí*-, is either explained as analogical or non-contracted because of the accented *i* (Lubotsky 1995: 221–23). For this explanation and a thorough treatment of the loss of **y* before *i* word-internally, see Lubotsky 1995 and Kobayashi 2014.

5. The only observation with respect to **u* that I have found in the literature is in Kümmel’s treatment of the gen. pl. ending (Kümmel 2010: 4). There he notes that *urānāḥ* in RV 7.73.3a *āhema yajñām pathāām urānāḥ* goes back to **urānā* and that in pre-Vedic the preceding syllable -*ām* would be long not just because of the long vowel but also by position. However, the strong tendency to avoid the extra-long sequences -*VC* CV- in Vedic metrics renders the example inappropriate for establishing length by position. If anything, we would expect a word after the sequence -*VC* to be vowel-initial. No further examples are discussed there.

6. Cadences of the anuṣṭubh and gāyatrī (both eight-syllabic verses) are also regular, but since all relevant examples appear in cadences of triṣṭubh and jagatī, I omit the former two cadence types from the discussion.

at frequencies as low as 2.1% and 0.4%. The most canonical structure for openings is thus $\times - \times -$ (Arnold 1905: 193–94). More precisely, the second syllable of the triṣṭubh openings is long in 13,823, or 83.9%, of all cases (cf. van Nooten and Holland 1994: xvii–xviii).

The evidence for the proposed rule will only be taken from cadences, since openings are not regular enough to be conclusive. Moreover, lengthening of any syllable in the opening of a verse will automatically yield a better structure. However, if restoration of glides proves to be necessary in cadences, there is no reason not to restore them in openings as well.

§3 THE DATA

Let us now take a look at words that feature an initial *u-* that goes back to **vũ-* and appears after the sequence *-ŲC* in cadences of the R̥gveda. The most frequently attested such word is the verb *uruṣy-* ‘to widen’, formed from the adjective *urũ-* ‘wide, broad’. The adjective goes back to PIE **urH-ũ-* (EWAia, I, 227), which yields pre-Vedic **vurũ-*. The verb *uruṣy-* appears eight times in cadences after the sequence *-ŲC*. In all eight of these instances, the restoration of **v* repairs the irregular cadence. In (1), we see that the traditional scansion⁷ gives the metrical structure $\sim \sim - \times$, which occurs in only 250 (1.5%) triṣṭubh cadences in the R̥gveda. Restoring the **v*, we get the canonical structure $- \sim - \times$, which accounts for 96.3% of the triṣṭubh cadences.

- | | | | |
|-----|------------|--------------------------------------|----------------------|
| (1) | RV 1.58.8c | <i>ágne gṛṇántam áṃhasa uruṣya</i> | $\sim \sim - \times$ |
| | | <i>ágne gṛṇántam áṃhaso *vuruṣya</i> | $- \sim - \times^8$ |

On the subject of examples with final *-aḥ*, Van Nooten and Holland (1994: 582) remark that “[t]he uncommon cadence . . . can be normalized by reading *áṃhaso* (with long final vowel) for *S. áṃhasa* (Pp. *áṃhasaḥ*) before a following vowel.” However, we see that there is no need to invoke a special reading of *-aḥ*,⁹ because it is the lost **v* that has caused the preceding syllable to be heavy (the sandhi outcome was in fact most probably **-o v-* or *-aṣ v-* for **-as v-*).¹⁰ Moreover, as seen in (2) and subsequent examples, the reading with **v* should be employed not only after *-aḥ*, but also after any other sequence *-ŲC*, even *-e < *-ai*. The other seven examples in which the reading of *uruṣy-* with **v* repairs irregular cadences are:

- | | | | |
|-----|-------------|--|----------------------|
| (2) | RV 1.152.6d | <i>āsáivāsann áditim uruṣyet</i> | $\sim \sim - \times$ |
| | | <i>āsáivāsann áditim *vuruṣyet</i> | $- \sim - \times$ |
| (3) | RV 1.158.4a | <i>úpastutir aucathiyám uruṣyen</i> | $\sim \sim - \times$ |
| | | <i>úpastutir aucathiyám *vuruṣyen</i> | $- \sim - \times$ |
| (4) | RV 4.2.6d | <i>vísvasmāt śim aghāyatá uruṣya</i> | $\sim \sim - \times$ |
| | | <i>vísvasmāt śim aghāyató *vuruṣya</i> | $- \sim - \times$ |
| (5) | RV 4.2.11d | <i>dítim ca ráśva áditim uruṣya</i> | $\sim \sim - \times$ |
| | | <i>dítim ca ráśva áditim *vuruṣya</i> | $- \sim - \times$ |

7. By “traditional scansion” I mean the analyses of Vedic meter in Oldenberg 1888, Arnold 1905, and van Nooten and Holland 1994.

8. The first line in all examples is from the metrically restored text provided in van Nooten and Holland 1994, with the corresponding metrical structure. The second line is my proposed restoration with the lost **v*.

9. For a thorough treatment of *-aḥ* see Malzahn 2001.

10. There are three possible scenarios for how the external sandhi sequence **-o vu-* (< **-as vu-*) yielded the attested *-a u-* (instead of ***o u-*) after the loss of **v-*. First, we could assume that word-final *-o* was analogically repaired to *-a*, which was the regular sandhi outcome of *-as* before all vowels including *u-* (excluding short *ā-*). Secondly, we could assume that **-as vu-* first yielded **-aṣ vu-* and that **-as V-* yielded **-aṣ V-*. Initial **v-* would then have been lost and the two sequences merged to **-aṣ V-*, further yielding *-a V-*. Thirdly, we could assume that **-o u-* (from **-as vu-*) was resolved to **-av u-* and that **v* was lost again, yielding the attested *-a u-*.

- | | | | |
|-----|------------|--|-----------|
| (6) | RV 4.55.5d | <i>mitró mitríyād utá na uruṣyet</i> | ~ ~ - x |
| | | <i>mitró mitríyād utá no *vuruṣyet</i> | - ~ - x |
| (7) | RV 7.1.15b | <i>sameddhāram āmhasa uruṣyāt</i> | ~ ~ - x |
| | | <i>sameddhāram āmhasa *vuruṣyāt</i> | - ~ - x |
| (8) | RV 8.48.5a | <i>imé mā pītā yaśása uruṣyávo</i> | ~ ~ - ~ x |
| | | <i>imé mā pītā yaśása *vuruṣyávo</i> | - ~ - ~ x |

One example of the jagatī verse is provided in (8). Here, the traditional reading gives the cadence structure ~~-~x, which accounts for 83 (or 1.7%) of all jagatī cadences. The restoration of *v, on the other hand, yields the reading -~-~x, which accounts for 4,863 (or 97.0%) of the jagatī cadences.¹¹

There are furthermore two examples of the adjective *urūcī-* ‘extending far’ from *urú-* (< **vurú-* < PIE **ur̥H-ú-*) and one example of a compound *urukramá-* ‘far-stepping’ with the first member *urú-*. In all three instances the restoration of *v repairs the irregular cadences.

- | | | | |
|------|------------|--|-----------|
| (9) | RV 3.57.5b | <i>ágne devēṣu ucyáta urūcī</i> | ~ ~ - x |
| | | <i>ágne devēṣu ucyáte *vurūcī</i> | - ~ - x |
| (10) | RV 7.45.3c | <i>viśráyamāṇo amátim urūcīm</i> | ~ ~ - x |
| | | <i>viśráyamāṇo amátim *vurūcīm</i> | - ~ - x |
| (11) | RV 5.87.4a | <i>sá cakrame maható nír urukramāḥ</i> | ~ ~ - ~ x |
| | | <i>sá cakrame maható nír *vurukramāḥ</i> | - ~ - ~ x |

The nouns *uloká-* ‘free space’ and *ulokakṛt-* ‘creating free space’ also have *urú-* as their first member. These two words go back to a compound **uru-loká-* or **ulu-loká-*, in which the second syllable was haplogically lost (for an explanation, see Aufrecht 1888: 152; Leumann 1968: 57–58). They are attested eight times in cadences of the Rigveda. In all examples, the restoration of *v repairs irregular cadences to their canonical structure.

- | | | | |
|------|--------------|---|-----------|
| (12) | RV 1.93.6d | <i>urúm yajñāya cakrathur ulokám</i> | ~ ~ - x |
| | = RV 7.99.4a | <i>urúm yajñāya cakrathur *vulokám</i> | - ~ - x |
| (13) | RV 2.30.6d | <i>asmín bhayásthe kṛṇutam ulokám</i> | ~ ~ - x |
| | | <i>asmín bhayásthe kṛṇutam *vulokám</i> | - ~ - x |
| (14) | RV 6.23.3c | <i>kártā vīrāya súṣvaye ulokám</i> | ~ ~ - x |
| | | <i>kártā vīrāya súṣvaye *vulokám</i> | - ~ - x |
| (15) | RV 6.23.7d | <i>urúm kṛdhi tuvāyatá ulokám</i> | ~ ~ - x |
| | | <i>urúm kṛdhi tuvāyatá *vulokám</i> | - ~ - x |
| (16) | RV 6.73.2a | <i>jánāya cid yá ívata ulokám</i> | ~ ~ - x |
| | | <i>jánāya cid yá ívate *vulokám</i> | - ~ - x |
| (17) | RV 7.84.2d | <i>urúm na índraḥ kṛṇavad ulokám</i> | ~ ~ - x |
| | | <i>urúm na índraḥ kṛṇavad *vulokám</i> | - ~ - x |
| (18) | RV 9.86.21b | <i>ayám síndhubhyo abhavad ulokakṛt</i> | ~ ~ - ~ x |
| | | <i>ayám síndhubhyo abhavad *vulokakṛt</i> | - ~ - ~ x |

The restored *v repairs irregular cadences not only in derivatives of *urú-*, but also in other lexical items. There are four examples of the aorist middle participle *urāṇá-* from the verb √*var* ‘to choose’ (PIE **uelh*₁, cf. EWAia, II: 511), which goes back to **vurāṇá-* < **ul̥h₁m̥h₁no-*. In all four examples, the reading with *v repairs the irregular cadence.¹²

11. The example in (7) is of the virāṭsthānā type. Such verses have ten syllables and are fairly rare. According to Arnold (1905: 211), they can be restored to the normal triṣṭubh verse by inserting a rest after the fourth syllable. Regardless of how we treat the virāṭsthānā verse, the restoration of *v repairs the irregular cadence.

12. I remove RV 7.73.3a *āhema yajñám pathāām urāṇāḥ* from my count because the second vowel in the disyllabic gen. pl. -ām can be either short or long.

(19)	RV 3.19.2c	<i>pradakṣiṇíd devátātim urāṇáh</i>	~ ~ - x
	= RV 4.6.3b	<i>pradakṣiṇíd devátātim *vurāṇáh</i>	- ~ - x
(20)	RV 4.6.4d	<i>triviṣṭí eti pradíva urāṇáh</i>	~ ~ - x
		<i>triviṣṭí eti pradívo *vurāṇáh</i>	- ~ - x
(21)	RV 4.7.8c	<i>dūtá īyase pradíva urāṇó</i>	~ ~ - x
		<i>dūtá īyase pradívo *vurāṇó</i>	- ~ - x

Moreover, the first part of the compound *urā-máthi-* ‘killing sheep’ goes back to **vuran-* < PIE *urh₂en-* ‘lamb’ (cf. EWAia, I: 225–26). In its only cadence attestation in the Rigveda, the restoration of **v* repairs the irregular cadence:

(22)	RV 8.66.8a	<i>vṛkaś cid asya vāraṇá urāmáthir</i>	~ ~ - ~ x
		<i>vṛkaś cid asya vāraṇó *vurāmáthir</i>	- ~ - ~ x

There are also two examples, both from the root $\sqrt{\text{vac}}$ ‘to speak’, where the restored **v* is part of the reduplication syllable. The perfect form *uvāca* goes back to **vuvāca* and the lost **v* closes the preceding syllable with the structure - $\check{V}C$. The line in RV 7.98.3b (24) is exactly identical to the line AVŚ 20.87.3b, and in both cases the restoration of **v* repairs irregular cadences.

(23)	RV 2.30.2b	<i>prá tám jánitri vidúṣa uvāca</i>	~ ~ - x
		<i>prá tám jánitri vidúṣe *vuvāca</i>	- ~ - x
(24)	RV 7.98.3b	<i>prá te mātá mahimānam uvāca</i>	~ ~ - x
	= AVŚ 20.87.3b	<i>prá te mātá mahimānam *vuvāca</i>	- ~ - x

There is only one example in the Rigveda where the restoration of **v* does not repair an already irregular cadence. In (25), we have the plain adjective *urú-* ‘wide, broad’ (< **vurú-* < PIE **urHú-*).

(25)	RV 6.50.3a	<i>utá dyāvāprthivī kṣatrám urú¹³</i>	- ~ ~ x
		<i>utá dyāvāprthivī kṣatrám *vurú</i>	- - ~ x

The hymn RV 6.50 itself has eight irregular cadences (van Nooten and Holland 1994: 624–25) and the cadence in RV 6.50.3a is irregular with or without restoration of **v*. For an explanation of this case, see §4 below. In any event, this example is the only one in the Rigveda where the restoration of **v* before the short *ū* does not repair the irregular cadence to its canonical shape.

From the discussion above, it is clear that **v* was still present before *ū*, or at least accessible to the poets in this position, at the time when the hymns were being composed; therefore, the glide should be reconstructed for the purpose of metrical scansion in the Rigveda. It would be reasonable to expect the same situation for **v* before the long vowel *ū*. This is, however, not the case: **v* before the corresponding long high vowel should not be restored for metrical purposes. In none of the cases of **vū-* attested after - $\check{V}C$ does the restoration of **v* repair an irregular scansion. In fact, the reading with **v* converts regular cadences into irregular ones.

In (28), for example, the noun *ūrmí-* ‘wave’ goes back to **vūrmí-* and PIE **u₂lHmi-*. This form is attested twenty-seven times in cadences, and in all the examples the reading with **v* yields an irregular cadence, whereas the traditional reading yields the canonical structure.

(28)	RV 2.16.5a	<i>vṛṣṇaḥ kóṣaḥ pavate mádhva ūrmír</i>	- ~ - x
		<i>vṛṣṇaḥ kóṣaḥ pavate mádhvo *vūrmír</i>	- - - x

13. Gippert (1997: 69) repairs this line by assuming that the laryngeal causes the first syllable of *urú* to be long by position: **uR'V* from **urHu-*. Note, however, that the first syllable of this adjective is nowhere else to be read as long.

Other examples in which the restoration of $*v$ before a long $\bar{u}$ converts regular cadences into irregular ones are (a) feminine forms of the adjective $urvī-$ (shortened either by analogy or by sound law¹⁴ from $*vūrvi-$ < PIE $*urHuih_2-$), attested eighteen times, (b) the adjective $ūrdhvā-$ ‘raised’ (< $*vūrdhvā-$ < PIE $*urHd^huo-$; EWAia, I: 244–45, Barnes 2014: 7, Chant-raine 1968–1980: 818–19), attested three times, and (c) the noun $ūrṇā-$ ‘wool’ (< $*vūrṇā-$ < PIE $*ulh_1neh_2-$; EWAia, I: 243), attested once.¹⁵

There are generally two possible explanations for the metrical absence of $*v$ before the long vowel $\bar{u}$. First, we could assume that the loss of $*v$ before both long and short $\bar{u}$ was an ongoing sound change at the time when the hymns were composed and that there was variation between the forms with and without initial $*v$. The poets could thus optionally drop the initial glide in order to prevent two long syllables (– –), which would have occurred if a glide was preceded by $-\check{V}C$ and followed by $\bar{u}$. Note that two consecutive long syllables are not suitable for any kind of cadence in the Rigveda.

More probably, however, the loss of $*v$ before the long high vowel $\bar{u}$ preceded its loss before the short high vowel $\bar{u}$. The long vowel $\bar{u}$ was most likely higher than its short counterpart, as there exists a tendency across languages for long high vowels to be higher than their short counterparts (Lehiste 1970: 30–32). By virtue of being higher, the long $\bar{u}$ was most likely also more rounded (higher vowels are usually more rounded; see Ladefoged and Maddieson 1996: 293). Precisely this higher degree of roundedness could easily have led to an early dissimilation and loss of $*u$ or, even more plausibly, an early complete assimilation of $*u$ to the following vowel $\bar{u}$.¹⁶

§4 STATISTICAL TESTS

We know that superheavy syllables are strongly disfavored in cadences of the Rigveda (Kobayashi 2004: 30–31). This fact allows us to apply statistical tests to the data to show that the distribution of words with the initial glides $*v$ or $*y$ is not simply due to chance or to the fact that irregular short syllables before minor caesura are common. That is, we can test whether the words above behave as consonant-initial or vowel-initial words.

Consonant-initial words (CV-) appear after the minor caesura (ninth syllable) 2,535 times in books 2–8 when the preceding word contains a light final syllable of the form $-\check{V}C$, and 151 times when the preceding syllable is heavy ($-\bar{V}C$ or $-VCC$). Vowel-initial words (V-), on the other hand, appear 234 times after $-\check{V}C$ and 527 times after $-\bar{V}C$ or $-VCC$ in books 2–8.¹⁷ The distribution is represented in Table 1:

Table 1		
	$-\check{V}C$	$-\bar{V}C$
CV-	2,535	151
V-	234	527

14. For discussion, see Lubotsky 1997.

15. There are, further, three attestations of the noun $ūrvā-$ ‘container’ and one attestation of the imperative form $ūrṇuhi$. Both are probably formed from the root $\sqrt{var}$ ‘to enclose’, but the etymology here is unclear. Note that $\sqrt{var}$ is an anīṭ root, which means that the noun $ūrvā-$ or the verb $ūrṇuhi$ most likely did not have an initial glide at all. The source for the length of the sequence $\bar{u}r$ is obscure and needs further investigation. Because of the uncertainties I exclude the two lexical items from the discussion (for etymology, see EWAia, I: 245; II: 512).

16. Note also that $*v$ was followed by another v in two of four words ($*vūrvi-$, $*vūrdhvā-$) and by another labial m in additional one word ($*vūrmī-$). The early loss could thus be reinforced by dissimilation of $*v$ away from another glide in the following syllable.

17. Thanks to Kevin Ryan for providing me with this count and generally for his help with the statistics.

We can compare this distribution to the distribution of the words with initial **vu-* to test whether they behave like consonant- or vowel-initial words. Table 2 below presents all words beginning with *u-* that goes back to **vu-* and that appears after the ninth syllable of trimeter verse in books 2–8 (the first column). The second column shows the number of occurrences of such words after the sequence $-\check{V}C$; the third column shows the number of occurrences after the sequence $-\check{V}C$.

Table 2

	$-\check{V}C$	$-\check{V}C$
<i>uruṣy-</i> ¹⁸	5	1
<i>urāṇá-</i> ¹⁹	4	1
<i>urūcī-</i>	2	0
<i>urukramá-</i>	1	0
<i>urāmáthi-</i>	1	0
<i>uvāca</i>	2	1
<i>uloká-</i> ²⁰	6	3

The number of occurrences of particular words in the position after $-\check{V}C/-\check{V}C$ (Table 2) is compared to the number of occurrences of all words in these positions (Table 1) and the Fisher exact test is used to test for statistical significance. The test shows that the distribution of *uruṣy-* and *urāṇá-* differs significantly from the overall distribution of vowel-initial words but does not differ significantly from the distribution of consonant-initial words. *urūcī-*, *urukramá-*, *urāmáthi-*, and *uvāca* are each individually too rare to permit statistical conclusions to be drawn, but taken together, their distributions differ significantly from V- onsets, but not from CV- onsets. We can therefore reconstruct with certainty **vuruṣy-*, **vurāṇá-*, **vurūcī-*, **vurukramá-*, **vurāmáthi-*, and **vuvāca* as consonant-initial words.²¹

For the distribution of *uloká-*, we get slightly different results: the post-minor-caesura distribution of this word is significantly different from that of V-initial words, but also significantly different from that of CV-initial words. This points to a variation between a consonant-initial and vowel-initial form of this word. It would appear, then, that in the time of the composition of the family books, both variants **vuloká-* and **uloká-* were present in the language.²² The explanation for this variation is quite straightforward. We know that Vedic *o* goes back to pre-Vedic **au* (cf. AiG I: 35–36) and that at the time of composition it was probably still a diphthong. Because of the two subsequent glides **u* and two subsequent rounded back vowels **u* in **vurulauká-*, the initial **v* was probably undergoing an early dissimilation (even before the short *u*), but the process was not yet complete. Alternatively, we could assume that variants without initial **v* were analogically influenced by the plain adjective *urú-* (see immediately below).

18. There is another attestation of *uruṣy-* after $-\check{V}C$ in the eighth book (RV 8.101.4c). However, hymn 8.101 is understood to be a later addition, since it violates the ordering (Oldenberg 1888: 228); accordingly, I have removed it from the count.

19. Note that one of the four verses attested after $-\check{V}C$ is a repetition, but from two different books.

20. Again, there is another attestation of *uloká-* after $-\check{V}C$ in 7.33, but because of the lateness of the hymn (Oldenberg 1888: 200) I took it out of the count.

21. Taken together, they are also significantly different from V-, but not significantly different from CV-.

22. Note that all examples where *uloká-* is attested after $-\check{V}C$ occur in the seventh book. This distribution could indicate the starting point of variation.

There is only one word with etymological **v* in Vedic that behaves as if it were vowel-initial in the R̥gveda: the plain adjective *urú-*. The following table represents the distribution of *urú-* in cadences of dimeter verse: the second column shows number of occurrences after -*ŷC*; the third column number of occurrences after -*VC*. The distribution of *urú-* is significantly different from that of CV-, but not significantly different from that of V-.

Table 3

	- <i>ŷC</i>	- <i>VC</i>
<i>urú-</i>	0	3(8)

The explanation here follows from the fact that **v* was lost before the long *ū* earlier than before the short *u*. This caused the early loss of **v* in the feminine forms of the adjective *urvī-* (< **vūrī-* with long **ū* which later shortens either analogically or by sound change; cf. Lubotsky 1997). The *v*-less forms were then analogically transferred to the masculine *urú-* (< **vurú-*). Thus, instead of **vurú-* vs. *urvī-* the opposition became *urú-* vs. *urvī-*. Note that this analogical transfer did not happen in the non-adjectival forms, where the model for analogy was lacking (e.g., **vuruṣy-*). This also explains RV 6.50.3a *utá dyāvāpṛthivī kṣatrám urú* (discussed above under 25), the only case in the R̥gveda where the restoration of **v* does not repair the irregular cadence: the cadence includes **urú-*, which was (due to analogy) a vowel-initial word.²³

We have thus established that **v* should be restored for metrical purposes in cadences. There is no reason not to assume the same rule in openings as well. In fact, by reconstructing initial **v*, a more regular opening is obtained. Consider the example in (29).

- (29) RV 7.35.3b *śám na urūcí bhavatu svadhābhiḥ* × ~ ~ -
 *śám no *vurūcí bhavatu svadhābhiḥ* × - ~ -

As already mentioned, the second syllable of the triṣṭubh openings is long in 14,190, or 86.2%, of all cases (van Nooten and Holland 1994: xvii). The reading with **v* in (29) converts the short second syllable into a long one and yields a much more common opening structure. Examples from openings, however, cannot be decisive, because openings are not metrically regular enough to produce conclusive evidence and because any lengthening will automatically yield a better structure. However, now that we have independently established the rule for cadences, we can reasonably reconstruct the lost glides in openings as well.

The statistical tests presented so far have been based on books 2–8 of the R̥gveda.²⁴ We saw that **v* at this point was still present in the language and that it should be restored for metrical purposes. However, if we apply these tests to the same words in books 1, 9, and 10, we see that the words with etymological **vū-* become significantly different from those beginning in CV-, but not significantly different from those beginning in V-. This means that on the way to the composition period for the later books, **v* was lost and no longer affected the meter. For example, reconstruction of initial **v* in the following cadence from book 10 would yield a superheavy syllable, a type that was strongly avoided by the poets.

- (30) RV 10.40.8b *yuvám vidhántaṃ vidhávām uruṣyathaḥ* - ~ - ~ ×
 *yuvám vidhántaṃ vidhávām *vuruṣyathaḥ* - ~ - ~ ×

23. As already mentioned, RV 6.50 is a highly irregular hymn, but the restoration of **v* in *urú-* would make the cadence even more irregular by causing the ninth syllable to be long.

24. The distinction between books 2–8 as “old” and books 1, 9, and 10 as “young” is partially superficial, but accurate enough for the purpose of statistical tests.

§5 DIAGNOSTICS

The rule proposed above can also be diagnostic for cases with unclear etymology. As already mentioned, the middle participle *iyāná-* can in principle go back to either **iyāná-* (root present) or to **iyiāná-* (reduplicated present). The following table shows the distribution of *iyāná-* before $-\check{V}C$ (second column) and $-\check{V}C$ (third column) in the eighth syllable. If we look at the distribution of the word in books 2–8, we see that the distribution of *iyāná-* is significantly different from that of vowel-initial words and not significantly different from that of consonant-initial words.²⁵

Table 4

	$-\check{V}C$	$-\check{V}C$
<i>iyāná-</i> ²⁶	5	2

This suggests that *iyāná-* was a consonant-initial word and that it must therefore go back to the reduplicated present **iyiāná-*. The restoration of **y* in *iyāná-* additionally repairs the following five cadences to their canonical structure:

(31) RV 2.20.4c	<i>sá vásvaḥ kāmam pīparad iyānó</i>	~ ~ - x
	<i>sá vásvaḥ kāmam pīparad *iyiānó</i>	- ~ - x
(32) RV 7.17.7b	<i>mahó no rátnā ví dadha iyānáḥ</i>	~ ~ - x
	<i>mahó no rátnā ví dadho *iyiānáḥ</i>	- ~ - x
(33) RV 7.25.5b	<i>índre sáho devájūtam iyānáḥ</i>	~ ~ - x
	<i>índre sáho devájūtam *iyiānáḥ</i>	- ~ - x
(34) RV 7.38.6b	<i>rátnaṃ devásya savitúr iyānáḥ</i>	~ ~ - x
= RV 7.52.3b	<i>rátnaṃ devásya savitúr *iyiānáḥ</i>	- ~ - x

§6 CONCLUSION

In this paper, I propose a new rule of Vedic meter: I contend that the lost glides **v* and **y* should be restored before the short vowels *ũ* and *ĩ* for metrical purposes. I argue that the glides were still present at the time when books 2–8 were composed and that word-final syllables of the shape $-\check{V}C$ should be scanned as long when they are followed by a *u-* or *i-* that goes back to **vu-* and **yi-*.

I also argue that **v* was lost earlier before the long vowel *ū* than it was before the short vowel *ũ* and that it therefore does not affect the meter in these cases. This early loss was perhaps due to the long vowel being more rounded than the short vowel and therefore triggering early dissimilation. The paper also sheds some light on the behavior of *urú-* and *uloká-*. *urú-* is shown to have been analogically remodeled as a vowel-initial word on the basis of the feminine forms; *uloká-* had variant forms with and without the initial glide due to early dissimilation from the following **u* and two rounded vowels **u*.

This new rule repairs twenty-six irregular cadences in books 2–8 to their canonical shape; it repairs thirty-two irregular cadences if we count all ten books together. The twenty-six repaired examples represent 11.1% of all cases in books 2–8 where $-\check{V}C$ is followed by *V-* in

25. The p-value here is marginally non-significant (0.0558). Note also that I excluded RV 7.29.1d from the count, although *maghāvan-* most likely ended in a single consonant (from the *van-* stem rather than the *vant-* stem; note, however, that some forms show transition from the former to the latter inflection):

(i) RV 7.29.1d *dádo maghāni maghavann iyānáḥ* - ~ - x

26. Note that one of the five verses attested after $-\check{V}C$ is a repetition.

the ninth syllable. Moreover, restoration of **v* before **ũ* repairs 54% of all cases where -*VC* is followed by *u-* in the ninth syllable.

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