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Mind if I Join You? Some Aspects of Vowel-Vowel Sandhi in the Rigveda

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This paper explores the prosody of the Rigvedic clause against the backdrop of two phenomena: (1) the treatment of vowel-vowel junctures at the word boundary (in particular whether such sequences show hiatus or contraction) and (2) the caesura in trimeter (11- and 12-syllable) lines. The behavior, with respect to these phenomena, of a variety of functional elements in the language of the Rigveda is investigated, leading to the conclusion that (1) and (2) provide critical evidence for the natural language prosody of that language. A sharp contrast is drawn with approaches that assume that the relevant processes reflect “poetic license” or arise *metri causa*.

1 Introduction: the problem

It is well known that the “Classical Sanskrit” outcomes of external vowel-vowel sandhi are generally what we find in the transmitted text of the Rigveda. However, when these outcomes are associated with a reduction in syllable count the meter often indicates, to the extent it can be trusted, that these were not the invariable outcomes at the time of composition. Wackernagel (1896:315) summarizes the Vedic facts thusly (references omitted):

Im ursprünglichen Text der Samhitās, wie er sich aus dem Metrum ergibt, herrscht ebenfalls die Kontraktion vor ... Allerdings unterbleibt die Kontraktion häufig ... aber nur unter bestimmten Bedingungen; ...

In the original text of the Samhitas, as the meter reveals, contraction also dominates ... Of course contraction fails to occur frequently ... however only under certain conditions: ...

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The vowel-vowel external sandhi outcomes of relevance for us today are given in the table below. Not included in this study are the *abhinihita*-sandhi cases of final *e* or *o* before word-initial *a*, though such cases are worthy of investigation. I will also systematically exclude the standard *pragrhya*-sandhi data. You will notice that all of the inputs to the sandhi event are two syllables in length (the final vowel of the first word + the initial vowel of the second word) and all of the outputs of the process are single syllables.

		Word-initial vowel									
		<i>a</i>	<i>ā</i>	<i>i</i>	<i>ī</i>	<i>u</i>	<i>ū</i>	<i>e</i>	<i>ai</i>	<i>o</i>	<i>au</i>
Word-final vowel	<i>ā</i>	<i>ā</i>	<i>ā</i>	<i>e</i>	<i>e</i>	<i>o</i>	<i>o</i>	<i>ai</i>	<i>ai</i>	<i>au</i>	<i>au</i>
	<i>ī</i>			<i>ī</i>	<i>ī</i>						
	<i>ū</i>					<i>ū</i>	<i>ū</i>				

We will not be discussing here glide-formation phenomena—the treatment of high vowels before non-high vowels or unlike high vowels (thus the gaps in the table above), nor will we worry about the complications of (1) following *r* or (2) the sandhi of *sá(s)*, both of which are excluded from everything that follows.

I will call all outcomes represented in the table above **coalescence**. When the meter indicates that the vowels are *not* to be combined as in the table above, each vowel continuing to contribute to the syllable count for that line, I will call this **hiatus**.

As is already generally known, in Classical Sanskrit metrical texts the table above is, generally speaking, faithfully reflected in scansion. Clearly, if the Rigveda shows both coalescence and hiatus, but Classical Sanskrit only coalescence, something has changed. There are many possibilities as to what that “something” was.

A fairly straightforward understanding of this phenomenon in general goes something like this: the meters we are dealing with are syllable-counting; the processes involved modify the syllable count; therefore the poet uses the variability of the process to compose numerically appropriate *pādas*. After all, this is what we do as scholars approaching the text. I’ll use the van Nooten-Holland (1994) “metrically restored” text here (so that you know I’m not manipulating the data for my own evil purposes), and it is quite clear that their procedure, all other things being equal, is, when possible, to posit hiatus in the text when otherwise the line would be hyposyllabic, and to posit contraction in the text when otherwise the line would be hypersyllabic. This presumably reflects the undoubtedly correct belief that the true Urtext of the Rigveda was composed in properly constructed verse lines, at least in the vast majority of cases, and that the adjustments made in the case of

V-V sandhi give correct syllable count so frequently that something like what we're doing must be the correct path to the establishment of that Urtext.

Nevertheless, the standard scholarly literature has long recognized that the “syllable count demands of the meter” explanation does not provide a fully adequate framework for understanding the phenomenon in play here. One of the conditions on hiatus vs. contraction recognized since Benfey 1881 is summarized by Wackernagel (1896:315) as follows:

Hiatus findet sich ... [b]ei Sinnesabschnitten: ausnahmslos hinter *ná* ‘wie’ ... und vor *át* ‘sodann’ ..., während umgekehrt bei begrifflich abhängigen Wörtern und in der Zusammensetzung durchaus kontrahiert wird ... [refs. omitted]

Hiatus is found ... in the case of semantic division: without exception after *ná* ‘like’ ... and before *át* ‘thereupon’ ... while in contrast in the case of conceptually dependent words and in composition there is contraction throughout ...

Clearly, if the syntactic relationship between adjacent words (or their prosodic relationship) can block or require vowel coalescence, the poet is not free to do as (s)he likes when vowels come together in the line. Wackernagel (1896:315) already explicitly notes this fact (quoted below).¹

So from our relatively simple and unproblematic story—the poet treats the matter as we do, using hiatus when a syllable is needed and contraction when it is not—we have a complication: it seems the poet *sometimes* is attending the actual prosodic properties (on which more in a moment) of the strings in play, and, if the variability in other contexts is to be treated in the traditional way, sometimes simply exploits the variability for ease of composition (*metri causa*).

I have begged the question somewhat by stating the poets were sensitive to “prosodic properties”—after all perhaps they merely had a “lexical rule” that said “in the case of comparative *ná* ‘like’ never contract, and in the case of negative *ná* ‘not’ do contract.” Such a rule makes no reference to prosody and could be considered, e.g., the poets’ interpretation of inherited metrical tradition.

1 Note that a “syntactic relations” type of explanation differs from that sometimes offered. For example, Vine (1978:183) cites as the “standard explanation” for the non-contraction of comparative *ná* that the non-contraction serves “as a secondary marker to preserve the semantic distinction between *ná* and *ná* ‘NEG’...” labeling this explanation as “doubtless correct.” But this seems much less likely, at least to me, than the idea that the two *ná*’s came to have distinct prosodic connections with their associated material because they came to stand in distinct structural relationships to that material. Natural-language tolerance for ambiguity is high, and it is quite unclear what kind of diachronic mechanism would allow a learner to impose an arbitrary phonological process on a form to eliminate what would otherwise be an ambiguity.

As we all know, the Rigveda is a chronologically, dialectally, and stylistically non-uniform text. Since sandhi-phenomena in all known cases are subject to significant variation across time, space (including social space), and speech style, it would be astonishing if the Rigveda were to yield absolutely uniform data regarding such phenomena. So we should all go into this with our eyes wide open: we anticipate a bit of a mess. One's tolerance for a particular number of exceptions to generalizations in this domain will vary from scholar to scholar and the tradition (e.g., of Benfey) in offering relatively ad hoc explanations to try to rid ourselves of some of these can be more or less controversial. However, I think it is pretty clear, even from the *ná* facts alone, where there are, as Benfey notes, a very small number of actual exceptions to the “do contract” rule for the negation, that the grand outlines of a system can be uncovered.

Methodologically, it is particularly concerning to me that we allow ourselves so many diverse types of explanation for the same phenomenon in light of an approach to the text which is *in addition* going to have to countenance a certain degree of residual variability. For example, the full version of Wackernagel's discussion mentioned a couple of times above provides *three* factors responsible for hiatus (once again, I omit the references throughout—no other substantive material is being elided under the “...”):²

Im ursprünglichen Text der Samhitās, wie er sich aus dem Metrum ergibt, herrscht ebenfalls die Kontraktion ... Allerdings unterbleibt die Kontraktion häufig ... aber nur unter bestimmten Bedingungen; ...

- α) Sehr gern vor schwerer Silbe ..., und zwar wesentlich nur vor solcher, wo auf der Anlautvokal eine Konsonantengruppe folgte, ... woraus folgt, dass diese Ausnahme nicht dem Metrum zu lieb gemacht wurde;
- β) Öfters in der Cäsur, bes. hinter der 5. Silbe elf- und zwölfsilbiger Verse; ...
- γ) Bei Sinnesabschnitten: ausnahmslos hinter *ná* ‘wie’ ... und vor *át* ‘sodann’ ..., während umgekehrt bei begrifflich abhängigen Wörtern und in der Zusammensetzung durchaus kontrahiert wird ...

In the original text of the Samhitas, as the meter reveals, contraction also dominates ... Of course contraction fails to occur frequently ... however only under certain conditions: ...

2 I have modified the layout for greater legibility.

- α) Very readily before heavy syllables, and to be precise essentially only before those whose initial vowel is followed by a consonant cluster, ... from which it follows that these exceptions were not made for the sake of the meter;
- β) Often at the caesura, especially after the fifth syllable of 11- and 12-syllable verses; ...
- γ) In the case of semantic division: without exception after *ná* 'like' ... and before *át* 'thereupon' ... while in contrast in the case of conceptually dependent words and in composition there is contraction throughout ...

Note the significant diversity of types of explanation being offered: (α) seems phonological (before word-initial *VCC-*); (β) seems metrical (before caesura, which I will indicate here with the symbol :); and (γ) seems syntactic (broadly construed).

These generalizations are specific to early texts, but Wackernagel (1896:307) notes the following (regarding variable sandhi outcomes in general):

Manche dieser Abweichungen von den grammatischen Sandhiregeln lassen sich bis in die jüngeren heiligen Texte hinabverfolgen, immerhin sind sie schon im Av. viel weniger zahlreich als im RV.

Many of these deviations from the grammatical sandhi rules are continued down into the later religious texts, though for all that they are already much less numerous in the AV than in the RV.

Several important questions arise regarding these descriptive generalizations, including at least:

- a) Are (α), (β), and (γ) completely independent parameters? If the following word starts with *VCC-* does it not matter if the caesura intervenes or if there is any syntactic connection between the words? If the caesura intervenes, is the *VCC-* condition relevant, and does it matter if there is any syntactic connection present? If there is a syntactic connection present, does it matter whether the next word starts with a *VCC-* or is separated by the caesura?
- b) There are two somewhat surprising aspects of (α) and (β) from our general understanding of how these things work: (α) directly asserts that two different types of “following heavy syllable” function differently with respect to this phonological process, and (β) seems to imply that there is a potentially significant contrast between the “early” caesura after the fourth syllable of trimeter verse and the “late” caesura after the fifth, the “late” caesura triggering stronger separation between the elements. Are these accurate, if so what might that tell us?

- c) If (α), (β), and (γ) give us the conditions on hiatus, how is it that the AV shows less hiatus (if it does)? Does the decline concern (α) or (β) or (γ) or all three? Are the conditions given by these factors simply present less often in the text, or are any or all of these contexts less likely, statistically, to induce hiatus? Do the probabilities descend (if they do) at the same rate for all three contexts?

I'd like to tell you that this paper will provide an answer to these important questions, but it isn't going to. What I'd like to do instead is kind of sketch out an understanding of what might be going on in this domain, presenting the relatively modest amount of evidence I have at this juncture that could be taken as support for this understanding, and leave it as an exercise to the reader to flesh out the details. So, basically, I have a *concept of a plan*.

2 The solution?

The worst thing you can do in trying to solve a problem is give yourself arbitrary degrees of freedom in seeking an explanation. Only constrained theories are likely to provide us with insight. It is particularly important to avoid this misstep given that the variability inherent in the text of the Rigveda cannot be controlled for, at least by me, at this juncture. We have some very rough chronological ordering ("Family" Books vs. Books 1 and 10, e.g.), but little else to go on. This introduces a certain degree of asystematicity already: we cannot add to it by our research methods.

The one linguistic factor that we've got a sense could be relevant (at least since Benfey 1881 regarding *ná*) is the "syntactic relationship" between words, or, more likely, their prosodic relationship, which is itself, in my view, established in part on the basis of the relevant syntactic structure. It is important to point out at the outset a fairly obvious and annoying fact of life regarding the prosodic structuring of clauses in human languages: the same string, in every language I've ever seen, allows for more than one prosodification. Of course, the distinct prosodifications give rise to (sometimes slight) differences in interpretation. However, to the extent that it is the prosodification of the string that lies at the root of "tight connection" vs. "loose connection" between words (with many possible intermediate degrees of relationship) and thus plays a determinative role in sandhi outcomes, we can expect *not* to always be able to determine what is going on from examining the string itself. *John gave Mary the book* vs. *John gave Mary the book* vs. *John gave Mary the book*, etc., might look the same in the written-form text of the Rigveda, but were almost certainly differentiated by prosodic structuring.

Emphatic stress has already been leveraged by Benfey (1881:22–3) to account for a few of the ten exceptions to “invariable contraction” of negative *ná* in the Rigveda,³ with the plausible assumption that prosodic emphasis induces some degree of “separation” between the emphatic element and its neighboring words. And, while it probably goes without saying, the syntactic structure of a given string in Vedic Sanskrit remains quite opaque to us in all but the most blatant cases. Given what little we know, it seems clear that word A can be *linearly adjacent* to word B in two RVic sentences, while in these two sentences A and B occupy quite distinct structural positions and thus stand in a distinct *prosodic* relationship. This means that even if we knew what the structural effects of fronting an adjective to a position before its noun, or moving an adverb into a structural position associated with “focus,” or any such “movements,” entailed (we don’t), the effects of such syntactic events on the prosodification of the moved element and of its “remnant” are matters regarding which we have virtually nothing to go on at this point.

The three factors identified by Wackernagel as responsible for hiatus in the Rigveda can all be plausibly construed as prosodic in nature (though that is not how he presents them). The avoidance of overlength (α) is clearly prosodic (in the broad sense), having to do with syllable and/or foot structure. I believe it is a pretty standard view that the caesura (β) represents a point of intonational reset in the line.⁴ And of course the constituency conditions (γ) can clearly trigger prosodic effects.

Let me note regarding the caesura the contrast between what I am proposing here and the *metrical* analysis floated by Wackernagel. The metrical conception presented there holds that we have this point in the trimeter line that requires an intonational reset or pause—the caesura—and when the poet constructs the line, (s)he induces a caesura at the relevant point, severing any possible prosodic connection between the words on either side of this reset.

By contrast, I assume that the task of a good poet is to construct lines such that the structures required by the meter (heavy vs. light syllables, caesuras, syllable count) are in alignment with the relevant related structures in the clause. Under this conception, the caesura will be naturally aligned with places within the clause where an intonational reset makes sense, given the intended meaning. In this model,

3 Contra Benfey, I also consider RV 1.104.6ab and 1.112.17ab to be exceptions to the mandatory hiatus after the *ná* of comparison, to which Benfey asserts there are no exceptions. Nevertheless, the number of exceptions to Benfey’s generalizations remains, under any analysis, very very small.

4 Hale and Kisko 2022 presents direct linguistic evidence for this analysis from the facts of negative scope and comparative clauses in the RV and AV.

neither the meter nor the natural prosodic properties of the clause are “in control”: the task is one of constructing sentences with the desired interpretation that can be sensibly mapped onto the pre-existing structures required by the meter. This is what I think a good poet should do. And I think the Rigvedic poets were good poets.

3 Some implications

So let’s start with some of the implications of this idea. Let’s take a simple but not uninteresting case, mentioned by Wackernagel, as our starting point: hiatus before *át*. Wackernagel says that hiatus is *ausnahmslos* before this word, and this is correct. However, unlike the many, many instances of hiatus after *ná* ‘like’, which he mentions in the same breath, there are only three attestations of *át* after an “expected coalescence” vowel. While 3 vs. 0 is something, it isn’t all that compelling.⁵

However, it is well worth pointing out that we should be quite unsurprised if an element like *át* showed regular hiatus on its left. Its three RV’ic attestations are somewhat diverse in type, but all three would show a clear break in most languages I know. In RV 2.5.7cd the entire *át*-clause is a parenthetical insertion, and parentheticals are generally set off from their context by intonational resets. In RV 8.82.3 *át* introduces a new clause, and clause-boundaries regularly show intonational breaks. Finally, in RV 7.66.11ab we have *át* marking the culmination of a coordination sequence, again a natural context for a break (this is the structure of the AVP instance as well).

- (1) RV 2.5.7cd

stómaṃ yajñám ca át áraṃ
vanémā rarimā vayám

Praise and sacrifice—afterwards may
we win (their reward)—have we given.⁶

- (2) RV 8.82.3

iṣā mandasva át u te
áraṃ várāya manyáve
bhúvat ta indra sám hrdé

5 I’ve found one AV example of post-vocalic *át*—AVP 2.85.4c. Like the RV examples, the AVP line also shows hiatus.

6 I’ve modified the Jamison-Brereton translation to make the parenthesis clearer, but have not changed its spirit, I hope.

Become exhilarated on the refreshment,
and then in accord with your desire and your fervor
it will become weal for your heart, Indra.

(3) RV 7.66.11ab

ví yé dadhúḥ śarádam másam ád áhar
yajñám aktúm ca ád ícam

They who divided the year, the month, then the day;
the sacrifice and the night, then the verse—

While it is perfectly sensible to expect hiatus in these kinds of contexts, it goes without saying that this is not what one will find all the time in all ancient language texts. Greek and Latin drama freely allow non-hiatus treatments of $V + V$ at clause boundaries, for example. The precise role of the clause boundary as a hiatus trigger has not been explored for the RV, to my knowledge.

Let us turn to the other case explicitly mentioned by Wackernagel-Debrunner and imagine that what Benfey has shown is that in the normal case there must be a natural prosodic break at the right side of *ná* ‘like’ and that no such break is present at the right side of *ná* ‘not’. If the caesura is associated with a prosodic break, we would therefore not be surprised to find *ná* ‘like’ before the caesura, but we would be surprised to find *ná* ‘not’ in that position.

The distribution of both of the *ná* elements has been explored, based primarily on the data of RV 1–8, by Vine 1978, whose primary focus is on metrical distribution, etymology, and implications of these matters for the history of the Vedic (and IE) meters. In what follows I present an independent investigation of data from the entire text—the general distributional claims will be largely consistent with what Vine found in his subset of the data. The slight differences will be noted.

There are at least two possibilities regarding the coalescence of *ná* ‘not’: it could be that coalescence is the *default* outcome when vowels come together, such that in the absence of a hiatus-inducer, we will always get contraction. Or it could be that *ná* ‘not’ actually leans rightward, i.e., is proclitic (at least under certain circumstances). The former theory entails no particular separation on the left-hand side of *ná*, while the latter could be taken as implying some degree of separation from what is on its left.

Recall that Wackernagel asserted that the caesura itself can induce hiatus. However, under the theory being explored here it can only *reflect* a naturally occurring “break,” not *trigger* one that is not naturally present. So we have a couple of different theories, with a couple of different predictions, particularly for the

syllabic positions in trimeter lines that surround the caesura (4, 5, and 6). We can spell these theories out, and then check them against the attested data. For the table below I will consider it established that “comparative $ná^C$ ” (which I will call “ $ná^C$ ” from now on) has a necessary break to its right. For “negative $ná^N$ ” (which I will call “ $ná^N$ ”) I will consider both the theory that coalescence is mandatory for $ná^N$ and that coalescence is simply a default outcome when vowels come together unless something blocks it (i.e., that $ná^N$ may actually lean right, or not). I’ll label the $ná^N$ that actually leans right (and is assumed to have a prosodic break with what is on its left) the “proclitic” theory; if $ná^N$ simply undergoes coalescence by a default rule, which entails no prosodic break with the material on its left, I will say it is “not proclitic.” Finally, I will assume (and the data confirms this) that we can safely ignore the presence of monosyllables in position 5 for this part of our study.⁷

		Can sit in		
		4th position	5th position	6th position
$ná^C$	does not lean left	Yes	Yes	Yes
	does lean left	Yes	Yes	No
$ná^N$	is not proclitic	Yes	Yes	Yes
	is proclitic	No	Yes	Yes

Here’s what this means. Assuming $ná^C$ simply has a “no coalescence” restriction (and no other special prosodic properties), there is nothing to prevent it from appearing a) in 4th position with the caesura after it, b) in the 5th position with a caesura before or after it, or c) in the sixth position with a caesura before it (notice that because we are excluding monosyllables in position 5, there will always be a “late caesura” when $ná^C$ is in 6th position under the “does not lean left” analysis). This is so because $ná^C$ has *no* interesting prosodic properties under this analysis; it is merely subject to a “hiatus-inducing” rule.

In the same way, a $ná^N$ that is not proclitic can occur a) in 4th position with a caesura after it, b) in 5th position with a caesura before or after it, or c) in 6th position with a caesura before it (notice that because we are excluding

⁷ There are only five by my count, four after comparative $ná^C$ in position 4 and one before a 6th position negative $ná^N$. None appear relevant to our issue, and I will exclude them from consideration in what follows. The monosyllable-in-5th-position issue is potentially relevant, because a proclitic $ná^N$ could sit in 4th position in the line if there were a monosyllable in 5th position to permit a caesura after itself. If no such monosyllables need be considered, a proclitic $ná^N$ cannot sit in the 4th position, because 1) it cannot have a caesura after it, since it is proclitic, and 2) there can be no caesura after 5, since the element that occupies 5 is not a monosyllable.

monosyllables in position 5, there will always be a “late caesura” when $ná^N$ is in 6th position under the non-proclitic analysis).

By contrast, if we assume that $ná^C$ *does* lean to the left (i.e., does have special prosodic properties), then a) it may occur in 4th position, leaning on the element ending in the 3rd with a caesura to its right; b) it may occur in 5th position, leaning on the element which ends in 4th position, with the caesura to its right (i.e., “late”); however **c) it cannot appear in 6th position**, because in that position it would have to lean on the element that ends in 5th position (so the caesura can’t be a “late” one) and, since that element cannot be a monosyllable, there couldn’t be a caesura after 4th position either.

And, in the same way, if we assume that $ná^N$ is in fact proclitic, then a) it may occur in 6th position, with a “late” caesura after position 5; b) it may occur in 5th position, with an “early” caesura after position 4; however **c) it cannot appear in 4th position**, because it cannot be followed by the caesura and, the 5th position being the start of a polysyllabic word, the caesura cannot appear after the fifth syllable of the line either.

4 Some data

We now have two theories for each of these forms of $ná$. Can the data tell us which is correct? To find out, I present in the table below all instances of $ná$ ($ná^C$ or $ná^N$) in positions 4, 5, or 6 of trimeter lines in the Rigveda, extracted from Lubotsky’s (undifferentiated) concordance, with the function of the $ná$ being read off of the Jamison-Brereton translation. There are about 333 instances of $ná$ in this position.⁸

	<u>In 4th position</u>	<u>In 5th position</u>	<u>In 6th position</u>	<u>TOTAL</u>
$ná^C$	52	167	3	222
$ná^N$	1	52	59	112

There can be little question but that this data strongly supports the assumption that 1) $ná^C$ leans leftward as well as having a strong prosodic break between it and what follows and 2) $ná^N$ is a proclitic. As I noted, these numbers are based on van Nooten and Holland’s “metrically restored” version of the text. The four exceptions to our expectations may have alternative explanations that remove them from the list of

⁸ Note that $ná^C$ predominates in the text of the Rigveda; Jamison 2024 says that about 1,300 of the 2,103 instances of $ná$ are $ná^C$, a ratio well reflected in the total numbers in the table below.

exceptions, though these are of varying degrees of quality. I'll start with the strongest cases for elimination.⁹

Strictly following the rendering of van Nooten and Holland, we find one of the exceptions listed above at 10.6.5ab:

(4) RV 10.6.5ab

tám usrām índraṃ : ná réjamānam
agnīṃ gīrbhīr : námobhīr ā kṛṇudhvam

With hymns and reverent gestures attract Indra here
at dawn like trembling Agni.

Here we see a comparative *ná* in the 6th syllabic position, contrary to expectation. Fortunately, we now know (Jamison 2024) that we consistently find comparatives of the form *ná X* (instead of expected *X ná*) when otherwise the *ná* would be line-final. One assumes that the prosody of these strings involves *ná* leaning rightward, like the negation, rather than on the unrelated word to its left. If this archaic prosodification of *ná* is correct, we now *expect* it to be able to appear in the 6th syllabic position of a trimeter line in precisely this circumstance. This example confirms that it can do so! This removes one of the three cases of *ná^C* in 6th position.

The next of the van Nooten-Holland exceptions comes at 1.187.11ab:

(5) RV 1.187.11ab

tám tvā vayám pito
vácobhīr gāvo : ná hanyā suṣūdima

We have sweetened you with words, O food,
as cow(s' milk does) the oblations—

The b-pāda, as given by these editors, has a comparative *ná* in the 6th position of a trimeter line. Clearly the a-pāda is not all we would hope for. The meter is discussed by Oldenberg *ad loc.*, who divides the lines more or less as above, but says

9 Vine's 1978 summary of the distribution, which you will recall is based on a subset of the total evidence, could mislead the superficial reader. He says (177–8) “*ná* ‘NEG’ also appears with moderate frequency at the caesura, i.e. in syllables 4 (e.g. 1.124.6b) and 5 (e.g. 1.102.10a).” This gives the impression that appearance in positions 4 and 5 are equally likely, whereas in fact 1.124.6b is the sole instance of *ná^N* in position 4, and there are 52 appearances in position 5. Vine's subsequent statement (179) that in trimeter verse “[a]t the caesura ... there is complete overlap” in the distribution of *ná^C* and *ná^N* is technically accurate, but, again, fails to recognize what seems to me to be a real contrast. Note that Vine does capture the most essential fact, noting (178) that “[s]yllable 6 constitutes the unmarked post-caesural locus of *ná^N*.”

regarding the b-pāda “mit langer siebenter bei späterer Cäsur, oder vielleicht eher cäsurlös.”¹⁰ The verse is found at AVP 6.16.11ab, for which Griffiths (2009:196) prints

(6) AVP 6.16.11ab

taṃ tvā vyaṃ pito vacobhir (9 syl.)

gāvo na havyā suṣūdimā (9 syl.)

You, o Food, we have with words made sweet,
as cows [sweeten] libations (of Soma):

Under either the caesura-less analysis of Oldenberg, or the line division of Griffiths, this is hardly a counterexample we need to worry about. This eliminates a second of the three total unexpected instances of *ná^C* in 6th position.

Only slightly harder to deal with is the last remaining instance of *ná^C* in the 6th position at RV 1.174.8c.

(7) RV 1.174.8c

bhinát púro · : ná bhido ádevīḥ

You split the godless (clans) into pieces, like strongholds;

Note first that this *ná* is actually in the fifth position in the line, as transmitted. It is pushed into the 6th position by van Nooten and Holland’s insertion of a “rest” in what has to be the most unlikely of places: between *púraḥ* and *ná* in the expression “like strongholds.” They say (1994 ad loc.) regarding our pāda “Tr. 10 syllables. Rest at the 5th place.” In light of the ten-syllable count of lines 1.174.2a, 2c, 3a, 3d, 4a, 5a, 6a, 7a, 8a, (our) 8c, 9a, 9b and 10a, there may not be a lot to worry about here.¹¹

I think from this it’s pretty safe to reduce the three instances of “exceptional” *ná^C* in the sixth position to zero. A surprisingly consistent result.

10 “with long seventh syllable and a late caesura, or perhaps rather caesura-less.”

11 While the relatively trivial—though no conditions are known—restoration of ⁺*indara* fixes many of the a-lines, there remain 2c (rest inserted), 3d (no repair suggested), 8c (rest inserted in a weird place, from our perspective), and 9b (rest inserted), which is a healthy number. Moreover, in general, the rests are posited by van Nooten and Holland adjacent to the caesura. In the fourth position we clearly get $\times \times \times \cdot |$, but a rest in the fifth position is a little harder to interpret. Is it $\times \times \times \times | \cdot$ or $\times \times \times \times \cdot |$? It is not obvious (at least to me) how these “rests” are to be implemented in the delivery of the line, but it isn’t clear to me that we can a priori exclude $\times \times \times \times \times | \cdot$ for this line.

Regarding the sole exceptional instance of $ná^N$ in 4th position, I fear I have nothing useful to say. Here’s the example:

(8) RV 1.124.6b

nājāmiṃ ná : pári vṛṇakti jāmim

Neither the non-kin does she avoid, nor the kin.

If one were desperate, which I am not given all the considerations I outlined above, one could I suppose translate “she does not avoid the kin like (i.e., as if they were) non-kin.” But the stanza continues *arepāsā tanívā śásadānā/ nārbhād íṣate ná mahó vibhātī* “Exulting in her spotless body, neither from the small does she retreat, nor from the great, as she shines forth.” The parallelism between “neither the non-kin nor the kin” and “neither from the small nor from the great” is too good to give up on, I suppose.

A hiatus after the first $ná^N$ would solve the problem, giving a hypersyllabic *ná ajāmiṃ : ná pári vṛṇakti jāmim*, however, in addition to wrecking the syllable count, this would add to the very, very small pool of exceptions to the generalization that $ná^N$ does not have hiatus on its right.

I don’t consider either of these alternative palatable, so my revised table is:

	In 4th position	In 5th position	In 6th position	TOTAL
$ná^C$	51	168	0	219
$ná^N$	1	52	59	112

With the special note that the single relevant instance of *right-leaning* $ná^C$ (example (4) above, explained by Jamison 2024) is not included in the table. A single exception out of 333 data points is not, frankly, anything like the kinds of variability issues this project is going to be plagued by, so I’ll be happy with this result.

Before moving on, let me point out that this data strongly counterindicates the notion that the caesura can *induce* a break where the language doesn’t allow one. As mentioned above, if that were true, none of the “No” boxes in the table listing where various $ná$ ’s can or cannot appear above would be there — if the caesura could induce hiatus, you could place either $ná$ in either position. The caesura could force a “break” before a $ná^C$ in 6th position, giving a perfectly acceptable “late” caesura, and it could force a “break” after a $ná^N$ in 4th position, giving a perfectly acceptable “early” caesura. The fact that this does not happen is very problematic for a theory that grants the caesura that kind of power.

Before we leave our $ná$ business to one side, it is worth pointing out that what we are learning is that the prosody posited on the basis of the hiatus data is not, in

fact, about hiatus as such. The data regarding the caesura is completely orthogonal to whether there is ever an instance of hiatus or contraction for either $ná$ in the text: the right way to conceptualize this is that $ná^C$ and $ná^N$ each has a distinct prosody, and that prosody determines both the hiatus/coalescence facts *and* the distribution-around-the-caesura data.

And, in fact, that is not all the evidence we have. Hiatus and coalescence concern the right side of $ná^C$ and $ná^N$ but what about their left sides? You will recall that the retroflexion of n (so-called *ṇati*) is a regular process in Sanskrit phonology, and perhaps you will recall that it occurs in the Rigveda on occasion across word boundaries as well. Since it is triggered by an r to the *left* of the affected n , we might a priori make the assumption that, were one of our $ná$'s to get *ṇati*'ed, it would be the one that enters into close juncture on its left: $ná^C$.

What does the data look like? There are twenty instances of $ná^C$ showing up with a *ṇati*'ed n , seventeen after *sívar* “like the sun” and three after *vár* “like the water.” There are no exceptions known to me after r -final stems.¹² There are no instances involving rightward-leaning $ná^N$. Combined with the hiatus and coalescence facts and the distribution of both $ná$'s around the caesura in trimeter lines, what we see is a system where elements have whatever prosodic status they have even when there are no segmental effects to be seen. Hiatus, coalescence, and *ṇati*-fication are all byproducts of a deeper underlying cause: the prosodic status of the elements involved. As I said, in my view, this status is itself tightly connected with the types of syntactic structures that these forms enter into.

5 What kinds of prosodic entities are there?

The justification I provided in Hale 1999 for having Brugmann's Law applying to the particle *gha* (but not the particle *ha*) in pre-*CV* context was partly the close prosodic connection between these particles and the word that immediately follows them. In twenty-one instances with *gha* and in five instances with *ha* the particle appears before a word-initial vowel. In all twenty-six cases, the meter shows coalescence between the particle and that word-initial vowel.

This is interesting, because it indicates that in addition to the “left-side lean, right-side prosodic break” type represented by $ná^C$, and the “left-side prosodic break, right-side lean” type represented by $ná^N$, we may need to recognize a third type. It appears that *gha* and *ha* (note their lack of accent) may be of the type mentioned above as a possibility (ultimately rejected) for $ná^N$: they lean leftwards but

12 The triggers for this *ṇati*-fication include r , but not r which arose via the sandhi of a RUKIed s .

can still undergo a “default” process of vowel coalescence rightward. What I have in mind is outlined in the table below.

	In trimeter		Hiatus vs. coalescence
	4th position	6th position	
<i>ná^C</i>	yes	no	hiatus
<i>gha/ha</i>	yes	no	coalescence
<i>ná^N</i>	no	yes	coalescence

In spite of the general contrast I’ve drawn between *ná^C* and *ná^N* the existence of a “default” vowel coalescence makes the matter somewhat more complicated. We know from the metrical distribution that *ná^N* allows a caesura on its left and does not allow a caesura on its right, but of course *gha* and *ha* likewise allow a caesura on their left and do not allow a caesura on their right, but still regularly contract rightwards.¹³ Since *ná^N* is not vowel-initial, it is not possible to tell whether, like a mirror image of *gha* and *ha*, though it commonly appears post-caesura, it nevertheless has the kind of prosodic connection with what precedes that would allow contraction (had it only been vowel-initial).

There are some pretty clear candidates for elements that 1) show clear evidence of a close connection with the following word, 2) regularly appear post-caesura, and 3) nevertheless allow more or less invariant contraction on their left side: the preverbs. Evidence for the close connection between a preverb and the word that follows it (by far most frequently the verb with which it is associated) is well known: preverbs with *r* (*prá, pári*) regularly induce *nati* effects on a following *n*, preverbs ending in non-low vowels (*ví, ní, pári*, etc.) regularly trigger RUKI effects, contraction is virtually mandatory, etc. Interestingly, while we usually think of these phenomena as being due to the close relationship between the preverb and its verb, we tend to find these same effects regardless of what word follows the preverb.

As regards the caesura, here’s the rough data for the usual monosyllabic “preverb-only” items in this class (to avoid the confound of the preposition vs. preverb issue). For these monosyllabic preverbs, appearing in the 4th position generally entails (unless there is a following monosyllable) being pre-caesural, appearing in

13 Obviously there will not be contraction across the caesura, but for *gha* and *ha*, in spite of their relatively high frequency, there are simply no cases of their being followed by a vowel-initial word with the caesura between, so we can’t know how such a sequence would have been treated. Compare the discussion of *iid* below.

the 6th position generally entails (unless there is a preceding monosyllable) being post-caesural, and appearing in the 5th position is ambiguous between the two.

	In 4th position	In 5th position	In 6th position
<i>úd</i>	0	14	19
<i>ní</i>	0	35	43
<i>nís</i>	0	10	5
<i>prá</i>	5	78	64
<i>ví</i>	3	55	113
<i>sám</i>	1	23	45
TOTAL	9	214	289

For all of the preverbs listed above, the total *necessarily* pre-caesural instances are 9, while the total *necessarily* post-caesural instances are 289 (there are 214 that we have labelled thus far “ambiguous”).

But these numbers, as good as they are, are much better than this. I called them “raw” because these are the numbers one gets if one counts mechanically. But if one examines the passages that either go counter to hypothesis (nine in number) or are “ambiguous,” one finds that many of them can be dealt with.

Let’s start with instances in which the preverb sits in “ambiguous” 5th position. Obviously, if that preverb is followed by an enclitic, we must be dealing with **∶PV cl** (given ***∶cl** as a general constraint). Most of the preverbs show instances of this in the above count—when we move these instances from “ambiguous” to “necessarily post-caesura,” we get new numbers.

	Pre-caesural	Ambiguous	Post-caesural
<i>úd</i>	0	11	22
<i>ní</i>	0	32	46
<i>nís</i>	0	10	5
<i>prá</i>	5	72	70
<i>ví</i>	3	55	115
<i>sám</i>	1	21	47
TOTAL	9	199	305

In addition, there are several instances in which a clause-initial preverb sits in 5th position in a trimeter line, indicating that we should place the caesura at the clause-boundary, i.e., that the preverb be post-caesural. This leads to the following adjustment to our table.

	Pre-caesural	Ambiguous	Post-caesural
<i>úd</i>	0	11	22
<i>ní</i>	0	31	47
<i>nís</i>	0	7	8
<i>prá</i>	5	63	70
<i>ví</i>	3	51	117
<i>sám</i>	1	17	47
TOTAL	9	180	324

I realize this is getting a little tedious, but we're almost done. If we take instances of *prá* in 5th position of the trimeter line—allegedly ambiguous—it seems clear enough that when the verb immediately follows, no one would place the caesura like this: *prá* : *V* in favor of placing it like this: : *prá* *V*. Fully forty-three instances of *prá* in the fifth position are like this, and I think should be considered “post-caesural” rather than “ambiguous.” Thirteen instances of *sám* in 5th position are immediately before their finite verb. All eleven instances of *úd* in 5th position are immediately before their finite verb. For *nís* in 5th position five are immediately pre-verbal, for *ní* twenty-nine are, and for *ví* thirty-seven. If we accept the, in my view uncontroversial, position that these instances should be metrically analyzed as : **PV** *V* rather than **PV** : *V*, our table now looks like this:

	Pre-caesural	Ambiguous	Post-caesural
<i>úd</i>	0	0	33
<i>ní</i>	0	2	76
<i>nís</i>	0	2	13
<i>prá</i>	5	16	125
<i>ví</i>	3	14	154
<i>sám</i>	1	4	64
TOTAL	9	38	465

Notice that the now massively reduced number of ambiguous data points is not probative either way, being ambiguous.

Even more interesting is an examination of the nine actual counterexamples established by a raw count, in which we seem to find a preverb in 4th position of the trimeter line, indicating that these preverbs could be being followed by the (early) caesura. Let's start with the five instances in which *prá* sits in 4th position in the trimeter line. In four of them, *prá* is followed by its finite verb (so we do not expect a caesura between them), and in each of these cases, the verb contracts with the final vowel of *prá*, and the caesura trivially follows the PV+*V* combination:

- | | | | |
|-----|-----------|-------------------------|-------------------------------|
| (9) | 5.30.9d | ... <i>práid</i> ... | (< <i>prá</i> + <i>ait</i>) |
| | 8.48.2a | ... <i>prágā</i> : ... | (< <i>prá</i> + <i>agāḥ</i>) |
| | 10.32.8a | ... <i>prāñīd</i> : ... | (< <i>prá</i> + <i>āñī</i>) |
| | 10.117.4c | ... <i>préyān</i> : ... | (< <i>prá</i> + <i>iyāt</i>) |

In the remaining instance involving *prá*, we have a clitic coalescing with the final vowel of the preverb, again indicating that that preverb cannot be immediately before the caesura:

- | | | | |
|------|----------|------------------------|------------------------------|
| (10) | 1.103.7a | ... <i>préva</i> : ... | (< <i>prá</i> + <i>iva</i>) |
|------|----------|------------------------|------------------------------|

The single instance of *sám* in 4th position shows an immediately following enclitic, *ca*, requiring that we scan ... *sám ca* : ... This leaves us with the three instances involving the preverb *vi* as possible instances of immediately pre-caesural preverb placement. Two of these cases (RV 5.85.8c, 9.97.18a) involve a monosyllabic verb following *vi* (in both cases the imperative *śya*), indicating a metrical analysis of ... *vi śya* :, with no caesura right after the preverb.

Because, you know, that's what life is like, there is one very clear, seemingly fine, counterexample. RV 5.85.2 reads, with the translation of Jamison and Brereton:

- | | | |
|------|-----------|--|
| (11) | RV 5.85.2 | |
| | | <i>vāneṣu ví antárikṣam tatāna</i> |
| | | <i>vājam árvatsu páya usriyāsu</i> |
| | | <i>hṛtsú krátum váruṇo apsú agnīm</i> |
| | | <i>divi sūryam adadhāt sómam ádrau</i> |

He stretched out the midspace upon the trees,
the prize of victory in the steeds, the milk in the ruddy (cows);
Varuṇa placed resolve in hearts, fire in waters,
the sun in heaven, and soma on the stone.

There's nothing metrically funny about the verse, it is not found in some other text tradition with the preverb before *vāneṣu* instead of after it, there's no help I've been able to find. Given the 465 to 1 patterning of the data generally, I would be strongly inclined to take this as a caesuraless line, I suppose. That it alone constitutes evidence that the preverb can appear immediately before the caesura I would not accept.

So the preverbs act like *ná^N*, inducing close sandhi effects with following elements and not appearing directly before the caesura. This would seem to indicate proclisis. But we have seen a contrast between the left-leaning *ná^C*, which occurs

pre-caesurally (and never post-caesurally) and requires hiatus on its right, and other left-leaning elements like *gha* and *ha*, which also occur pre-caesurally (and never post-caesurally), but nevertheless require coalescence on their right. We can then ask whether the preverbs, which occur post-caesurally and not pre-caesurally (the one exception notwithstanding) act like a mirror image of *ná^C*—and thus require a hiatus on their left—or like a mirror image of *gha* or *ha*—and thus allow contraction on their left. From the data we’ve been considering, only *úd* is relevant, of course, all the other monosyllabic preverb-only forms being consonant-initial. The *úd* evidence is, however, quite clear. There are nine instances of *úd* after a preceding word-final vowel with which it could coalesce. In all but one of those cases, it coalesces (RV 1.164.22d *ná + úd > nód*, 4.18.5c *atha + úd > athód*, 4.18.8d *sáhasā + úd > sáhasód*, 4.21.9d *ná + úd > nód*, 6.75.16d *caná + úd > canód*, 8.14.13b *indra + úd > indród*, 10.37.2d *viśvāhā + úd > viśvāhód*, and 10.37.9d *vásyasā-vasyasā + úd > vásyasā-vasyasód*).

There’s a single exception, but it isn’t really exceptional, in RV 8.63.2ab:

- (12) *divó mānaṃ ná út sadan*
sómapṛṣṭhāso ádrayah

The stones with soma on their backs have sat up,
 as if to the measure of heaven.

The required hiatus after *ná^C* prevents coalescence.

In spite of the relatively high frequency of *úd* in post-caesural position, it never appears in that position with a preceding word ending in a potentially coalescing vowel. This could be taken as a sign that coalescence is mandatory with *úd* (as it is with the mirror-image *ná^N* case). The interesting difference is that *ná^N* cannot appear to the left of the caesura, so the question of what would happen if it were separated from a following vowel by the caesura can’t be sensibly investigated. By contrast, the preverb *úd* happily sits in the post-caesura position (indeed, can’t be pre-caesural)—but if it must contract leftwards, it is necessary that no potentially coalescing word be placed before it in that position, because in natural speech there would be contraction, and the poet must respect this fact in constructing their poetic line.

An alternative conception of the matter would be something like this: coalescence is the default treatment of the relevant vowel + vowel sequences, being blocked only when specific considerations (whatever those might be) trigger hiatus (and those conditions are not terribly common, given the overall coalescence vs.

hiatus facts). The preverb *úd* is not terribly common after vowels in general.¹⁴ In none of its post-vocalic attestations is it in a “hiatus-inducing” context, so it (accidentally, as it were) always contracts.

6 Conclusions

The idea that the text of the Rigveda reveals a sensitivity to the syntactic, or syntax-dependent, prosodic facts of the natural language being used by the composers is not original—indeed, Benfey was already strongly advocating it in 1881. In more recent work, I can cite—in spite of a difference in overall methodology—the work of Gunkel and Ryan (2018:35). For example, they say that

... the poets abided by a general rule: the larger the metrical boundary, the more important that it coincide with a larger prosodic boundary. Since prosodic phrasing is to a great extent determined by syntactic phrasing, we expect to find a hierarchy of coincidence of syntactic and metrical boundaries.

But it is a bit of a dangerous move, in my view, to focus on “metrical boundaries” alone. *ná^C* doesn’t only show hiatus on its right before the caesura: it always shows hiatus on its right. The fact that it is often placed before the “weak metrical break” represented by the caesura needs to be brought into coordination with other aspects of its (prosody-dependent) phonological behavior. Every linguistic element has, in addition to its segmental and suprasegmental lexical properties, a prosodic status. This status is in part lexical (e.g., *ca* is an enclitic) and in part a function of the kinds of syntactic relationships the element enters into (e.g., left-dislocated phrases are followed by an intonational break—see Hale and Kissock 2022 on “negative” *iva*-clauses in Mantra Vedic).

It has worked to our detriment that the literature has treated contexts within which the prosodic status of elements reveals itself as if they were the *only* contexts within which those elements possessed that status. This has impeded the exploration of cross-context commonalities. For example, having a certain prosodic status may cause an element to have a hiatus on its right, but that hiatus is triggered by *two* factors: 1) being vowel-final and being followed by a word that starts with an appropriate vowel to reveal the hiatus and 2) having the prosodic relationship with

14 It is attested in 289 unique lines, in 189 of which it is in the irrelevant line-initial position; of the 100 remaining instances, as mentioned above, there are only 9 that follow a potentially coalescing vowel. So if about 9% of non-initial *úd* are after coalescing vowels, we might expect about 3 instances to fall into the 33 post-caesural cases. There are none, but this doesn’t seem like a terribly compelling statistical distribution to me.

the following word such that hiatus will be triggered. The second factor holds of the element in question *whether or not* there's a following vowel. This means that "having a hiatus on your right" should be expected to correlate with being able to appear directly before, but not directly after the caesura. If the element starts with a consonant that can undergo "close sandhi" induced effects (*nati*, RUKI, etc.) then we should expect to see those.

By contrast, mandatory contraction on the right may go hand-in-hand with prosodic separation from the material to the left ("proclisis"), in which case we would expect the element to be able to appear in immediately post-caesural position, but not in immediate pre-caesural position, and to not show the effects of left-side induced "close sandhi" effects. It's not the case that $ná^N$ is proclitic *because* it shows mandatory contraction with what follows—it shows that contraction *because* it is proclitic. And it is just as proclitic when it comes before a consonant (and can't show contraction) as when it comes before a vowel (and must).

Finally, the set of prosodic elements is not exhausted by "enclitic," "proclitic," and "prosodically independent." We know this, of course, from French liaison (neither the adjective nor the noun in *faux amis* is a clitic!). The set of phrasal phenomena have to be explored against a broader conception of prosody than this simple one entails. This in turn is likely to be revealing as to the nature of syntactic relationships in the Vedic clause—a very non-trivial matter.

Several questions exist for the future, from the low-level technical to the more big-picture type. Are there elements, mirror-images of $ná^C$, that require hiatus on their left and cannot appear right before the caesura, just as $ná^C$ requires hiatus on its right and cannot occur immediately post-caesurally? What types of prosodic relationships can span the caesura, the pāda boundary, the hemistich boundary, and the stanza boundary? What are the full set of prosodic entities and what kinds of relationships do each of these types of entity enter into?

But perhaps the most interesting question for the historical linguist—one that I have not touched on here—concerns what changed between the Rigveda and the Atharvaveda. All previous scholarly commentary notes that the amount of hiatus declines (indeed, already, allegedly, by Book X of the Rigveda) during this span, but is silent on the precise nature of the decline. Do the contexts for hiatus appear less frequently? Or do they appear at the same frequency, but get treated differently? Is there a decline in all contexts in which the RV shows hiatus, or only in some subset of those contexts? Are the declines triggered by a difference in the syntactic structures present in the two texts, a difference in the prosodic properties of specific lexical items, or a difference in the inventory of items itself (or some combination of these)? As far as I can tell, we don't know the answer to any of

these questions at this juncture. But to the extent the orientation developed here—that holds that the phenomena surrounding hiatus and coalescence should be, as a first hypothesis, considered to be linguistic in nature—the changes are linguistic changes, and thus important for our understanding of the diachronic development of the Vedic language.

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