TOWARDS A NEW METHOD FOR ANALYZING SYNTAX IN POETRY: DISCRIMINATING GRAMMATICAL PATTERNS IN THE RIGVEDA

by

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(Under the Direction of Jared S. Klein)

ABSTRACT

The Rigveda is a large collection of hymns that represents the oldest attestation of the Indo-Iranian branch of the Indo-European language family. The value of the corpus as a source of syntactic insight, however, is limited by its entirely poetic nature. Its syntax has been studied, but until we better understand how poetic style and grammaticality interact, we cannot know how much our syntactic observations of the corpus really tell us about the grammar of the language. The difficulty of investigating syntax in poetry has not yet been properly treated. On the one hand, poetry must be intelligible, since it is composed and understood by the speakers of a language; on the other hand, the structures found in poetry can differ significantly from those of usual speech, which is why syntacticians avoid poetry in formal studies. But for those working with limited data or languages attested only in poetry, drawing the line between syntax and style is a necessary step towards an accurate syntactic account. The goal of this work is to establish a distinction between grammaticality and intelligibility, and to formalize a system for identifying which patterns in the Rigveda are grammatical and which may have been consciously manipulated. This system allows us to draw more reliable conclusions about the syntax of the language by filtering noise out of the data.

INDEX WORDS: Syntactic reconstruction, Generative syntax, Minimalism, Poetry, Meter, Scansion, Rigveda, Corpus, Vedic, Sanskrit, Indo-European
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List of abbreviations

1 first person
2 second person
3 third person
ABL ablative
ACC accusative
ADJ adjective
AP adjective phrase
AUX auxiliary
C complementizer
CL clitic
CP complementizer phrase
DAT dative
ERG ergative
FOC focus
FUT future
GEN genitive
GND gerund
IMP imperative
IMPF imperfect
INS instrumental
KB Kauṣītaki Brāhmaṇa
KS Kaṭha Saṃhitā
LF logical form
LOC locative
MS Maitrāyaṇī Saṃhitā
NOM nominative
NP noun phrase
OV Object-Verb
PF phonological form
PIC Phase-Impenetrability Condition
PL plural
PRF perfect
RV Rigveda
SG singular
SUBJ subjunctive
TS Taittiriya Saṃhitā
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Chapter 1

Introduction

The Rigveda is one of the oldest Indo-European texts, and from it have issued some of our deepest insights into the phonology and morphology of its more ancient ancestor language, Proto-Indo-European. However, the entire corpus consists of poetry, and without recourse to sufficiently contemporaneous prose (nor, it goes without saying, native speakers), any syntactic investigation of the language must either stall immediately or proceed with an uncomfortable acceptance of poetic data, which to an uncertain degree undermines the integrity of the account. The purpose of this dissertation is to lay some groundwork for a new method of investigating syntax within poetic corpora.

My original plan was only to map out the syntax of topic and focus in the Rigveda, with a particular emphasis on the phenomenon of fronting. The corpus has been treated similarly before by Mark Hale and Hans Henrich Hock in the 1996 book *Approaching Second*, but the subject has generally lain fallow since then. Due to the advancement of modern generative theories since that time, a fresh analysis seemed warranted. I immediately ran into the difficulty of trying to decide whether a word had been fronted in order to confer focus on it, or only so that its line would better reflect the metrical pattern of the hymn.
Any syntactic account citing the language’s word order was thus jeopardized. Nor was I content to accept the observed patterns as representative of the language’s grammar (as Hale and Hock had been), for the same banal reason that syntacticians working on modern languages avoid poetry: the unstated suspicion that poetic language might not really be “grammatical.”

Because the present work attempts to marry the historically independent fields of Generative Syntax and Historical Linguistics, a brief overview of each will constitute the first two parts of this introduction. The first part will introduce the language and corpus on which my work was conducted, and the second will introduce the framework of generative syntax in which we hope ultimately to model the syntax of that language. The final part of the introduction will include a chapter summary.

1.1 The Rigveda

Within the Indo-European language family, the Indo-Iranian branch comprises the second oldest attestations (after Anatolian), in the form of the Vedic language, which takes its name from the most ancient holy texts of India. The Vedas consist of four books: the Rigveda, the Sāmaveda, the Yajurveda, and the Atharvaveda; and there is a host of other literature, written after these texts, whose language is also called Vedic. Max Müller, in his History of Ancient Sanskrit Literature, divided the Vedic language into four periods: the Chandas period being the most ancient, followed by the Mantra period, the Brāhmaṇa period, and the Sūtra period (1860: 63).

The writings of the Sūtra period bridge the gap between the latest Vedic works and Classical Sanskrit. The Brāhmaṇa period contains the writings not only of the Brāhmaṇas themselves, but also the Upaniṣads and Āraṇyakas. The boundaries between these classes of texts are fuzzy. All of them are theological in nature, dealing with the interpretation of
older texts, the performance of sacrifices, and other cultural instruction (1860: 307). Interestingly, Müller tentatively places the Sāmaveda, the Yajurveda, and the Atharvaveda within the Brāhmaṇa period, reserving the Mantra period only for the compilation of the Rigveda (1860: 417), and the Chandas period for its composition (1968: 481). Müller, being careful to highlight the impossibility of assigning absolute dates to these periods, estimates each as having a span of about 200 years, with the earliest beginning around 1200 BCE (1860: 525). Vedic scholars in general agree with this estimate. In any case, the comparative antiquity of the Rigveda is notable, especially relative to the first prose attestations of the language (the Brāhmaṇas and portions of the Yajurveda).

The Rigveda consists of 10 books called maṇḍalas (“cycles”), comprising a total of 1028 hymns dedicated almost entirely to the gods of the ancient Indic pantheon. The hymns are poetic in nature, being composed in a small variety of quantitative meters. And since the comparative method relies on privileging older attestations for the purpose of reconstruction, the Rigveda has traditionally been the focus of proportionally more linguistic scrutiny. Thus it is from Rigvedic evidence that we derive the greatest number of insights into the prehistory of Vedic, and by extension, the grammar of Indo-European.

1.2 The generative approach to syntax

Syntax is the study of how morphological entities combine to form larger units, for instance the way nouns combine with determiners and adjectives to form phrases, and how phrases in turn form sentences. In the past six decades, Syntax as a field has evolved from disconnected observations concerning word order into a self-contained science, the lofty goal of which is to produce a single theory of syntax that can model all human languages equally well.
In 1957, Noam Chomsky ushered in a new era in the study of syntax as a formal system with his seminal work *Syntactic Structures*. The driving idea behind this work and the theory it proposed was that any syntactic structure could be created by a finite set of rules, some of which generate structure and others of which transform one structure into another. For instance, a question like *what are you eating?* is “transformed” from a simple declarative, namely *you are eating what?*, whose elements are “base-generated.” This was the beginning of the generative tradition.

Subsequent works by Chomsky crystallized major developments in the field. His 1965 book *Aspects of the Theory of Syntax* laid out what was known as the “Standard Theory” and introduced the formal concepts of “deep” versus “surface” structure, deep structure referring to what is base-generated and surface structure referring to the final grammatical utterance, after transformation. In 1970, Chomsky introduced X-bar Theory, which stipulated some universal structural relationships and offered a more visually obvious way of structurally representing semantic modification relations.

![Diagram](image)

The above tree exemplifies the most important relationships according to X-bar Theory. $X^0$ is the “head,” which branches from the “bar-level” (the prime mark is pronounced “bar”); originally it was [and sometimes still is] written as $\bar{X}$, which is an intermediate projection of $X$. XP stands for X-Phrase; it is the “maximal projection.” Since a phrase, like *the gods on Olympus*, behaves according to the category of its head (in this case the noun *gods*), the jargon of the theory says that the phrase “projects” from the head (thus the term “maximal projection”). The phrase ZP is in the “specifier” position and YP is in
the “complement” position; WP is an optional adjunct (such as an adjective or adverb), and bar-levels can be multiplied as necessary to accommodate adjuncts. As an example, consider the noun phrase just cited.

\[(2)\]

```
NP
   \[D \quad \text{the} \quad N'\]
   \[N' \quad PP\]
   \[N \quad P'\]
   \[\text{gods} \quad \text{on} \quad \text{NP}\]
   \[\quad \text{NP}\]
   \[\quad \quad \text{NP}\]
   \[\quad \quad \quad \text{N}\]
   \[\quad \quad \quad \quad \text{N}\]
   \[\quad \quad \quad \quad \quad \text{Olympus}\]
```

The determiner the lies in the specifier position of the noun phrase (NP), which is abbreviated SpecNP; the NP Olympus is the complement of the preposition on; and the prepositional phrase (PP) on Olympus has been adjoined to N. In this early theory, even non-branching levels of projection were stipulated to warrant representation.

In 1981, Chomsky published *Lectures on Government and Binding*, which established the basic form of the current theory, which focuses heavily on the cross-linguistic underpinnings of the syntax of different languages. One of the theory’s potent claims is that there exists a set of syntactic principles and parameters which all languages share. The principles are the same in every language, and the parameters account for structural differences between languages, depending on whether they are “set” one way or another. Hence the name of the framework: Principles and Parameters Theory (P&P).

In 1995, Chomsky published *The Minimalist Program*. This work, and the movement of the same name, did not propose a new theory so much as it cleaned up the old one. Most of the tenets of P&P remained in force, but the approach to generation shifted focus
from the structure itself to its lexical entities. X-bar Theory stipulated the existence of a phrase structure into which lexical items were placed; Minimalism stipulates a “bare phrase structure,” where the structuring of utterances emerges from the interactions of the lexical items themselves; this does away with extraneous bar levels by positing that structure is only generated as necessary. Though “features” and “operations” had already been part of the theory, Minimalism recast various other theoretical mechanics into these molds.

1.2.1 Syntactic operations: Merge, Move, and Adjoin

A word’s features comprise all the individual characteristics that describe its category and potential interactions with other words: “noun” and “plural” are both features, for instance, as well as more abstract characteristics like “question,” which in English triggers other words with corresponding features to rearrange themselves into the form of a question (recall the transformation mentioned above). The operations describe how the words arrange themselves, depending on what the sums of their features demand. The operation Merge combines elements into constituents, and constituents into still larger constituents. Here, A and B merge into C.

(3)  

\[ A \rightarrow B \rightarrow C \]

In an actual syntactic derivation, these operations are driven by the features of the elements. Features like “Noun,” “Preposition,” or “Verb” are categorical, and are abbreviated in standard ways: [N], [P], and [V], respectively. Some features are “uninterpretable,” meaning that they are incomplete until they enter into a ”checking” or ”Agree” relation with a certain corresponding feature. Uninterpretable features are abbreviated
with a lower-case \( u \) followed by the feature required: for instance, \([uN]\) is an uninterpretable feature that is eliminated once it is combined with a \([N]\), as in the following example.

\[
(4) \quad \text{VP} \quad \begin{array}{c}
\text{V} \\
\text{N}
\end{array} \\
\text{eats}[V,uN] \quad \text{peanuts}[N]
\]

Once the two features’ hosts are combined, we say that the uninterpretable feature is “checked” and deleted. Some features, marked with an asterisk, are “strong,” meaning that they trigger an operation called Move (or Internal Merge), which extracts an element from lower in the structure. This element then checks the strong feature.

\[
(5) \quad \text{Before Move} \\
\text{F} \quad \begin{array}{c}
\text{D} \\
\text{E}\[uW^*]\quad \text{C} \\
\text{A} \quad \text{B}[W]
\end{array}
\]

\[
(6) \quad \text{After Move} \\
\text{F} \quad \begin{array}{c}
\text{B}[W] \\
\text{D} \\
\text{E}\[uW^=} \\
\text{C} \\
\text{A} \quad \text{<B[W]>}
\end{array}
\]

In the first of these examples, we see that the element E has a strong uninterpretable feature which triggers Move to relocate the relevant feature-bearing structure B into a local relationship. After B undergoes the movement, it leaves behind a “trace,” notated as \(<B>\) (another common way to designate traces is with a lower-case \( t \)).
The third major syntactic operation is called Adjoin\(^1\). It is like Merge, except that it expands structures instead of combining them. Here, YP adjoins to XP, which only results in a larger XP.

\[
\text{(7)} \quad \begin{array}{c}
\text{XP} \\
\text{XP} \quad \text{YP}
\end{array}
\]

Adjoin is responsible for inserting modifiers like adjective and adverb phrases, which never affect the category of their hosting constituent. The example below shows only two adjuncts, but there is no syntactic limit to the number of adjuncts that can adjoin to a phrase.

\[
\text{(8)} \quad \begin{array}{c}
\text{NP} \\
\text{AP} \quad \text{NP} \\
\text{A} \quad \text{AP} \quad \text{NP} \\
\text{happy} \quad \text{A} \quad \text{N} \\
\text{little} \quad \text{trees}
\end{array}
\]

The goal of a syntactic derivation is to achieve full interpretability for a given set of lexical items by applying any and all operations demanded by the requirements of the features.

### 1.2.2 Familiar structures

In order to consolidate the previous theoretical tenets and to more fully observe how they capture real utterances, let us apply them to an English example. In the following tree diagram, we see the familiar skeleton of a simple English sentence. The main (or matrix) clause is licensed by a head labeled C, which stands for “complementizer.” This is the

\(^1\)It is a minor concern that Adjoin does not fit well in the Minimalist framework, since its optionality seems to defy the feature-driven structure building which lies at the core of Minimalism. The brief Minimalist view of Adjoin presented here comes from David Adger’s *Core Syntax: A Minimalist Approach* (2003: 112-13).
part of speech responsible for embedding clauses (e.g. *that*, *if*, etc.), and there is evidence for the existence of a null complementizer at the top of every sentence. The other novel category is represented by T, which stands for “tense” (some syntacticians use I here, which stands for “inflection”). The specifier of the tense phrase (SpecTP) is the location of the English subject. In the following tree diagram (as in all derivations), we proceed upward from the bottom: verbal arguments combine with the verb to form the VP, the VP combines with the T to form the TP, which in turn combines with the C to form the CP.

(9) John knows that Bill reads

```
(9)  John knows that Bill reads

CP
   /\         /
  C[C,uT]   TP
        /
       /
      NP   TP
     /    /
    N    T[T,uV,uN\[x\]]
   /     /
John[N] VP   VP
   /       /
   <John>  V
   /   /
knows[V,uC] CP
   /  /
   C[that[C,uT]] TP
        /
       /
      NP   TP
     /    /
    N    T[T,uV,uN\[x\]]
   /     /
Bill[N] VP   VP
   /       /
   <Bill>[N] V
   reads
```
This tree simplifies some theoretical points, but it presents a basic, conventional view of how Minimalism would treat the English sentence in question. Note that the subject of the verb originates, or is “base-generated,” in the VP and moves into SpecTP. This particular process is known as the Extended Projection Principle (EPP); it originated from the observation that all English sentences need a subject, but its breadth has increased with the discovery of similar phenomena in other languages. Now, an EPP feature is simply a strong feature which triggers movement of an element into the specifier position of whatever carries it. Let us take a slightly more advanced example, one which illustrates a common phenomenon that occurs in interrogatives: the movement of wh-words to the beginning of the sentence.

(10) who drinks milk?

Here we see the mechanics behind a simple question. As in the previous tree, the subject has to move from the VP into SpecTP in order to check a strong feature on T. But in this example, there is another strong feature on C which must be checked by an element bear-
The feature [Wh]. This is the mechanism responsible for “wh-movement,” whereby question words raise into first position. The wh-word who leaves two traces, one in its site of base-generation, and one in SpecTP.

Other notable categories include focus phrases (FocP) and topic phrases (TopP), whose heads trigger movement of elements which are to be emphasized. More detailed analyses, drawing on evidence from various languages, split the verb phrase into a so-called little-v phrase (vP) and a big-V phrase (VP), the difference being that little-v licenses an external argument (the subject) and V licenses the internal arguments. Together these form what has been termed the “v-shell” (see e.g. Larson 1988, Chomsky 1995, Kratzer 1996).

1.2.3 Syntax and its interfaces

When we diagram a structure, traces and all, we are demonstrating the construction of a mental object, which only later finds its expression in the form of speech. The set of elements before derivation was once called the Deep Structure, or D-structure, and the full object after derivation was called the Surface or S-Structure. The following diagram illustrates the arrangement of the system.

\[ \text{(11) D-structure} \]

\[ \downarrow \]

\[ 2 \text{Scholars maintain the “wh-” terminology across languages.} \]

\[ 3 \text{For those skeptical of how well these odd abstractions really capture human Syntax, examples in wh-provide some of the most convincing evidence that traces are in fact real. The phenomenon of “wanna-contraction,” whereby the collocation want to can be combined into wanna, is blocked in some dialects where the theory predicts the existence of a trace. See the following examples.} \]

(1) a. who do you want to kiss <who>?
   b. who do you wanna kiss <who>?
   c. who do you want <who> to <who> kiss you?
   d. * who do you wanna <who> kiss you?

It is important to note that to is a T head. In the last two examples, who must raise first into SpecTP, then into the main clause's SpecCP. Wanna-contraction makes (1d) ungrammatical because it does not yield a place for the second trace of who.
The diagram indicates that the D-structure undergoes derivation; once the derivation is complete, the fully interpretable syntactic object undergoes a set of processes called “Spellout,” which build its Phonological Form (PF) as well as its semantic, Logical Form (LF). PF and LF are known as interfaces, because they pass the syntactic output to different systems. All of Phonology takes place between Spellout and PF. With the advent of Minimalism, the mechanics of this system were also recast. Instead of a D-structure, the Minimalist analog of this system begins with a “Numeration,” which refers to the unordered set of morphemes from which the syntactic structure is built.

It is important to note that a numeration does not necessarily contain all the elements in a sentence. Rather, the process leading from numeration to structure occurs periodically in units called “phases.” For example, in a sentence like John knows that Bill likes peanuts, the CP that Bill likes peanuts is one phase, and John knows … is another. Many movements are possible within a phase, but there are further limitations on what can move from one phase to another; most importantly, only one element can move out of a phase, and only out of the so-called “edge” of the phase, which consists of the phase head and its specifier.

The field of Syntax often draws criticism for the abstractness of its representations and the methodology of its investigations. Regarding the first point, it is important to remember that these features and operations are only metaphors. When a syntactician speaks about a structure “transforming” or a word “moving,” she is not claiming that such a process actually occurs in the mind of the speaker; rather, these processes are only metaphors that aid in our representations of generation. To address the second point, it is easy to mistake syntactic research for baseless theorizing, because the syntactic experiments conducted to test hypotheses are so relatively simple. Having formed a hypothesis that explains
some syntactic phenomenon, the syntactician uses the hypothesis to generate phrases. If the phrase is judged grammatical by native speakers, the hypothesis has succeeded in modelling syntax. Syntactic hypotheses fail in two ways: either they “overgenerate” by predicting ungrammatical structures to be grammatical, or they “undergenerate” by predicting grammatical structures to be ungrammatical.

1.3 Syntax in the Rigveda

Vedic is a case language with a rich morphological system, much like Latin and ancient Greek (to which it is of course related), though its nouns have more cases (Instrumental and Locative, in addition to the six familiar cases of Latin) and numbers (a dual [more fully expressed than that in Greek] in addition to singular and plural), and its verbs exhibit a much wider range of inflectional possibilities. The language features clitics (particles and reduced forms of pronouns) which act as bound morphemes and can only occur to the right of a host word.

The syntax of Vedic has been studied in the western tradition ever since its importation into European academia, but until the advent of the generative movement spearheaded by Noam Chomsky in the late 1950’s, these studies were entirely descriptive and usually incorporated into detailed reference grammars which encompassed phonetics, phonology, morphology, etc., often in a philological context, but with the main goal of aiding students of the language in reading texts. The precursor to what we call the field of Syntax was in these grammars represented by excursuses on word order. Bertold Delbrück devoted only ten pages to word order in his 1888 Altindische Syntax (pp 15-25). Whitney’s Sanskrit Grammar of 1896 (primarily dedicated to Classical Sanskrit, though it offers depictions of Vedic too) is punctuated with notes on word order, each presented under the heading of a certain particle or form, only to explicate its usage. Nor did Macdonell, in his 1910
Vedic Grammar, treat word order separately, though he added a small section which did so in his 1916 abridgment, A Vedic Grammar for Students (pp 283-286). These and similar works, besides devoting little time to Vedic word order, also drew their insights not from the poetry of the Vedas, but from the prose of the Brāhmaṇas, because, as Macdonell states, “metrical considerations largely interfere with the ordinary position of words in the Samhitās” (1916:283).

The Brāhmaṇas offer us a view of later Vedic syntax, but to consider their investigation a replacement for investigating Rigvedic syntax would be akin to describing the syntax of Shakespeare’s English on the basis of current literary criticism concerning his works. The lack of a modern theoretical framework, however, has not much hindered attempts to understand the text nor to reconstruct proto-languages based on Rigvedic evidence. On the one hand, such reconstructions have traditionally focused on phonology and morphology. On the other hand, syntactic investigation can take many forms, not all of which require theoretical support, for example the usage of discourse particles or the composition of certain collocations. The purpose of applying modern theories to ancient languages is twofold: to reach a deeper understanding of the language’s mechanics, out of which further insights might be derived; and to bring another language into the purview of the theory.

There is an important caveat that we must observe in this application. For modern languages, the integrity of the theory depends on how well it explains the data, and we are careful to collect uncontaminated data. For ancient languages, our access to data is severely limited, and we must be skeptical of the data’s integrity. For instance, modern syntacticians tend to avoid poetry as a representative sample of a language, but for some ancient languages poetry is all we have. Therefore we must be prepared to call into question the data as readily as the theory.
1.4 Outline of this Work

The purpose of this work is to lay the groundwork for systematic syntactic investigations of the Rigveda. Chapter 2 will review the ideas of Hans Henrich Hock (1996) and Mark Hale (1996) concerning the syntax of the Rigvedic left periphery. I hope to show that Hock’s prosodic template account is fundamentally deficient for two reasons: first because it is not, as Hock claims, anything like successful templatic accounts for other languages; second because it does not attempt to motivate the particular arrangement of the template proposed, a task which would lend itself to a generative analysis anyway. On the other hand, Hale’s generative account explains the data adequately but does not conform well to the theory of syntax it employs. Searching for the best way to emend the account necessitates that we look into languages with phenomena similar to those of the Rigveda.

Chapter 3 will explore syntactic phenomena in other languages, where apparent similarity to Rigvedic could indicate a potential correspondence of their generative accounts. Without native speakers to consult or a deeper baseline of syntactic knowledge, the best identifiable similarities are those which manifest themselves well at the surface. These similarities include the verb-second phenomenon (V2), which parallels the rigid nature of the beginning of the Rigvedic clause, and the free word order phenomenon, which parallels the variety of word orders available in Rigvedic. Of the possible mechanisms behind free word order, one deserves special attention because of its pertinence to poetry; this is the focus of the next chapter.

Chapter 4 addresses the key issue of poetic manipulation, which resembles a language game in that special rules are consciously applied to well-formed output. After showing that well-formed output can and does change for metrical reasons in the composition of poetry, I propose a method for isolating potentially useful data within a poetic corpus by scanning each line of the work and counting the number of times each metrical pattern
occurs. Patterns which occur frequently are the most poetic lines, and therefore the least trustworthy for extracting syntactic information. Patterns which occur rarely are conversely more reliable sources of grammatical insight.

In Chapter 5 we will analyze five syntactic phenomena which manifest themselves in the ordering of words. The purpose of this chapter is to establish the integrity of the method outlined in Chapter 4 by demonstrating a confluence of evidence. If the premise of Chapter 4 is correct, then the syntactic patterns of the language should become more uniform as the frequency of the scansion pattern decreases. And, upon rearranging the words of certain verses, we should expect to discover metrical and grammatical motivations that agree with the statistical trend.

Chapter 6 mirrors Chapter 5: here we turn our attention towards a different set of phenomena, where new, metrically informed evidence of the kind tested in Chapter 5 will allow us to form a clearer picture of the language’s syntax, by allowing us to disregard the phantom grammar that results from the poetic process.

Chapters 5 and 6 are alike in their layouts and goals but distinct in their approaches. Each chapter explores individual grammatical phenomena in the Rigveda in order to develop a piecemeal account of the language’s syntax. Chapter 5 focuses on exploiting searchable sequences that identify certain grammatical patterns and finding correlations between the arrangements of those patterns and the relative frequency of the scansions they occur in. Establishing that correlation is necessary to demonstrate the efficacy of the method, but not all phenomena can be easily identified and tallied with a computerized search. Chapter 6 deals with grammatical patterns that cannot be easily searched, where rearrangement alone must provide evidence.
Chapter 7 offers suggestions and caveats concerning future research involving the method laid out in the previous chapters. Here we explore a phenomenon in Latin and one in ancient Greek as examples of the method’s application outside of Rigvedic.
Chapter 2

Previous approaches to Vedic syntax

2.1 The traditional view of Vedic syntax

The linear order of Vedic Sanskrit is basically Subject-Object-Verb (SOV), but the specifics are more difficult to pin down. In much of the available attestation for Vedic, word order tends to be distorted by the poetic nature of the text. But there is a substantial amount of prose—albeit hundreds of years younger than the Saṁhitās—from which we can more surely determine a natural linear order. Scholars long ago noticed that the ordering of elements was most strictly patterned at the beginning of the Vedic sentence, which is traditionally referred to as the “initial string” but which modern generativists would call the “left periphery.” As regards the word order of Vedic initial strings, Macdonell in his *Vedic Grammar for Students* has this to say:

(12) 191.a. The subject begins the sentence ... It may, however, be preceded by a particle like *utá* or occasionally by any other member of the sentence intended to be strongly emphasized ...
191.h. Enclitics cannot, of course, begin a sentence. If they belong to a particular word they follow it; otherwise they tend to occupy the second position in the sentence. ... _u__, _gha__, _ha__, _svi_d, which refer to the statement of the whole sentence, occupy the second (or third) position in the sentence.

191.i. Even accented particles for the most part cannot begin a sentence. They either follow the word they emphasize ... or they occupy the second position in the sentence, as emphasizing the whole statement: _aṅgā__, _āha__, _īd__, _kīla__, _khālu__, _tū__, _nū__, _vāi__, _hī_. The only particles that can begin the sentence are _āṭha__, _āpi__, _utā__; also _nā_ if it negatives the whole sentence ...

191.j. Forms of the pronoun _tá_ tend in B. to occupy the first position, especially _sā_ when it anticipates a proper name in dialogues, or _tād_ as an acc. when famous authorities are quoted ... (Macdonell 1916: 283-6)

The explanation is dense (and by modern standards convoluted), but this basically sets up a schema for the beginning of the sentence, containing a few slots which each accommodate a certain class of words. And so the grammar-book explanation gives us a template something like the following.

(13)  

(a) 1\textsuperscript{st} Position subject, focus, etc.;  
     2\textsuperscript{nd} Position _u__, _gha__, _ha__, _svi_d, etc.; predicate

(b) 1\textsuperscript{st} Position _āṭha__, _āpi__, _utā__, _nā_;  
     2\textsuperscript{nd} Position subject, focus, etc.; _u__, _gha__, _ha__, _svi_d, etc.; predicate

3\textsuperscript{rd} Position

The lists of words in these examples and in MacDonell’s text are far from comprehensive. Looking at the data, one finds that the Vedic sentence may begin with _āpi__, _āṭho__, _āṭhā__, _āḍha__, _tād__, _tāṭhā__, _tēnā__, _nū__, as well as some other less common connective words. These correspond roughly to English discourse markers like _then__, _indeed__, _therefore__, _and so__, _now__, _furthermore__, etc. Likewise, in addition to _u__, _gha__, _ha__, and _svi_d, we also find in the second or third position enclitics and the particles _hī__, _evā__, _evām__, _sma__, _vaī__, etc., which are traditionally called “asseverative particles” and usually have similarly discourse-marking values. More importantly, although they can modify verbs and certain other words, these
adverbial forms function as a class unto themselves. And so the example below, taken from the Kauśītaki Brāhmaṇa (KB), typifies the Vedic sentence according to the grammar books (all caps indicate focus on an element).

(14) KB 15.1.20

<table>
<thead>
<tr>
<th>1st Position</th>
<th>2nd Position</th>
<th>3rd Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>atho</td>
<td>dakṣiṇābhir</td>
<td>vai</td>
</tr>
<tr>
<td>so</td>
<td>gift.INS.PL</td>
<td>yajñaṇaḥ</td>
</tr>
<tr>
<td></td>
<td>FOC</td>
<td>dakṣayati</td>
</tr>
</tbody>
</table>

“so indeed he strengthens the worship with GIFTS”

The placement of certain words in second position is not unfamiliar. A similar phenomenon is observed in Germanic languages: so-called verb-second or V2, which demands that the second constituent in the sentence be the finite verb. In Vedic, although the second position (as shown in [13a]) need not be filled, it is the home of sentential modifiers and reduced forms. But the initial string seems to contain an optional position (as shown in [13b]) which, if filled, kicks the first and second positions down to second and third, respectively.

Scholars have long accepted that Vedic distinguished a special second position for particles, but found it odd that first and second positions should be demoted when a particle occurred at the beginning of the sentence. For this reason, Indo-Europeanists tend rather to fix first and second position according to the words that usually occur there, leaving an optional position at the beginning of the sentence. It has been argued by Indo-Europeanists that this optional position is a special, extra-clausal “nexus” position that accommodates certain connective particles while allowing the following clause structure to remain autonomous (Dunkel 1990, Klein 1991, Hale 1993, Hock 1996), as exemplified in the following examples from the KB and Maitrāyaṇī Saṃhitā (MS).

(15) a. KB 2.6.11
The descriptive adequacy of this schema suffices for many purposes, such as analyzing cases where habitually adjacent morphemes may combine and reduce into bound morphemes, a process known as grammaticalization. But for other purposes, such as reconstructing older syntactic patterns, there is need for a phrase-structural account.

2.2 Modern approaches to Vedic syntax

In more recent years, the syntax of Vedic has been investigated from a prosodic standpoint by Hans Henrich Hock (1996) and within the generative framework by Hale (1996). Both works concern themselves chiefly with explaining the placement of clitics, both consequently venturing to explain the structure of the Vedic left periphery. To avoid confusion, please note that both works appeared in the same volume and each responds to the other.
2.2.1 Hock’s prosodic template

Hock begins his exposition by rejecting the notion that clitic placement must be a syntactic phenomenon. He cites work done on clitic strings in Pashto and Serbo-Croatian, where clitics, diverse in their functions, seem to crowd together into a single syntactic position. To show how the orders of these clitics are best accounted for with morphophonological templates, Hock provides the following for consideration.


\[ li \text{ Aux/Cop. } D \text{ A/G } se \text{ je} \]

where:

- \( li \) = yes/no question particle
- \( \text{Aux/Cop.} \) = Auxiliary or copula
- \( D \) = dative pronoun
- \( \text{A/G} \) = accusative/genitive pronoun clitic, except reflexive \( se \)
- \( se \) = “reflexive” accusative/genitive clitic
- \( je \) = 3sg.pr. of the verb “to be”

b. Pashto P2 clitic string template (Hock 1996: 212):

\[ xo \text{ ba am am me/mo de ye no} \]

where:

- \( xo \) = discourse particle (“indeed, really, of course”)
- \( ba \) = modal (“will, might, must, should, may”)
- \( am \) = first and second plural pronoun
- \( me \) = first singular possessive pronoun
- \( mo \) = first and second plural pronoun
- \( de \) = modal (“should, had better, let”) AND second singular clitic pronoun
- \( ye \) = third person singular/plural pronoun
- \( no \) = discourse particle (“then”)

The takeaway here is that a fully syntactic approach could not account for the ordering of these clitic strings: some positions refer to categories, while others accommodate individual clitics, some of which properly belong to categories elsewhere accommodated.
Furthermore these strings are sensitive to phonological constraints: Serbo-Croatian, for instance, does not allow a string to contain two clitics that are homophonous, even though their functions may differ greatly.

Modeling his approach after the foregoing examples, Hock applies the idea of the morphophonological template to the Vedic initial string. His original template is as follows (though I have paraphrased the last sentence).

(17) Hock’s 1989 Vedic initial strings template (Hock 1996: 215)

```
“NEXUS”  1  2  3  4  5
átho  Ā  P  Č  E  Ď
sá  Ď  u  tů  naḥ
tád  sma  vař  enam
Č  ha  ...  ...
...  [RV: Ď]
```

where:

- NEXUS = Quasi-conjunctive elements such as Ved. Pr. átho
- Č = accented sentential particle
- P = unaccented sentential particle
- Ď = accented deictic (including demonstrative tád, etád, relative yá-, interrogative ká-, etc.); in the Rīg-Veda this category includes preposition/adverbs (always accented)
- E = unaccented pronominal (both deictic and personal)
- Ā = other accented elements

All positions except Position 1 are optional, and likewise all positions except Position 1 can be doubled.

Because of the optionality of most positions and their ability to double, few examples in the data conform exactly to the template as it is presented. Consider the following examples (Hock’s examples\(^1\) [12a-d] [1996: 215-16]).

\(^1\)The glosses of cited examples have been recast according to the Leipzig glossing rules. Original authors’ translations have not been altered.
(18)  a. KS 23.2
          ádanti ha sma vā etāsya purāṇnam
          Ĥ P P Ĥ Ĥ
          1 2 2 3 4
          eat.3PL PCLE PCLE PCLE he.GEN.SG earlier.food.ACC.SG
          “They eat his earlier food.” (PCLE = particle)

b. RV 1.186.7a
          utā na īm matāyó
          Ĥ E E
          1 4 4
          & we.GEN.PL he.ACC.SG thought.NOM.PL
          ’śvayogāḥ ... rihanti
          horse.yoked.NOM.PL ... lick.3PL
          “And our thoughts, yoked like horses, lick him ...”

c. RV 1.186.9a
          prā nú yād eśām
          Đ P RP E
          1 3 3 4
          forth Pcle when they.GEN.PL
          mahinā cikitré
greatness.INS.SG be.visible.PERF.3PL
          “When they have become visible in their greatness ...”

d. MS 3.3.10
          daivim ca vāvā asmā etād
          Ĥ P P Ĥ Ĥ
          1 2 3 4 5
          divine.ACC.SG &[Pcle] Pcle he.DAT.SG then
          vīśam mānuśiṁ ca ānuvartamānau karoti
          tribe.ACC.SG human.ACC.SG &[Pcle] subservient.ACC.DU make.3SG
          “He then makes both the divine tribe and the human one subservient to him.”

  2Hock’s example refers to this line as RV 1.186.9b.
  3I have added the position numbers to this example and emended a typo in ānuvartamānau.
Observe that in (18d), when all positions (the nexus excepted) are filled, the pattern of accented and unaccented words alternates. Hock claims that “the evidence of accent alternation supports the view that the template must be accounted for in the Phonological Form (PF), since alternating accentuation is a frequent target of phonological rules” (1996: 220).

But Hock also noticed differences between the initial strings of Vedic prose and those found in the Rigveda; in particular the placement of non-initial “Dé” elements in the Rigveda is more common in Position 3 than it is in 5. To incorporate these and the several other notes formally into the representation of his template, Hock offers the following reformulation.

(19) Reformulation of the 1989 template:

\[
\begin{array}{c|c|c|c|c|c}
\text{“NEXUS”} & 1 & 2 & 3 & 4 & 5 \\
\hline
\{ \dot{D} \} & (P) & \{ \acute{P} \} & (E) & (\dot{D}) \\
\{ \check{X} \} & & & & \\
\end{array}
\]

Here, the curly brackets indicate that Position 1 does not permit doubling. Parentheses indicate the possibility of doubling. Angled brackets indicate that the enclosed pertains to the Rigveda only.

2.2.2 Problems with Hock’s account

Hock’s templatic account runs into several theoretical issues. He concedes that the alternating prosodic pattern of the template is not necessarily realized, “even in ‘well-behaved’ strings, since doubling can introduce several accented or unaccented elements in the same position and since at the same time any string-internal position may remain unfilled” (Hock 1996:227). Thus the prosodic pattern only holds for the template itself. Even so,
it is obvious that clitics, which cannot bear accent, must be incorporated into a prosodic word containing some accented element; so it is easy to see how the very existence of clitics lends itself to the alternating accent pattern which Hock describes. But the pattern itself must also be called into question. According to the literature (Chomsky and Halle 1968:77-9, Kager 1999:142-90), the tendency for accent alternation works at the level of morae, syllables, or feet. To posit, as Hock does, that words with lexical accent alternate with lexically unaccented words is an entirely different sort of claim. Since Hock imagines the template as a filter applied between Spellout and PF, we might assume that the filter passes the form along to the phonology, thus exempting the template from adherence to well-attested phonological principles. But this excuse would only indict the template as unprecedented. As Hock himself notes, Zwicky has said that “a quasi-morphological template with alternating accent would be highly unusual” (1996: 228). Given the weakness of the accent alternation argument, it is best ignored.

Another issue with Hock’s account is that, contrary to expectation, it makes no attempt to account for the ordering of clitics. For instance, it is interesting that we find (in the later language) the sequences u ha, ha sma, and even u ha sma, but never *u sma, *ha u, *sma ha, etc. Although this idiosyncratic clitic behavior seems like the kind of place best suited for a templatic approach, Hock only says that some positions in the template “permit doubling.” The omission throws into sharp relief the way Hock’s template differs from the accounts on which he bases his method. The Vedic template is not prepared to account for the order of contiguous clitics, which is the sole function of the Serbo-Croatian and

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4Note also that a templatic approach accounting for these three attested combinations could not follow quite the same combinatorial logic as the template Hock presents. In KB, for instance, u and ha (but not sma) occur in isolation and none is obligatory, so only a template with nesting can capture the situation. In TS, on the other hand, all three occur in isolation, but u never cooccurs with ha or sma, so only a template denoting exclusivity (here, with a slash) can obtain. In RV, each occurs in isolation, and none combine.

(1) KB: (u) (ha (sma))
(2) TS: (u) / ((ha) (sma))
(3) RV: (u) / (ha) / (sma)
Pashto templates cited. Rather, the Vedic template attempts to account for the order of categories that are both syntactically and morphologically distinct. Hock’s analysis, under scrutiny, becomes indistinguishable from a rudimentary syntactic account. Furthermore the rough nature of this effectively syntactic account offers little more than description. Without any established theoretical backing, we are hard pressed to derive predictions from the templatic account that can be evinced elsewhere in the language. That is: even if the templatic account is flawless, it simply does not explain enough to be considered a final word on the matter.

It is also worth noting that, even if this template reflects the reality of the situation and the form given by Hock is correct, it still does not explain how the language arrived at that particular form. Hock counts as an advantage to his type of approach that it “naturally accommodates some of the more idiosyncratic features of clitic strings, such as the fact that syntactically and functionally similar elements may appear in very different string positions.” A template may accommodate such facts, but it cannot explain them. A different combination of the same templatic elements could yield the same prosodic pattern: Position 2 and Position 4 could be exchanged, as could Positions 1, 3, and 5. If the template is a synchronic reality, then there must also be a diachronic explanation for its form, which would in turn require a more comprehensive synchronic approach.

Mark Hale calls Hock’s template “unabashedly stipulative” and critiques the approach for disregarding syntactic structure altogether (1996: 169). This criticism is (only) irrelevant within the bounds of Hock’s argument, since he claims that the template is applied “in a post-syntactic component of ‘PF’” (1996: 213), thus allowing it to sweep away previous syntactic derivation. However, Hale’s criticism obtains at the level of methodology, in answer to which he offers his own generative account.
2.3 Hale’s generative account

Hale’s work is based around refuting Hock’s prosodic template approach to explaining the Vedic initial string. Hale’s proposed structure, shown in (20), is basically a structural reformulation of Hock’s template; both are based on straightforward observations of attested word orders in the Rigveda.

(20)

For instance, Hale justifies the position of (the provisionally labeled) TopP by observing that topicalized material occurs to the left of everything, including complementizers and wh-moved elements, as in the following examples (Hale’s examples [4] and [7] [1996: 169-70]).

(21) RV 4.12.2a

idhmāṃ yās te jabhārac chaśramāṇāḥ
kindling.ACC.SG REL.NOM.SG you.CL bore.3SG exerting.himself.NOM.SG
“who, exerting himself, bore the kindling to you” (CL = clitic)

(22) RV 10.114.7c
áṇānaṃ tirthāṃ kā ihá prá vocat
attained.ACC.SG course.ACC.SG who.NOM.SG here forth speak.3SG
“who can proclaim here the attained course?”

To the right of CP, Hale notes the occurrence of accented deictics which seem to indicate the existence of some functional projection. Although not entirely comfortable with the label, he identifies this projection as FocP.

Hale goes on to show how this structure can account for data which Hock’s template cannot; he provides the following examples (Hale’s [22] and [24] [1996: 185]) to showcase its explanatory power.

(23) RV 1.110.2a
ābhogāyam prá yād ichánta aítana
nourishment.ACC.SG forth when seeking.NOM.PL go.prf.2PL
“when, seeking nourishment, you went forth …”

(24) RV 7.103.2a
divyā āpo abhí yād enam áyan
divine.NOM.PL water.NOM.PL around when he.ACC.SG.CL come.impf.3PL
“when the divine waters encircled him”

Unless Hock’s Position 1 can be doubled (which he says cannot happen), the initial string elements in these examples are out of position.

2.3.1 Problems with Hale’s account

Although Hale’s structure seems to attain descriptive adequacy, it runs into a number of theoretical problems.
The Adjunct Island Constraint

Hale offers the following diagram for the line in (23) (1996: 186). I have added the traces in order to show the movements necessary for deriving the structure.

\( (25) \)

It is clear that in order for ābhogáyam to occupy SpecTopP, it must have originated within the embedded CP. But the meaning of yád here is ‘when’; and the following lines show that the CP in this structure is an adjunct to the matrix clause.

5Hale gives the following in a footnote to this diagram: “I have simplified the tree somewhat in the following ways: I have not indicated the “traces” left by moved constituents (thus the subject NP, ābhogáyam ichánta has moved out of the SPEC, VP slot and in addition ābhogáyam has moved out of the subject-NP into the SPEC,TopP position) and I have chosen not to show verb movement to I, although it is possible that it took place in this clause (it would, of course, be string-vacuous).”
RV 1.110.2
ābhogāyam prá yád ichánta aítana / ápākāḥ práñco máma ké cid āpáyah
“when, seeking nourishment, you went forward, crafty ones, as some kind of friends of mine,”

saúdhanvanásaś caritásya bhūmánā / ágachata savitúr dāsúso gṛhám
“sons of Sudhanvan, after long journeying, you came to the home of liberal Savitar”

But if the CP in question is functioning as an adjunct, then it ought to be impossible to move anything out of it, since this would cause a violation similar to those in the starred English examples below.

(27)  a. Johnny laughed when the dog chased the cat
    b. * what, did Johnny laugh when the dog chased t,?
    c. * THE CAT, Johnny laughed when the dog chased t, 

Whether it be caused by wh-movement or focus-fronting, any movement out of the embedded CP of (27a) causes ungrammaticality. Cross-linguistic observations of this sort have prompted the formulation of the Adjunct Island Constraint (restated below).

(28) Adjunct Island Constraint

Nothing can move out of an adjunct.

Hale’s account predicts structures that violate this principle, in large part because it is based on observations of structures that appear to violate it grammatically. Either the Adjunct Island Constraint does not apply in the Rigveda, or Hale’s account needs to be revised in some way.

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6Most notably by Ross [1967], who coined the term “island” to describe any phrase out of which elements cannot be moved grammatically.
The Adjunction Prohibition

Another theoretical problem with Hale’s account stems from his treatment of the lexical category exemplified by *prá* in (23), repeated here for convenience.

(23) RV 1.110.2a

ābhogāyam prā yád ichánta aítana
nourishment.ACC.SG forth when seeking.NOM.PL go.PRF.2PL

“when, seeking nourishment, you went forth …”

Although presented parenthetically, his assumptions regarding the nature of preverbs have significant bearing on the accuracy of his entire analysis.

Hale analyzes preverbs occurring left of relatives to be adjoined to the CP, which is not a problem for the clause given in (23). But he posits the same structure for all CPs, regardless of other properties.

(29) RV 8.101.3ab

prá yó vām mitrāvaruṇā / ajiró
forth REL.NOM.SG you.VOC.DU.CL Mitra.Varuṇa.VOC.DU swift.NOM.SG
dūtó ádravat
messenger.NOM.SG run.IMPF.3SG

“which swift messenger ran forth to you two, O Mitra and Varuṇa”

In the example above (Hale’s example [19]), *prá* is analyzed as it is in (25), as an adjunct to a CP. However, this CP is functioning as an argument (here, the subject), which means it has been semantically selected (s-selected) by a lexical head (the verb). In English, it is impossible for anything to adjoin to an s-selected CP, as the following examples demonstrate.

(30) a. when you go to Italy, who do you visit?
b. * I like [[when you go to Italy] [who you visit]]
c. tomorrow, what will Bill eat?
d. * I know [[tomorrow] [what Bill will eat]]

In (30a), the CP *who do you visit* is not being s-selected, because it is the main clause. However in (30b), *who you visit* is being s-selected by the verb *like*. This difference in grammaticality is captured by a (supposedly universal) law known as the Adjunction Prohibition (Chomsky 1986: 6, McCloskey 2006).

(31) Adjunction Prohibition

Adjunction to a phrase s-selected by a lexical head is ungrammatical

(30a) allows the adjunction of the CP *when you go to Italy* because the CP *who do you visit* is the main clause and is therefore not s-selected by any lexical head, as it is in (30b). This prohibition, however, also predicts that (29) should be ungrammatical, if indeed *prá* should be analyzed as an adjunct. Therefore it is likely that the equation of preverbs with adverbs cannot stand (for which I hope to give further evidence in the following section), an insight which will require extensive reworking of Hale’s model.

Preverbs

Hale makes brief mention of the category of *prá*, noting that such an element is “normally referred to in the Indo-Europeanist literature as a ‘preverb’ …I take these elements to be adverbs (or PPs with null objects in adverbial function) and to have the distributional

\[7\] We expect right-adjunction to the CP to be equally ungrammatical, but it is difficult to demonstrate this through example. The sentence *I know what Bill will eat tomorrow* succeeds because *tomorrow* parses as an adjunct to the verb *eat*. The grammatical reading blocks the ungrammatical one.

(1) I know what Bill [[will eat] [tomorrow]]
(2) * I know [[what Bill will eat] [tomorrow]]
range of adverbs ...” (Hale 1996: 184). But in that case it is unclear why, in example (23), prá should be adjoined to the CP but construed only with the finite verb. We would expect the scope of an adverb to match the level at which it adjoins. The paradox is especially acute in (23), because the intervening participle ichánta is also perfectly capable of collocating with prá. However, the fact that preverbs lose their accent and are not separable when combined with participles, infinitives, and gerunds (Whitney 1896: 1085) allows one to reliably construe prá with aítana, but at the same time challenges Hale’s assumption that preverbs “have the distributional range of adverbs.”

Furthermore, collocations of preverb + verb closely resemble those of English verb + particle in their observed semantic effects. Just as English blow up is not intelligible as the semantic addition of [BLOW] and [UP], neither are the meanings of Vedic preverb + verb combinations completely intelligible by combining their meanings. Consider the following selection from the definition of vac ‘speak’ in Grassman’s Wörterbuch zum Rigveda (1873: 1191).

(32) vac [Cu. 620], 1) reden, sprechen …

Mit ácha 1) jemand, etwas [A.] für einen andern [D.] oder für sich selbst (med.) herbeirufen; 2) jemand [A.] anrufen, begrüszen ...
ádhi für jemand [D.] fürsprechen, fürsorgen ...
úpa 1) jemand [A.] ermuntern, antreiben ...
prá 1) etwas [A.] verkünden, kund machen, auch 2) mit direkter oder indirekter Rede; 3) Loblied [A.] aussprechen; 4) jemand oder etwas [A.] preisen ...

It is clear that these elements, however they should be treated, ought not to be classified along with adverbs, which do not exhibit similar behavior.
The Phase-Impenetrability Condition

Given the arguments put forth in the previous sections, it seems imperative that we repair Hale's analysis by not treating preverbs as adjuncts to CP. But if a preverb cannot be adjoined at CP, then it must have originated within the CP and been subsequently moved. Now we are left to determine where in the structure the preverb has been moved to. SpecCP could be the landing site, but in a line like (23), where both a preverb and a focused element occur to the left of the complementizer, the filling of SpecCP should make it ungrammatical to extract anything else. This is because the CP constitutes a phase. According to the theory, derivations occur not sentence by sentence, but phase by phase. In order for an element to move from a lower phase into a higher one, it must occupy the phase’s edge, which (in the case of a CP phase) comprises SpecCP, C, and any adjuncts to CP. The Phase-Impenetrability Condition (PIC) formalizes this.

(33) Phase-Impenetrability Condition (Chomsky 2001: 13):

In a phase HP with head H, the domain of H is not accessible to operations outside HP, only H and its edge are accessible to such operations.

Since CPs are posited universally to be phases, the PIC basically says that SpecCP acts as an “escape hatch,” which is the only path by which material can leave the CP. In languages like English, this condition helps account for the long-distance movement of embedded wh- words.

(34) \[ [CP \text{ what}_i \text{ did you say } [CP \text{ t}_i \text{ that Bob thought } [CP \text{ t}_i \text{ John should give } t_i \text{ to Mary?}]]] \]
In the example above, the wh-word is able to move from its site of base-generation by hopping from one SpecCP to the next, a phenomenon known as “successive cyclicity.” Since the traces of the word fill the lower specifier positions, nothing else can occupy them, which accounts for the English bans on things like multiple-wh movement and the cooccurrence of wh-movement with focus or topicalization.

\[
\begin{align*}
(35) & \quad * \left[ \topP_j \rightarrow \text{Mary}_j \left[ \text{CP} \ what_i \ did \ you \ say \ [\text{CP} \ t_i \ that \ Bob \ thought \ [\text{CP} \ t_j \ John \ should \ give \ t_i \ t_j \?]] \right] \right] \\
(36) & \quad \left[ \text{CP} \ what_i \ did \ you \ say \ [\text{CP} \ t_i \ that \ Bob \ thought \ [\text{CP} \ t_j \ John \ should \ give \ t_i \ to \ whom\?]\right] ] \\
(37) & \quad \left[ \text{CP} \ to \ whom_i \ did \ you \ say \ [\text{CP} \ t_i \ that \ Bob \ thought \ [\text{CP} \ t_j \ John \ should \ give \ what \ t_i \ ?]] \right] \\
(38) & \quad * \left[ \text{CP} \ to \ whom_j \ what_i \ did \ you \ say \ [\text{CP} \ t_i \ that \ Bob \ thought \ [\text{CP} \ t_j \ John \ should \ give \ t_i \ t_j \?]] \right]
\end{align*}
\]

It is crucial to Hale’s analysis that ābhogáyam in (23) move through SpecCP on its way to SpecTopP. But if the escape hatch is blocked by a preverb, then this movement should be impossible. It is tempting to assert that in Rigvedic, CP is not a phase, that TopP is, and that the escape hatch function properly belongs to SpecTopP. Such a move would be premature, though, since the integrity of our poetic data is hardly sound enough to warrant overturning universals without a good deal more evidence. There are, however, some workable repairs (such as admitting multiple specifiers) which we will address in the following chapter.

2.4 A most puzzling phenomenon

Up to this point, I have only focused on Hale’s difficulty in explaining (23). However, the criticisms expressed in the previous section are not unique to Hale’s approach. Indeed it is the verse itself which seems to violate theoretical principles such as the PIC. Nor is it an isolated occurrence. I have found 8 verses where an element properly belonging to
the embedded CP occurs to the left of a preverb that also belongs to that CP: 9.73.6a, 1.110.2a, 1.161.3a, 5.32.1c, 6.15.14c, 5.15.2d, 7.103.2a, 10.123.8a. Let us take each example in turn.

(39) RV 9.73.6a

pratnā́n mā́nād ádhi ā́ yé samásvaraṇ
ancient.ABL.SG building.ABL.SG out.of to REL.NOM.PL together.sound.IMPF.3PL

“they who sounded together out of the ancient building”

In this example, the adpositional phrase pratnā́n mā́nād ádhi properly belongs with the embedded verb ásvaraṇ and seems to have violated the Adjunction Prohibition by moving across the relative pronoun yé. Furthermore the verb is combining with two preverbs: sam and ā, one of which is occupying the position directly left of the relative, which should also prohibit pratnā́n mā́nād ádhi from moving to its observed location.

(40) RV 1.161.3a

agnīṃ dūtām práti yád ábravītana
Agni.ACC.SG messenger.ACC.SG back REL.ACC.SG speak.IMPF.2PL

“what you replied to the messenger Agni”

This example incurs the same violations as the previous. The argument agnīṃ dūtāṃ has been illegally moved out of the embedded CP, even across the preverb práti which is blocking the escape hatch.

(41) RV 5.15.2d

jātaír ájātāṁ abhī yé nanakṣūḥ
born.INS.PL unborn.ACC.PL to REL.NOM.PL approached.PRF.3PL

“they who have attained the unborn through the born”
Once again, this example incurs the same violations though in greater number, since ājātāṁ is an argument of the verb and jātaír is not, thus making them separate constituents. It appears then, that this example contains three separate elements to the left of the relative.

(42) RV 5.32.1c

mahā́ntam indra párvatam ví yád váḥ
great.ACC.SG Indra.VOC.SG mountain.ACC.SG apart when open.2SG

“when, O Indra, you opened up the great mountain”

In this example, it is the Adjunct Island Constraint which is violated by the movement of mahā́ntam párvatam out of the CP, though again we see the added difficulty of having a preverb, here ví, blocking the escape hatch.

(43) RV 6.15.14c

ṛ́tā́ yajāsi mahinā́ ví yád bhú́r
truth.ACC.PL offer.SUBJ.2SG might.INS.SG away when be.2SG

“you will offer truths when you have become manifest with your greatness?”

(44) RV 7.103.2a

divyá́ ā́po abhí yád enam á́yan
heavenly.NOM.PL water.NOM.PL to when he.ACC.SG come.IMPF.3PL

“when the heavenly waters came to him”

(45) RV 10.123.8a

drapsá̄ḥ samudrá́m abhí yá́ jígā́ti
drop.NOM.SG sea.ACC.SG to when go.3SG

“when the drop goes to the sea”

As in (42), these three lines appear to violate the Adjunct Island Constraint, because in each one an element has been moved out of an adjoined CP. And each one also contains a preverb in a position which ought to block that CP’s escape hatch in any case.
Rigvedic syntax does not seem to conform to the theory, as these examples make apparent. Therefore it is with these most troublesome verses in mind that we ought to approach the task of investigating the language. Any analysis of Rigvedic syntax must account for this phenomenon.

2.5 Conclusion

In this chapter I hope to have shown that Hock’s and Hale’s accounts contain several theoretical complications which stifle their explanatory power beyond the level of descriptive adequacy. Hock’s prosodic template, insofar as it treats syntactic phenomena, cannot replace a generative approach, and Hale’s generative treatment (i.) violates the Adjunct Island Constraint, (ii.) violates the Adjunction Prohibition, and (iii.) relies on a misrepresentation of the category of preverb in order not to (iv.) violate the Phase-Impenetrability Condition. Nor does it seem that any small amount of tweaking can remedy these conflicts, since the verses themselves appear to violate supposedly universal constraints. As I have mentioned before, Hale’s proposed structures are based on straightforward observations and appear (even despite their theoretical complications) to achieve descriptive adequacy. And regardless of our ability to explain them, we cannot dismiss the phenomena attested in the text without cause. In order to arrive at a more theoretically sound account of the data, I shall now turn to some work done in other languages, which might be brought to bear on the situation in Vedic.
Chapter 3

Parallels in other languages

In the search to reconcile the data from the Rigveda with theoretical explanations of modern (and thus more comprehensive) data, it benefits us to look for parallels in other languages. If one of our difficult problems with the text has already been solved elsewhere, we need only match up that explanation with Rigvedic examples and see how well it fits.

These problems, to summarize Chapter 1, are all generally word order problems. We observe discontinuous constituents, apparent island violations, and a certain degree of variability in the positions of Subject, Object, and Verb. Nevertheless the initial string or left periphery of the Rigvedic CP appears to be more rigid in its formulation, which allowed earlier grammarians to assign numbered positions to its composition (see Chapter 2).
In this chapter, I will briefly examine work done on verb-second and free word order phenomena, ending each look with a comparison to examples from the Rigveda. Finally I will argue that not all these approaches are equally effective. Although several explanations appear to warrant further investigation, the final possibility explored— that of post-syntactic reordering— requires more immediate attention.

3.1 Germanic V2

The rigidity of the Vedic initial string vaguely resembles that of the Germanic verb-second phenomenon (V2), since both involve the strict ordering of elements near the beginning of the clause. The German sentence has traditionally been analyzed as a sequence of positions, into which different kinds of elements may fit. The first position is the Vorfeld, “fore-field,” which can host sentential adverbs or elements moved from lower in the clause. After the Vorfeld, the bulk of the sentence’s material is included in the Satzklammer, “sentence frame.” The Satzklammer begins with the finite verb, ends with the non-finite verb if there is one, and sandwiches the Mittelfeld, “middle-field,” in between. The initial positions of Vedic are numbered.

(46) a. rātryā u hi śīrṣant satyam vadati
night also indeed head truth speaks
“also indeed by night he speaks truth in his head” (KB 2.6.11)

<table>
<thead>
<tr>
<th>1st Position</th>
<th>2nd Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vorfeld</td>
<td>Finite Verb</td>
</tr>
<tr>
<td>Mittelfeld</td>
<td>Non-finite Verb</td>
</tr>
</tbody>
</table>

b. den Hans wird Maria morgen treffen
the Hans will Mary tomorrow meet
“tomorrow Mary will meet Hans” (Frey 2006: 235)
As this example demonstrates, in Vedic, second position contains a subset of the language’s particles; in German, it contains the finite verb. It is possible that the mechanisms underlying these surface phenomena are similar, so explanations of Germanic V2 may yield some insight into the workings of Vedic CPs.

### 3.1.1 V2 as CP recursion

One of the most popular (pre-Rizzi 1997) explanations for V2 is that the finite verb moves from V to T, then from T to C, with the Vorfeld corresponding to SpecCP. Obviously the verb cannot move into C if there is an overt element occupying it, which explains why in German, V2 does not occur in embedded clauses. The difference is illustrated in the following examples.

(47)  a. V2 observed in main clause

\[
\begin{array}{l}
\left[CP \quad \text{den} \quad \text{Hans} \quad \left[C' \quad \text{wird}_1 \quad [TP \quad \text{Maria} \quad \text{morgen} \right. \\
\quad \text{the.ACC.SG} \quad \text{Hans.ACC.SG} \quad \text{will} \quad \text{Mary.NOM.SG} \quad \text{tomorrow} \\
\quad \text{treffen} \quad t_1 \quad ] \quad ] \\
\text{meet.INF} \\
\text{“tomorrow Mary will meet Hans”}
\end{array}
\]

b. no V2 observed in embedded clause

\[
\begin{array}{l}
\left[CP \quad \text{dass} \quad [TP \quad \text{Maria} \quad \text{morgen} \quad \text{den} \quad \text{Hans} \quad \text{treffen} \right. \\
\quad \text{that.c} \quad \text{Mary[NOM.SG]} \quad \text{tomorrow} \quad \text{the.ACC.SG} \quad \text{Hans.ACC.SG} \quad \text{meet.INF} \\
\quad \text{wird}_1 \quad ] \quad ] \\
\text{will} \\
\text{“that tomorrow Mary will meet Hans”}
\end{array}
\]

In the main clause, the auxiliary verb \textit{wird} moves into C; in the embedded clause, C is already occupied by the complementizer \textit{dass}, so that \textit{wird} cannot move.
This approach does not work equally well for all Germanic languages. In Danish, Icelandic, Yiddish, and others, the account breaks down when applied to embedded clauses, because these languages also exhibit V2 there. Many researchers, including Vikner (1995), deHaan & Weerman (1986: 86), Holmberg (1986: 110), Platzack (1986: 225), and Authier (1992) resolve the issue of embedded V2 by positing CP-recursion.

(48) Danish

vi ved [\(CP\) at \[\(CP\) denne bog har Bo ikke læst ] ]

we know that.c this book has Bo not read

“we know that Bo has not read this book” (Vikner 1995: 67)

But the idea of CP-recursion in general is supported by the occurrence of complementizer stacking elsewhere, like in Dutch.

(49) Dutch

welk boek of / dat / of-dat Jan gelezen heeft

which book if / that / if-that John read has

“which book John read”

Here we see that the sentence remains grammatical whether the complementizer be of, dat, or both of them together as of dat. Vedic does not exhibit any such overt stacking of complementizers, but the mere fact that they are possible in an Indo-European language should lend some credence to an account positing CP-recursion in Vedic. Therefore let us apply the idea to the troublesome example (23) from Chapter 2.

(50) \[\(CP\) ābhogāyam \[\(C_1\) ∅ \[\(CP\) prá \[\(C_2\) yád ichánta

nourishment.ACC.SG NULL.C₁ forth \[\(C_2\) yád when.C₂ seeking.NOM.PL

aītana go.PRF.2PL

“when, seeking nourishment, you went forth ...”
This yields us a Spec position for each element left of yád, but it violates the PIC because, with SpecCP₂ being filled by prá, ābhogáyam should not be able to be extracted. Taking prá as an adjunct to CP₂ would no longer violate the Adjunction Prohibition, since it is C₁ that will have been s-selected; agreement could be invoked (probably not without complication) to explain the morphological marking of C₂, but the scopal incongruity of adjoining preverbs at CP would stand.

It is clear that CP-recursion alone cannot explain what is going on here. But if we could take the CP₂ from (50) as something less than a phase, perhaps a “weak phase” or an XP with properties different from those of a normal CP, then these issues could all be resolved. But in order to explore the nature of this hypothetical category, and to determine whether it is the right path to follow, I will now turn to some work by Werner Frey (2006).

### 3.1.2 Frey’s approach to V2

Werner Frey’s (2006) account of V2 in German borrows the ideas of structural incorporation of topic and focus, as well as the FinP projection, from Rizzi’s (1997) cartographic approach. He argues for a German left periphery (which he refers to more specifically as the “C-domain”) of the following shape.

(51) Frey’s model of the German left periphery (2006: 254)
In the above structure, SpecKontrP hosts material associated with contrastive focus and SpecFinP can host material moved out of the Mittelfeld to check a pure Extended Projection Principle (EPP) feature (Frey calls this “formal movement” (FM), and chooses Rizzi’s FinP because it is not associated with a particular pragmatic interpretation). Since German only allows one element to occur before the finite verb, Frey posits a ban on multiple EPP features, and goes on to argue that the German Vorfeld can be filled in three different ways depending on what EPP feature the C-domain contains: by base-generation of sentential adverbs, via FM, or by focus fronting, as in the following examples (Frey’s examples [18c] [2006: 243], [43], and [45] [2006: 255], respectively).

(52)  a. base-generation

\[ CP \text{ Kein Wunder } [C^\prime \text{ spricht}_1 [TP \text{ Peter so gut Französisch } t_1] ] ] \]

“no wonder Peter speaks French so well”

b. formal movement

\[ FinP \text{ leider}_1 [Fin' \text{ hat}_2 [TP \text{ keiner dem alten Mann geholfen } t_1] [TP \text{ has nobody the old man helped } t_2] ] ] \]
“unfortunately nobody has helped the old man”

c. focus fronting

\[ [KontrP \text{ den Max}_1 [Kontr' \text{ meint}_2 \text{ Eva } [CP \text{ t}',_1 \text{ dass } [TP \text{ t}',_1 \text{ der Chef t}_1 \text{ mitnehmen sollte } ] ] t_2 ] ] ] \]

to take with

“MAX, Eva thinks that the boss should take along”

Now suppose that, in applying Frey’s approach to Rigvedic, we remove his prohibition against multiple EPP features. Consider the following possibilities.

(53) a. \[ [KontrP \text{ ābhogāyam}_1 [Kontr' \emptyset [FinP \text{ prá}_2 [Fin' \text{ yād } [TP t_1 \text{ ichánta t}_2 \text{ aítana } ] ] ] ] ] \]

b. \[ [CP \text{ ābhogāyam}_1 [C' \emptyset [FinP \text{ prá}_2 [Fin' \text{ yād } [TP t_1 \text{ ichánta t}_2 \text{ aítana } ] ] ] ] ] \]

In both options, we must posit an EPP feature on the null head which causes ābhogāyam to move; in (53a) this would also require a contrastive reading of ābhogāyam. More interesting, however, is that prá and yād end up in FinP, the nature of which complements these elements nicely. Rizzi conceives of the C-domain as a “complementizer system,” the top of which faces outward, giving the clause characteristics like question, declarative, relative, etc. The bottom faces inward, characterizing the TP below, hence the name “Finiteness Phrase” (Rizzi 1997: 283). Therefore it is reasonable to propose (at least preliminarily) that yād here is not a complementizer but a Fin° head working in concert with a null complementizer, and that this Fin° contains an EPP feature that can be checked by whatever category preverbs happen to be.
At this point we have altered Frey’s proposal to more closely resemble Rizzi’s, and we must ask ourselves whether it is not better just to adopt Rizzi’s structure for Vedic. Besides identifying complementizers like *yád* with Fin° heads, this would require the adoption of a Force Phrase (ForceP), whose head selects the clause type, two Topic Phrases (TopP), and a Focus Phrase (FocP), arranged thus, where the asterisk indicates that each TopP can undergo recursion.

\[
\text{(54) }
\begin{array}{c}
\text{ForceP} \\
\text{Force'} \\
\text{TopP}^* \\
\text{Top'} \\
\text{FocP} \\
\text{Foc'} \\
\text{TopP}^* \\
\text{Top'} \\
\text{FinP}
\end{array}
\]

As far as our previous examples go, the main difference here is the name of the labels: it is now a Top° head responsible for the movement of *ābhogāyam*.

\[
\text{(55) } [\text{Top}_P \text{ābhogāyam}_1 [\text{Top}' \ominus [\text{Fin}_P \text{prá}_2 [\text{Fin}' yád [TP t_1 ichánta t_2 aítana ] ] ] ] ] ]
\]

The alterations to Frey’s structure, as well as the adoption of Rizzi’s structure, may work well for the example given, where *yád* is easily classified as a complementizer or a Fin° head, but neither can explain instances involving an inflected relative in *yá*-, as in the following example.
“those who sang together towards the golden womb”

Here we expect ye to have moved into a specifier position from where it is base-generated inside the v-shell. Under any version of Frey’s analysis, this leaves the phrase háriṃ hí yónim abhí without any defined place in the structure.

Likewise in Rizzi’s structure, relative pronouns occupy the specifier of ForceP, the highest level of the C-domain, which cannot be preceded by topics (1997: 298). Therefore, for either analysis, we would need to posit yet another phrase level to accommodate all the moved elements.

So it seems that bringing a Germanic V2 account to bear on Rigvedic would not be a straightforward translation of structural analogs. For although the languages exhibit a similar rigidity in the arrangement of their leftmost material, scrutiny reveals that the nature of those arrangements is rather fundamentally different. Let us therefore no longer entertain these treatments as possibilities for Rigvedic.
3.1.3 Multiple Specifiers

Multiple specifiers are prohibited in X-bar theory, but in his *Minimalist Program*, Chomsky states that “in principle, there might be a series of specifiers” (1995: 245). Chomsky applies his discussion of multiple specifiers to the phenomenon of Icelandic transitive expletive constructions (thus inviting application to Germanic V2), but a more apparent application obtains for Bulgarian, which exhibits multiple wh-movement.

(58) kojₖ na kogoₖ kakvoₖ tₑ dal tⱼ tₖ
who.NOM.SG to who.DAT.SG what.ACC.SG be.3.SG given
“who gave what to whom?” (Rudin 1988: 461)

Positing multiple specifiers to CP is one straightforward way to account for this multiplicity. From there, and in accordance with the theory, it can be stipulated that the possibility for multiple specifiers exists as a parameter among languages, being allowed in Bulgarian but not in English.

The ramifications of allowing multiple specifiers are directly relevant to the mapping of the Rigvedic left periphery. If we take Rigvedic to allow multiple specifiers, we can account for example (23) thus:

(59)
The motivation for the movements of ābhogāyam and prá comes from the strong features on the complementizer yād. Based on examples (39-45) in Chapter 2, we can say something about these edge features without going into too detailed a discussion. Most obviously, all these examples exhibit the movement of a preverb, so the complementizer in each must bear a strong uninterpretable feature that can only be checked by the category to which preverbs belong (provisionally labeled X). The complementizer must also bear a strong uninterpretable feature that can be checked by at least two other categories: N (as in the above example) or P (as in [39]).

This account resolves the apparent island violations, because ābhogāyam never actually leaves the island; it is still sitting at the left edge of the embedded CP. The account could be falsified by finding matrix clause material intervening between the two moved elements, but we do not find such instances. Therefore it seems worthwhile to entertain this explanation as a viable possibility.

3.2 The free word order phenomenon

Some languages exhibit a great degree of variability in the acceptable arrangements of their constituents. Though much discussed in recent literature (Bayer and Kornfilt 1994, Broekhuis 2000, Fanselow 2001, Fanselow 2003, Hale 1983, Hinterhölzl 2006, Müller and Sternfeld 1994, Pullum 1982, Neeleman 1994, Saito 1992), the original forays into generative syntax left these cases almost entirely untouched, either citing stylistic contamination or leaving the problem for future researchers. Since Rigvedic appears to exhibit some degree of free word order, the phenomenon warrants discussion.

“Free word order” is actually an umbrella term. There are several different phenomena that appear responsible for a language’s word order freedom. Languages with very free word order are often described as non-configurational, implying that word order is not an
important aspect of their syntax. The phenomenon of scrambling refers to an optionality of constituent arrangement in an otherwise ordered language, and has been variously explained as syntactic movement, a post-syntactic phonological process (occurring at PF), or post-syntactic stylistic movement (occurring consciously). The boundaries between these phenomena are not always clear, nor are the phenomena themselves particularly well understood.

3.2.1 Non-configurationality

Non-configurational languages are characterized by extremely free word order or extreme discontinuity of constituents. The Australian language Warlpiri is one such language, as the examples below demonstrate.

(60) Warlpiri (Hale 1983: 6-7)
   a. Ngarrkangku ka wawirri pantirni
      man.ERG AUX kangaroo spear.NONPAST
      “the man is spearing the kangaroo” (ERG = ergative, AUX = auxiliary)
   b. Wawirri ka pantirni ngarrkangku.
   c. Pantirni ka ngarrkangku wawirri.

Hale notes that as long as the AUX element ka takes second position, any permutation of subject, object, and verb is equally acceptable. Kayardild, also spoken in Australia, similarly exemplifies non-configurationality. According to Evans, “the order of phrases in Kayardild is basically free, with all orders attested. Case marking, not word order, codes syntactic relations” (1995: 92). This last sentence should strike us as especially pertinent to Rigvedic, where discontinuous constituents and word order variety seem to depend on the comprehensiveness of the language’s inflection.
Could Rigvedic be a non-configurational language? Like Warlpiri, Rigvedic has elements rigid in their adherence to second position, while at the same time exhibiting a great variety of word orders. More generally, however, it may also be too drastic to classify languages as either configurational or non-configurational. Pullum (1982) and others suggest instead that configurationality exists on a spectrum, in which case we ought to rephrase the question to ask instead with what degree of regularity the language adheres to certain arrangements.

So, how important is word order in Rigvedic? In addition to housing several rigid initial positions, Rigvedic has been traditionally described as SOV, not as the result of direct investigation, but by analogy to the Vedic prose of the Brāhmaṇas. More recently, Gonda (1952) and Klein (1994) have looked into Rigvedic word order, specifically verb placement. In a subcorpus of Rigvedic, Klein finds about 62% of sentences to be verb-final, and about 20% to be verb-medial. Given that placing the verb first has the semantic consequence of conferring focus, and that even a more strictly ordered language like English sees non-canonical orderings in its poetry, this statistical preference for verb-finality basically confirms the previous suspicion that Rigvedic is verb-final. But with the percentage of verb finality attached to the claim, we are also prepared to place Rigvedic on a hypothetical spectrum of adherence to verb finality. Then, whether the language should be considered configurational or non-configurational is a matter of defining the terms.

In any case, it will not make sense to explore Rigvedic as a non-configurational language until we have exhausted all other possibilities. We do observe a noteworthy amount of word order freedom, but as long as there are observable patterns, we should begin by looking into these. So our next step must be to ask what syntactic mechanisms could be responsible for the observed variations.
3.2.2 Scrambling

A key component in discussions of so-called “free word order” is the phenomenon of scrambling. Scrambling refers to the seemingly optional reordering of certain kinds of words or phrases in otherwise configurational languages. The phenomenon manifests itself differently in different languages; the differences include 1) whether scrambling is bound within a clause or can occur across a clause-boundary (this is referred to as “long-distance scrambling”), 2) what kinds of elements can scramble, and 3) what topic/focus effects scrambling induces.

The formal study of scrambling began with Ross’s landmark dissertation of 1967, in a section about node deletion. Ross’s discussion was, in his own words, “highly conjectural,” but his insights set the stage for future research. In particular, his assertion that cases of scrambling “are so different from other syntactic rules that have been studied in generative grammar that any attempt to make them superficially resemble other transformations is misguided and misleading,” has inspired no shortage of attempts to prove him wrong. And although he wrote optimistically about the possibility of formulating rules for scrambling, he tentatively held the position that it was stylistic in nature, a process that altered well-formed syntactic output, and therefore not a concern for the syntax of a language. Currently there is little agreement concerning the nature of scrambling, the range of phenomena the term should cover, or to what extent different types of scrambling (such as clause-bound versus long-distance) deserve to be classified together.

Among those who treat scrambling within a generative framework, researchers tend to fall into two major camps. One of these positions is that scrambling, despite superficial differences, actually behaves like other well-established types of movement (Müller and Sternfeld 1994, Hinterhölzl 2006, Broekhuis 2000), though scholars differ on which specific types of movement scrambling patterns with. The other position is that scrambling
derives from variation in where elements may be base-generated in the underlying structure (Bayer and Kornfilt 1994, Neeleman 1994, Fanselow 2001, Fanselow 2003). Not all of these ideas are mutually incompatible; scrambling may resemble movement in one language but not in another. And for that reason, we must treat the definition of scrambling carefully; in particular, we should choose whether the term should cover the effect or the cause of the observable phenomenon. If it should cover the surface manifestation, then it is possible that some types of scrambling could be explained with movement, others with base-generation, and others as purely stylistic. But if there exists among the causes of the observed phenomenon some unique process that cannot be reduced to established theoretical terms, then it will be useful to reserve the word for that process instead. Also, since the present work deals with poetry, where style exerts a greater influence, let us reserve the term “scrambling” only for syntactic reordering. This will allow for a greater range of discussion about stylistic effects in Rigvedic.

In English, scrambling is typically considered impossible. In German, scrambling is clause-bound, limited to the arguments of the verb within the Mittelfeld. The opposite is true in Russian and Japanese, which exhibit long-distance scrambling.

(61) Clause-bound scrambling
   a. Latin
      videbo quem scio discipulum cras
      see.FUT.1SG who.ACC.SG know.1SG student.ACC.SG tomorrow
      “tomorrow I will see a student whom I know”
   b. discipulum quem scio video cras
   c. German
      dass der Lehrer das Buch der Studentin gab
      that.C the.NOM.SG teacher.NOM.SG the.ACC.SG book.ACC.SG the.DAT.SG student.DAT.SG give.PRF.3SG
      “that the teacher gave the student a book”
   d. dass der Studentin das Buch der Lehrer gab
(62) Long-distance scrambling

a. Russian (Müller and Sternfeld 1994: 333)

Vy posykli videli [CP kak zapakovali ti] you.NOM.PL parcel.ACC.PL sawPL how did upPL

“you saw how they did up the parcel”


sono hono Hanakova Taroova katta to omotteiru that book.ACC.PL Hanako.NOM.PL Taro.NOM.PL bought C think (koto) fact

“Hanako thinks that Taro bought that book”

The Latin example illustrates the kind of permutations one observes in Latin literature. There may be focus effects in the scrambled attestations of Roman authors, but the lack of native speakers makes such an investigation difficult. The German example exhibits a topicalization effect on der Studentin: when the noun phrase is scrambled as in (61d), the sentence must be pronounced with a different intonation and the reading contrasts the female student against other possible entities which may have gotten the book from other sources. In the Russian example, the object of zapakovali appears outside of the embedded CP to which it formally belongs, though it seems to show no syntactic motivation (focus fronting, etc.) for moving.

Despite the mystery underlying the phenomenon, the usefulness of comparing Rigvedic to scrambling languages is obvious. Thus our understanding of the syntax of Rigvedic may hinge on our understanding of scrambling. So now let us consider the Rigvedic data in this context. Observe the argument orders in the following examples.

(63) Clause-internal scrambling in Rigvedic

a. RV 10.107.8d

etāt sārvam dáksiṇāibhyo dadāti this.ACC.PL all.ACC.PL Dákṣiṇā.NOM.PL + this.DAT.PL give.3.SG

“Dákṣiṇā gives them all this”

b. RV 10.116.5c
Just as in the earlier German example, the arrangement of the arguments of the *give* verb here seems to be quite flexible: the accusative may precede the dative or follow it. More intriguing, however, we also find examples of arguments appearing across clause boundaries.

(64) Long-distance scrambling in Rigvedic

a. 1.161.3a

\[
\text{agním dūtám práti yád ábravítana}
\]

Agni.ACC.SG messenger.ACC.SG back REL.ACC.SG speak.IMPF.2.PL

“what you answered to Agni the messenger”

b. 10.96.2a

\[
\text{háriṃ hí yónim abhí yé}
\]

golden.ACC.SG FOC womb.ACC.SG towards REL.NOM.PL


together.sound.IMPF.3.PL

“those who sang together towards the golden womb”

Just as in Russian and Japanese, Rigvedic objects seem able to exit their embedded clauses, lending credence to an account of the language that admits of long-distance scrambling. So it appears that modern approaches to Russian and Japanese scrambling will most avail us in our pursuits. However, the nature of the data in question demands special attention. If it is at all possible that some examples of apparent scrambling in Rigvedic may be the result of conscious manipulation on the part of the poet rather than part of the language’s syntax, we must address that first, since it has the potential to contaminate the data.
3.2.3 Post-syntactic reordering

As much as Ross’s original hunch—that scrambling is stylistic—has been challenged in recent years, he was not alone in holding this opinion. In Aspects, Chomsky says in regard to the free word order phenomenon, “it should be emphasized that grammatical transformations do not seem to be an appropriate device for expressing the full range of possibilities for stylistic inversion,” going on to note that stylistic inversion is “tolerated up to ambiguity” (1965: 126-7). Given the breadth of scrambling phenomena discovered and scrutinized in various languages, it would be naive to suggest that all scrambling can be explained as stylistic, especially since it often aligns with topic and focus effects. However, the possibility of conscious, post-syntactic alteration is apparent, and may mimic other instances of scrambling.

Syntacticians rely on the ability to manipulate well-formed linguistic output, in order to create examples of ungrammatical utterances. More useful evidence for post-syntactic manipulation comes to us in the form of common hypercorrections.

(to quickly start running → quickly to start running
65) John’s book → John his book
between you and me → between you and I

In these kinds of examples, the final form of the utterance derives not from the syntactic system of the language but from consciously applying a rule to the output of that system. The common belief that it is “incorrect” to split English infinitives leads to the creation of less natural structures. In the late sixteenth and early seventeenth century, when a spurious etymology stated that the English s-genitive was an informal contraction of his, it became stylish to use the “uncontracted” form. The speaker, intending to say John’s, consciously replaces the word with John his, the so-called “his-genitive.” And finally, the commonplace correction of me and you to you and I in schools has led to the creation,
in some English speakers' minds, of a rule that so converts every instance of the phrase (grammatical or not). Over time these kinds of novel constructions can become part of the syntactic system, but on their introduction via hypercorrection, each is an example of post-syntactic, conscious manipulation. Therefore we can establish that conscious reordering does in fact happen, so the question is whether some instances of apparent scrambling could be accounted for in this way, in particular whatever instances we seem to find in a wholly poetic corpus.

3.3 Conclusions

In this chapter we have briefly explored Germanic V2, multiple specifiers, non-configurationality, scrambling, and post-syntactic reordering as possible routes towards explaining syntax in the Rigveda. However, it is the last of these which deserves the most attention, because it is fundamentally different from the others. Since post-syntactic reordering operates on well-formed syntactic structures, it does not interact with other processes at the same structural level, and so the mechanics of its operation would not be discoverable through its effects on other phenomena. In fact its mechanics would seem to be at the mercy of the individual's consciousness and style, relegating its investigation outside the scope of syntax altogether. This distinction from syntax, however, gives post-syntactic reordering the power to contaminate otherwise useful syntactic data. Therefore, although we are not prepared to explore the specifics of its mechanisms, we must be able to identify if and where post-syntactic reordering takes place.
Chapter 4

Getting Syntax out of Poetry

The cardinal difficulty with investigating syntax in the Rigveda is that the corpus does not readily lend itself to serious examination. It is a playful informant, as it were, and if it were composed in a modern language, it would be summarily ignored by syntacticians on the understanding that poetry is not to be trusted. For even if there were no doubt that every structure found in poetry is grammatically possible, it is clear that poetic examples alone cannot offer us a clear picture of a language. That is, the language of poetry is, in general, marked.

Therefore we find many questions about Rigvedic syntax that we are unprepared to answer. To illustrate, let us consider the matter of discontinuous DPs. Some languages, like German, tolerate these in certain contexts, whereas other languages, like English, do not.

(66) a. Marco sieht drei Bücher
   “Marco sees three books”

b. Bücher sieht Marco drei
   “as for books, Marco sees three”

c. Marco sees three books

d. *books, Marco sees three
Modern theories of syntax have afforded us several possible explanations. In German, discontinuous DPs seem to precipitate out of verb-second (V2) phenomena, and so they have been variously explained by appealing to topicalization or an EPP feature. These explanations are especially relevant to Vedic, because (as mentioned previously) Vedic and German seem to show a similar kind of rigidity in their initial positions, and in addition, discontinuous DPs are attested in Rigvedic, as the following examples show.

(67) a. RV 3.11.3a

agnír dhiyā sá cetati
Agni.NOM.SG mind.INS.SG this.NOM.SG understand.3SG

“this Agni understands with mind”

b. RV 1.41.1c

nú cít sá dabhyate jánaḥ
never this.NOM.SG deceive.PASS.3SG person.NOM.SG

“this person is never deceived”

Possible explanations for these examples could, similarly to those for German, be sought in EPP features or topicalization; or by appealing to left- or right-dislocation; or perhaps, if the discontinuity appears optional and without semantic consequence, the phenomenon of scrambling. If we had only to choose from these possibilities, we might be able to decide which one fits the most data, and from there draw some tentative conclusions about Rigvedic syntax. It seems to me, however, that such exercises will afford us little actual insight until we have dealt with the elephant in the room.

Syntacticians are correct to discard poetic data, but for those who must, out of necessity, bring it to bear on syntactic questions, the first step should be to discriminate among the data and determine the boundaries of grammaticality. People do not speak in sonnets. And to reconstruct syntax entirely from poetry would not necessarily yield an accurate
picture of the language. In this chapter, I will explore what is meant by “style” or “poetic grammar,” in order to develop a rubric for extracting meaningful syntactic data out of a poetic corpus.

4.1 Poetic permutations

It is common knowledge that the normal patterns of a language often seem distorted in poetic data. But as Ben Fortson states: “…this problem is sometimes overstated; it is incorrect to suppose – as many have – that poetic texts leave grammar by the wayside, and that poets were able to take ‘licenses’ willy-nilly. The language of poetry is just as strictly rule-governed as ordinary speech: though certain constructions only occur in poetry (leading some scholars to speak of a poetic grammar), they are still possibilities afforded by the grammar of the language” (2010: 153). Fortson’s claim is conservative and sensible, but, as I hope to show, not entirely accurate.

Let us consider Fortson’s claim not in the context of poetry, but of television. In season 2, episode 1 of The Norm Show, the main character Norm finds himself attempting to annoy an English professor. Consider the following exchange.

(68) Norm: Oh well uh, Shelley and ME really appreciate that.
Professor: “Shelly and me,” yes, of course, “Shelly and me.”
Norm: Yeah, ME especially appreciatES that.
Professor: Ha! Very clever, Norm, very clever, yes.
Norm: You sure DO AM BE a smart guy!

We are not tempted in this instance to say that Norm’s last two utterances are grammatical, because it is clear that he is consciously manipulating their syntax in a language game of his own devising. Consider also the Star Wars character Yoda. Yoda’s most distinguishing mannerism is his peculiarly affected English.
Rather than leaving out words or speaking with a foreign accent, Yoda distinctively disregards the usual, unmarked word order of English (presumably because his language faculty is different from that of humans). His transformations are not consistent from scene to scene or from film to film, but it is easy to create a system of transformations in order to produce novel Yoda-like utterances. The character’s speech patterns have thus become a language game. What is interesting about the Norm and Yoda language games is that, whereas more familiar language games play with phonology, these play with syntax. Nevertheless, similar principles are at work. The game acts as a filter: well-formed linguistic output goes into the game, the game changes the output according to its rules, and in turn outputs an utterance which is not necessarily well-formed.

Poetry seems to be a sort of language game as well. Its rules require a certain metrical pattern or rhyming scheme, and poets seem to alter well-formed linguistic output in order to follow the rules of the game. Phonological alterations are obvious: for example, stressing the to of an English infinitive or forcing the pronunciation of again as either [əgeɪ̯n] or [əgɛn] depending on which word it needs to rhyme with. There is no reason to suppose that similar alterations of a syntactic nature do not also occur, though they would appear to be more difficult to pin down.

Consider the following English examples, each of them taken from the rhyming couplet at the end of one of Shakespeare’s sonnets. I have put in boldface those portions which deviate from unmarked word order.
a. So. 14.13-14
   Or else of thee this I prognosticate:
   Thy end is truth’s and beauty’s doom and date.

b. So. 27. 13-14
   Lo, thus, by day my limbs, by night my mind,
   For thee, and for myself, no quiet find.

c. So. 98.13-14
   Yet seemed it winter still, and, you away,
   As with your shadow I with these did play.

d. So. 138.13-14
   Therefore I lie with her, and she with me,
   And in our faults by lies we flattened be.

In (70a), the order of constituents in the verb phrase seems to have been strategically rearranged to put *prognosticate* in a position to rhyme with *date* in the following line. The same seems to have happened, *mutatis mutandis*, in the second lines of the next three examples. In (70d), the copula and the participle of the passive construction appear to have been exchanged. If I were to encounter this construction outside the poetic context, I would at least question its grammaticality, nor would I naturally produce such an arrangement. But of course, my judgments alone are not enough.

The contemporary English ear being perhaps unattuned to the grammatical nuances of Early Modern English, we can nevertheless explore Shakespeare’s usage by performing corpus searches. Let us take the pattern -ed be from (70d).

The following list was generated by searching all of Shakespeare’s works with the regular expression, "[e’]d be[, ,]", which returns any instance where a word ending in -’d or -ed is followed by the word be. That search returned 43 results, all of them instances of inversion taking the form of a participle in -ed followed by the auxiliary be. I then sorted through the results to remove any obviously grammatical examples of inversion:
interrogatives, optatives, and imperatives. What remains is a set of only 10 instances. In each of these 10 examples, Shakespeare seems to have inverted the passive construction only in order to achieve a rhyme or to maintain a metrical pattern.

(71) Love’s Labour’s Lost, [IV, 3]:
I would forget her; but a fever she
Reigns in my blood and will remember’d be.

(72) Macbeth, [IV, 1]:
Macbeth shall never vanquish’d be until
Great Birnam wood to high Dunsinane hill
Shall come against him.

(73) Passionate Pilgrim:
Therefore I’ll lie with love, and love with me,
Since that our faults in love thus smother’d be.

(74) Rape of Lucrece:
But cloudy Lucrece shames herself to see,
And therefore still in night would cloister’d be.

(75) Richard II, [V, 3]:
Against them both my true joints bended be.

(76) Sonnet 138:
Therefore I lie with her and she with me,
And in our faults by lies we flatter’d be.

(77) Sonnet 142:
Be it lawful I love thee, as thou lovest those
Whom thine eyes woo as mine importune thee:
Root pity in thy heart, that when it grows
Thy pity may deserve to pitied be.

(78) Tempest, [V, 1]:
As you from crimes would pardon’d be,
Let your indulgence set me free.
(79) Titus Andronicus, [II, 1]
Chiron, thy years want wit, thy wit wants edge,  
And manners, to intrude where I am graced;  
And may, for aught thou know’st, affected be.

(80) Two Gentlemen of Verona, [IV, 2]:  
Who is Silvia? what is she,  
That all our swains commend her?  
Holy, fair and wise is she;  
The heaven such grace did lend her,  
That she might admired be.

In addition to this list, a second search was performed, this time using the regular expression, "be *)[e']d[. ,]", which returns instances of be followed immediately by any word ending in -'d or -ed, the vast majority of which are participles in passive constructions. This second search returned 1108 results, spread out across all kinds of more and less poetic environments.

It is therefore clear that Shakespeare vastly preferred the familiar passive construction of the form be -ed, despite having found 10 metrically convenient occasions to alter their order, outside the context of grammatical inversion. So, to what extent shall we consider these 10 examples to be “possibilities afforded by the grammar of the language”? In order to explore this gray area, consider the following two sets of English examples¹.

(81) a. I put the kettle on the stove.  
   b. ? The kettle on the stove I put.  
   c. ? On the stove put I the kettle.  
   d. ? Put I on the stove the kettle.  
   e. ?? On the stove put the kettle I.  
   f. ?? I the kettle on the stove put.

(82) a. John put Jane in a corner.  
   b. ?? Jane in a corner John put.

¹These grammaticality judgments are my own.
(81a) shows the unmarked order for a simple English sentence, and the examples below it offer a smattering of permutations that ought to be possible in English poetry; note that these utterances are, if not unacceptable, at least less acceptable than the first, or perhaps of variable acceptability, depending on context. But now observe the situation in (82). Here the acceptability of the alternative arrangements deteriorates much more drastically, although in fact these two sets are completely parallel. That is, every sentence in (81) has the same basic syntactic structure as its corresponding example in (82); the only differences are morphological and semantic. Therefore the discrepancy in judgments between these sets indicates that some extra-syntactic factors are affecting our calculations of grammaticality. For instance, in (81), the personal pronoun is marked for case, so there can be no ambiguity as to the subject of *put*; and the context helps coerce the correct interpretation: our real world knowledge of common kitchen scenarios seems to be seeping into our grammaticality judgments. On the other hand, the examples in (82) do not offer any such clues, so we are forced to wonder whether our judgments of the examples in (81) (and possibly even those in (82)) are really grammaticality judgments at all. Perhaps they could more accurately be called “intelligibility” judgments.

4.2 Intelligibility versus grammaticality

The syntactic value of grammaticality necessitates–by definition–that each element in a syntagm exist in a paradigmatic relationship with other elements of the same category. That is, NPs must be interchangeable with other NPs, CPs with other CPs, etc. regardless of their differences in meaning: the concept is illustrated by Chomsky’s (1957) famous
sentence #colorless green ideas sleep furiously, which is completely unintelligible, and yet grammatical. Along similar lines, I contend that the sentence ??I the kettle on the stove put is completely intelligible, but ungrammatical. The relationship seems to parallel that of rectangles and squares: the set of utterances which are intelligible (through grammar, context, code, vel sim.) contains the subset of utterances which are intelligible through grammar. The difference between grammaticality and intelligibility seems negligible in most syntactic investigations: researchers are careful to avoid data which might have been consciously processed. Poetry, on the other hand, is almost always consciously processed, so in mining poetry for syntactic information, negotiating the difference between intelligibility and grammaticality is a necessary component of the investigation.

So how are we to go about finding the fine line between these two values? For a language like English, we could easily play with the context of the utterances, as in (81) and (82), present native speakers with poetic structures embedded in prose, or any number of methods that exploit our access to native speakers. But for an old language attested only in poetry, we need to be more clever.

4.3 Exploiting metrical variation

The hymns of the Rigveda, as previously mentioned, were composed in accordance with quantitative metrical patterns, meaning that the scansion of the verse is determined not by where the lexical accents fall (as in qualitative meter), but by how long each syllable is pronounced. Syllables containing long vowels or a vowel followed by multiple consonants take more time to say and are denoted as “heavy,” their shorter counterparts being called “light.” The effect of a quantitative meter thus resembles Morse code with its various patterns of long and short sounds. The basic rules of quantitative scansion mirror the phonological reality of morae. A mora is a basic unit of phonological length. For example,
a short vowel is one mora long, while a long vowel is two morae long. Consonants can also constitute morae, but not always. To understand why, a familiarity with the structure of the syllable is necessary.

The syllable comprises three main parts: first the onset, followed by the nucleus, and finally the coda. Vowels and syllabic consonants occupy the nucleus; this is the only obligatory part of the structure. A single consonant may occupy the onset, and the coda may contain multiple consonants. The chief difference between the onset and the coda is that the onset never constitutes a mora, whereas those in the coda do. Thus the sequences ̃V, V.V, CV.CV, CVC, and VC are all two morae in length. In these terms, a light syllable is a one mora syllable; a heavy syllable contains two or more morae.

In traditional Indo-European poetry, and therefore in the Rigveda, it is the cadence of the verse where the metrical pattern is most rigidly adhered to, even though the quantity of the last syllable in the line (as well as the first syllable in the line) is indifferent (these are known as “anceps” syllables). The beginning of the verse tends to show a preference for long syllables, with short syllables showing up more frequently towards the end, and most Vedic meters in general tend towards an iambic rhythm. Nevertheless, in every meter employed, Vedic verses exhibit a great amount of variation (Arnold 1905: 7-9).

The three most common metrical patterns are laid out below. The first four or five syllables form the opening; the last four or five form the cadence. In the triśṭubh and jagatī meters, the opening is followed by a caesura and a “break” that consists of three or two syllables, depending on whether the opening has four or five syllables, respectively. Since these meters comprise three parts, they are commonly referred to as trimeter verses. The chief difference between triśṭubh and jagatī is the number of syllables. Triśṭubh is 11 syllables, whereas jagatī is 12; the extra syllable adds a beat to the cadence, giving each verse type a distinctive rhythm. In this way, the triśṭubh takes on a trochaic pattern,
while the jagatī is iambic. The gāyatrī meter is dimeter, meaning it contains only two parts: an opening and a cadence. In the following representations, ‘H’ denotes a heavy syllable, ‘L’ a light syllable, and ‘A’ an anaceps syllable. The break and the caesura are also marked (| and ||, respectively), and it is important to note that both of these must coincide with word-boundaries.

(83) Common meters in the Rigveda
dimeter

<table>
<thead>
<tr>
<th>gāyatrī</th>
<th>A H A H</th>
<th>L H L A</th>
</tr>
</thead>
</table>

trimeter

| triṣṭubh | A H L H H || L L | H L H A |
|----------|-----------|---------|
or
| A H L H || L L H | H L H A |

| jagatī  | A H L H H || L L | H L H L A |
|---------|-----------|---------|
or
| A H L H || H L L | H L H L A |

Every hymn deviates from its prescribed meter here and there, and some lines are much less well-behaved than others. Consider the following examples.

(84) a. RV 1.1.1a
agnim ile purōhitam A L H H | L H L A

b. RV 1.27.3c
pahī sādam ād viśvāyuḥ A L L L | H H H A

(84a) for instance, only deviates from the gāyatrī prescription once (in bold), while (84b) deviates four times. It is obvious that there must be some amount of deviation which would render a given poem defective: if, say, the meter deviates too often for a listener to determine the intended pattern or any pattern at all. Of course we cannot determine the exact value of that amount, but acknowledging that there is such a value allows us to infer that every verse lies at some point on a spectrum of metrical quality. Therefore we can state that the line given in (84a) is to some degree metrically preferable to the line in (84b).
Now, it is safe to say that the poet is working towards two main goals. One is that he must make himself understood, so he cannot stray too far from the patterns of his speech. The other goal is to fit a metrical pattern, so he cannot stray too far from the arrangement of heavy and light syllables which is prescribed for the line. And since these hymns were created and preserved by professionals, where one of these goals is not met, we should expect to see the other fulfilled. The only assumption we must make is that a professional Vedic bard would not both obfuscate his meaning and use an irregular rhythm, but that he would rather make grammatical concessions for the sake of meter, or metrical concessions for the sake of grammar. Just as Shakespeare deviates from his usual word order when strategizing rhymes and stress patterns, so it is reasonable to suppose that the Vedic poets did the same to fit their own patterns. This mentality of composition would lead to the situation illustrated by the Venn diagram below: all of the corpus is intelligible, but the circle on the right represents the portion of the corpus that conforms well to its poetic format; the circle on the left represents the portion of the corpus that conforms best to the grammatical patterns of the language.

To form a complete picture of the syntax and poetics of the corpus, we must know which parts of it fall into each of these sections. But without a complete understanding of the language’s syntax, we cannot discern for just any given instance whether the poet is
sacrificing grammaticality for meter (the far right section of the diagram) or achieving both simultaneously (the middle section). On the other hand, our understanding of the corpus’s metrical patterns is far greater, so by isolating lines that are metrically poor, we may find truer depictions of the syntax of the language. Therefore it is the shaded section of the diagram we should focus on, where according to my hypothesis meter has been sacrificed for the sake of grammaticality.

Edward Arnold, in his seminal work on Vedic Meter, anticipated such an investigation over a century ago: “It is difficult to think that a professional bard should without motive have left his verse with an irregular rhythm, when any European scholar, without serious practice of the art of versification, can put it into order for him with hardly a perceptible alteration in the meaning. It is also difficult to think that professional reciters and their instructors could by mere accident have left stanzas in a shape which must make them a perpetual burden to the memory. In these ‘irregularities’ there may be meanings not easily recognized, and for this reason they deserve to be carefully studied. (1905: 21)” It seems, then, that a necessary step in the investigation of Vedic syntax should be to reduce the corpus by boiling off the most metrically perfect portions. But in order to accomplish this, we must first find a way to quantify the quality of various metrical patterns.

4.3.1 Quantifying metrical quality

It would be tedious work to scan each line of the Rigveda looking for metrical irregularities, but thanks to the work of Barend A. van Nooten and Gary B. Holland, who created the original Rig Veda: a Metrically Restored Text; and to Karen Thomson and Jonathan Slocum, who further edited and published the electronic version of this work; we have a digital version of the text which lends itself to being easily and quickly scanned by computer programs. The programs themselves are modest Linux shell scripts employing a brute-force search and replace process which appends to the right of each line its
scansion as a string of Hs and Ls bordered by As, as in examples (84a) and (84b). One of these programs generated a scanned version of the Rigveda. Another counted the number of times each pattern occurred, and appended the number to the right of the scansion, yielding a version of the text taking the following form.

(86) 1.001.01a āgniṃ īle puróhitam :ALHHLHLA: 1979
1.001.01b yajñásya devám ṛtvíjam :AHLHLHLA: 3316
1.001.01c hótāraṃ ratnadhātamam :AHHHLHLA: 4930 ...

The resulting version of the corpus not only tags each line with its metrical frequency; it also allows us to search for certain metrical patterns or lines containing a certain number of syllables.

4.3.2 Reducing the corpus

Since the optimal versions of each metrical pattern are known to us, at least in part, by the relative magnitude of their frequency, we can safely correlate infrequency with poor meter and then (per hypothesis) with more reliably grammatical arrangements. Having found the frequency of each line’s metrical pattern, we now also have an easy way to isolate the worst lines for separate study. Appendix B is a subcorpus: a list of all the lines of 8, 11, and 12 syllables whose scansion represents the first percentile of metrical frequency.

Uses for this kind of metrical discrimination abound. For example, isolating the metrically infrequent lines brings to the fore lines which may require further emendation. Thus upon checking the program’s accuracy, several lines appeared to have been incorrectly scanned. The problem was not with the program, however, but with the lines themselves.
The disyllabic $a,ā+r̥$ must sometimes be read as $ar,ār$ (Arnold 1905:289), though it is never written this way in the manuscripts. The metrically restored text used for this project should account for this contraction, but these examples seem to have escaped notice in the editing process. Emendation from $a,ā+r̥$ to $ar,ār$ yields significantly more frequent metrical patterns for most of these lines.

Thus the exercise of tagging and sorting the corpus by metrical frequency proves immediately useful. My purpose for the process in this work is to explore syntactic variations, but I hope that in the future this method will offer various other insights into other metrical texts.
To show how this reduction may aid in syntactic investigation, let us consider again the troublesome example from Chapter 2. But this time, we can also consider the frequency of its scansion, and thus the likelihood that the poet may have tampered with its grammar.

This line employs the third most frequent pattern for a 12-syllable line, placing it in the 74th percentile. Therefore this line ranks relatively low in the realm of grammatical trustworthiness. For comparison, consider the following stanza.

It is clear from the frequencies of their scansion which of these lines should attract our scrutiny. Likewise, we see that the discontinuous DPs showcased in (67) both occur in lines with extremely frequent scansion and so are not to be trusted as sources of grammatical insight. To illustrate the point further, let us try shuffling the words of (67).

If we rearrange the words to keep the DP together, we cannot form a line with popular scansion, except by collocating sá jánah in the exact reverse of its normal order. We can draw two conclusions from this exercise: first we can tentatively posit that jánó sá is ungrammatical as a variation of sá jánah; more generally we can conclude that the attested
line does not constitute evidence of grammatical discontinuous DPs in Rigvedic, since the poet clearly had metrical motivation to break up the phrase. Of course he would have had more methods at his disposal than simple rearrangement, such as finding synonyms etc., but of all the available ways by which a poet might improve a line, rearranging the order of words is both obvious and easily replicated by modern scholars, even those “without serious practice of the art of versification.”

4.4 A method for syntactic exploration

In this chapter, I hope to have shown that the difference between grammaticality and intelligibility is real and must be acknowledged and scrutinized if we are to navigate a corpus containing consciously manipulated material.

Therefore, in order to investigate syntax in a corpus of poetry alone, it is necessary to categorize utterances by how well they conform to the poetic format. Utterances that conform to the format well are unreliable because it is unclear whether the syntax has been distorted. Utterances that contradict the poetic format, especially where simple, obvious alterations can improve them, are likely to betray natural syntactic patterns. For the purpose of investigating syntax in the Rigveda specifically, this is the method I propose: to consider observations of syntactic phenomena within their metrical contexts, identifying possible metrical motivation for post-syntactic alteration; and having isolated the metrically worst lines in the Rigveda, to compare their apparent grammatical patterns against those of more metrically preferred lines. By following these principles, and wield-

\footnote{N.B.: There are two rearrangements that fare better than the original:}

| sá nú cíd dabhyate jánah | AHHHLHLA | 4930 |
| jáno nú cíd sá dabhyate | AHHHLHLA | 4930 |

But these place nú cíd in a completely abnormal position.
ing the ability to quantify any given line’s relative metrical optimality, I believe we can form a clearer picture of the syntax of the language. In the next chapter, we will explore several grammatical phenomena in the Rigveda using evidence from metrical frequency.

At the very least, the contribution of a scanned version of the Rigveda with scansion frequency annotations should help ease the development of certain future Rigvedic investigations, since it allows a researcher to search for lines based on their metrical patterns or to quickly compile metrical statistics.
Chapter 5

A statistical method for discriminating grammatical patterns

Though it is possible that Rigvedic was unique among the languages of the world in a way that would cause us to reevaluate certain claims to linguistic universality, it is much more likely that Rigvedic was not extraordinarily different from other languages. Having called into question the integrity of the data, and furthermore having pared the data down according to the likelihood of post-syntactic conscious manipulation, we can now begin a fresh syntactic inquiry of the language.

Note, however, that many of the most well-established facts about Rigvedic are not at all challenged by this new method. For instance, Rigvedic is particularly morphologically rich and, like Latin and some Romance languages, does not require the expression of subject pronouns. The extent of this phenomenon in the corpus makes it effectively self-evident. Nor could the method of investigation outlined in Chapter 4 approach this particular point, since to do so would require far more extensive reworkings of lines than simple rearrangements of existing elements. Nor can the method contribute more to
the analysis of finer-grained processes like compounding, and it should be applied much more carefully to investigations of clitic behavior, because these phenomena interface more closely with the morphology and phonology of the language. Comparing the frequency of patterns between the corpus and subcorpus may yet aid in these investigations, but not necessarily evidence from potential rearrangement, since in these cases it would mean altering word choice and morpheme boundaries.

It will first be necessary to support the principles explored in the previous chapter with a statistical foundation, before we can reliably correlate poor meter with good grammar. This task—the purpose of this chapter—will involve searching for variations in grammatical patterns (such as word order) and mapping those variations onto their distribution among lines of differing metrical optimality. To accomplish this mapping, we will need to catalog the occurrences of two competing grammatical patterns in a table like the following.

<table>
<thead>
<tr>
<th>scansion</th>
<th>frequency</th>
<th>rank</th>
<th>Type A tokens</th>
<th>Type B tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALHHHHHA</td>
<td>1000</td>
<td>1</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>AHLHHHA</td>
<td>600</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>AHHLHHHA</td>
<td>50</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>AHHHLHHA</td>
<td>20</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>AHHHHLHA</td>
<td>10</td>
<td>5</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

This example table, if it described actual data from the corpus, would show that as meter becomes worse, the probability of finding a token of type A decreases, while that of finding a type B token increases. That kind of correlation would indicate that the pattern expressed by type A may be merely a product of metrical convenience, and that type B expresses the grammatical pattern, since it arises with the relaxation of conscious, poetic manipulation. It is unlikely that we will find such distributions in the actual corpus, and there may be several kinds of correlations among different pairs of types. For example, we should expect to find similar frequencies for each token in the highest ranked lines, if the metrical shape of both types is similar. If they are dissimilar, we should expect the metrical pattern of each line to determine which type is favored. In both these instances,
we should expect the grammatical pattern to be favored more as the lines descend in rank. If the types exhibit free variation, we should expect to find whichever type the meter favors, and no instances where rearrangement can improve it.

The task of defining the relationship between meter and syntax is greatly accelerated by the automated tagging of the corpus, which was accomplished via the computer script described in the previous chapter. Nevertheless we are at the mercy of several complicating factors: bluntly, some pattern searches are easier to automate than others. Consider for instance the polysemy of an ending like -i: by itself this could indicate a neuter plural a-stem noun, a third person singular present active indicative verb, a neuter singular i-stem noun, a locative singular noun, and many other things. Furthermore, a search for words ending in -i will also return any words that only happen to end with -i, among them words with longer endings like -nti or -mahi. Therefore, the clearest and most easily obtained results will come from searches that target longer, more distinctive pieces of morphology; these are the focus of the present chapter. Though we are forced to limit this phase of the investigation along these lines, it will be sufficient so long as we can establish a link between metrical and grammatical patterns.

After drawing parametric conclusions from the data collected with this method, we may be able to extrapolate some generalizations on the nature of phrase structure in Rigvedic, according to the principles of Universal Grammar. By employing the implications that some parameter settings exhibit with respect to each other crosslinguistically, we may be able to bridge some of the gaps introduced by the limitations of the corpus.
5.1 The position of the genitive with regard to its head noun

Lacking a tagged corpus, it is nevertheless possible to search for distributions of various word orders using regular expressions, by targeting subsets of grammatical phenomena which feature more distinctive morphology. It would be tedious, for example, to compile every genitive noun in the corpus in order to canvass their positions with regard to their head nouns, because genitives from different declensions end in various ways, and these often resemble unrelated morphemes. In general, the polysemy of shorter endings is greater. However, many plural genitives end distinctively in the sequence, āV+nām. Regular expressions allow us to search for this basic pattern while allowing a certain degree of freedom at any specified point.

(93) “(ā|ā́|ū|ū́|ī|ī́|r̥̄|r̥̄́)[ṇn](ā́|ā)[mṃnṇñṅ] ”

This expression searches for a sequence of four characters: first, any of the long vowel options specified in the parentheses, followed by either of the nasal consonants in the square brackets, followed by either the accented or unaccented long a, followed by any of the nasals in the final set of square brackets, followed by a space. It will return any words ending in -ānām, -ūṇāṅ, -īnāṃ, etc. So although it is not possible to automate the discovery of all genitive nouns, we can do so for all genitive nouns matching this particular pattern, with little interference due to homophoneous morphology. The cross-section of genitives yielded thus can be analyzed “by hand” to determine whether it fits the “genitive X” or “X genitive” pattern.
Since the frequency of a particular metrical pattern is only relevant with regard to other lines where the possibility of that pattern exists, we must only exploit meter in comparing like against like: octosyllabic lines against octosyllabic lines, hendecasyllabic against hendecasyllabic, and dodecasyllabic against dodecasyllabic.

In the following tables, all uses of the genitive were considered which depend upon another noun: the possessive, partitive, objective, subjective, etc. and none of those uses in which the genitive is an argument of a verb or preposition. Instances where the genitive depends on an interrogative noun were also excluded. When the genitive was an adjective adjoined to a genitive noun, the constituent noun phrase was considered. The leftmost column denotes the ranking of each set of lines according to the frequency of their metrical configurations. The two adjacent columns count the number of tokens from each grammatical pattern. So in the first row of the first table, the data tells us that lines exhibiting the most frequently occurring metrical rhythm account for 33 instances of genitive plurals in Ģ+nām preceding their head nouns, and 2 instances of the same following their head nouns.

(94) Genitive distribution in 8-syllable lines

<table>
<thead>
<tr>
<th>scanion</th>
<th>frequency</th>
<th>rank</th>
<th>genitive X</th>
<th>X genitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHHHLHLA</td>
<td>4930</td>
<td>1</td>
<td>33</td>
<td>2</td>
</tr>
<tr>
<td>ALHHLHLA</td>
<td>1979</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>AHHLLHLA</td>
<td>1362</td>
<td>3</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>AHHHHHLA</td>
<td>108</td>
<td>4</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>AHHHLHHA</td>
<td>92</td>
<td>5</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>AHHHHLHA</td>
<td>85</td>
<td>6</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>AHHHHHLA</td>
<td>75</td>
<td>7</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AHHHHLHA</td>
<td>68</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>AHHHHHHA</td>
<td>64</td>
<td>9</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>AHLHHHHHA</td>
<td>54</td>
<td>10</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>ALHHLHHA</td>
<td>37</td>
<td>11</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ALHHLHHA</td>
<td>33</td>
<td>12</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>AHHHLHLA</td>
<td>32</td>
<td>13</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>AHHLLHLA</td>
<td>30</td>
<td>14</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AHHHLHLLA</td>
<td>27</td>
<td>15</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
The multiple subdivisions of the corpus reduce the sample size in data like this, but we should always expect to find far fewer tokens in the sets of lines ranked lower than the first handful. In the table above, the top three rows represent 90 percent of all 8-syllable lines, while rows 4 through 15 represent the other 10 percent. Tallying the results of the 90 percent together, the tokens of the most metrically preferred lines, we see an overwhelming preference for the preceding genitive. However in the bottom 10 percent, following genitives are about equally as common.

Further analysis of the top ranked sets of lines reveals a metrical motivation for their overwhelming preference towards the genitive-X pattern. The metrical shape of a genitive plural noun must be at least three syllables, the last two both being heavy. By homing in on the tell-tale -HH ending, we can break down each of the top three metrical patterns according to the number of positions they contain which might be able to host a word matching these quantities. The following breakdowns show where it is possible to find genitive plurals in the top 3 ranked lines: the position of the -HH ending is in boldface; the underline indicates the minimum size of the genitive.

(95) Rank 1 metrical pattern contains two possible places for a genitive plural:

\[\text{AHHHLHLA}\]
\[\text{AHHHLHLA}\]

(96) Rank 2 metrical pattern contains one possible place for a genitive plural:

\[\text{ALHHLHLA}\]

(97) Rank 3 metrical pattern contains one possible place for a genitive plural:

\[\text{AHHLHLHLA}\]

Since the top ranked pattern affords more places to host words of this particular shape, it is not surprising to find more genitive-X tokens in those lines: if its noun phrase is contained within the pāda, the genitive plural can only occur at the beginning, providing a metrical motivation to postpone its head noun.
A similar situation is found in applying the same search and breakdown to lines of 12-syllables.

(98) | Genitive distribution in 12-syllable lines |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>scansion</td>
<td>frequency</td>
<td>rank</td>
<td>genitive X</td>
</tr>
<tr>
<td>AHLHLLLHLHLHLA</td>
<td>1190</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>AHHHLLLHLHLHLA</td>
<td>650</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>AHHHHLLLHLHLHLA</td>
<td>523</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>AHHHLLLHLHLHLA</td>
<td>468</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>AHLHLLLHLHLHLA</td>
<td>211</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>AHHHLLLHLHLHLA</td>
<td>209</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>AHHHLLLHLHLHLA</td>
<td>183</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>ALHHHLLLHLHLHLA</td>
<td>139</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>ALHHHLLLHLHLHLA</td>
<td>69</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>AHHHLLLHLHLHLA</td>
<td>38</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>ALHHHLLLHLHLHLA</td>
<td>35</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>AHHHLLLHLHLHLA</td>
<td>21</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>AHHHLLLHLHLHLA</td>
<td>9</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>ALHHLHLLLHLHLHLA</td>
<td>6</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>ALHHHLLLHLHLHLA</td>
<td>5</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>AHHHLLLHLHLHLA</td>
<td>1</td>
<td>16</td>
<td>0</td>
</tr>
</tbody>
</table>

Here again it is clear that the distribution in the top ranked sets correlates with the number of locations in the metrical pattern which could host a genitive plural token.

(99) Rank 1 metrical pattern
one place for genitive plural:
AHLHLLLHLHLHLA

(100) Rank 2 metrical pattern
three places for genitive plural:
AHHHLLLHLHLHLA
AHHHLLLHLHLHLA
AHHHLLLHLHLHLA

(101) Rank 3 metrical pattern
two places for genitive plural:
AHHHLLLHLHLHLA
AHHHLLLHLHLHLA

(102) Rank 4 metrical pattern
three places for genitive plural:
AHHHLLLHLHLHLA
AHHHLLLHLHLHLA
AHHHLLLHLHLHLA
We can conclude that in metrically preferred lines, word orders are indeed subject to poetic necessity. It follows then, that the metrically less preferred lines are also less subject to poetic influence. Nor is this due to the virtues of their particular metrical patterns, but rather to the sheer variety of patterns they exhibit: there are only a few ways to be a good line, but many ways to be a bad one. Themetrical cost of rearrangements is simply lower in the bad range and higher in the good range.

As for the integrity of the method in question: if it has succeeded in uncovering a spectrum of grammatical trustworthiness, we expect to find that the worse ranked lines contain the most grammatical language. And as a corollary to that expectation, we would also expect those lines to show clearer patterns.

Just such a pattern emerges when we scrutinize the lower-ranked occurrences of the x-genitive ordering. In almost all of these instances, the genitive seems to be the object of a verbal element in the x, as the following examples illustrate.

(103) Objective genitives following verbal nouns
   a. RV 1.27.1c
      samrā́jantam adhvarāṇām AHHLHLHA 32
      rule.PTCP.ACC.SG ceremony.GEN.PL
      ‘the one ruling over the ceremonies’
   b. RV 1.3.11a
      codayitrī sūnŕ̥tānāṃ ALHHHLHA 33
      inciter.NOM.SG liberal.gift.GEN.PL
      ‘inciter of liberal gifts’
   c. RV 8.46.2c
      vidmá dātāraṃ rayiṇám ALHHHLHA 33
      know.PRF.1PL giver.ACC.SG wealth.GEN.PL
      ‘we know [you as the] the giver of wealth’
   d. RV 1.188.11a
      purogā agnīr devā́nāṃ AHHHHHHA 54
      fore.goer.NOM.SG agni.NOM.SG god.GEN.PL
      ‘Agni, going at the fore of the gods’
   e. RV 1.4.8b
ghanó ṛtrāṇāṃ abhavaḥ AHHHHLLA 68
slayer.NOM.SG obstacle.GEN.PL be.IMPF.2.SG

‘you became the slayer of obstacles’

f. RV 10.166.1c
hantāraṃ śátrūṇāṃ kṛdhi AHHHHHLA 108
slayer.ACC.SG enemy.GEN.PL make.IMP

‘make [me] the slayer of [my] enemies’

In all of these examples, the noun on which the genitive depends is patently verbal in nature: it is a participle in 1.27.1c, and an agentive noun in every other case. Furthermore, we can rearrange these lines to see whether alternative word orderings would perform better or worse within the parameters of the scansion.

<table>
<thead>
<tr>
<th>RV 1.27.01</th>
<th>scansion</th>
<th>scansion frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>observed:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(104)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>samrājantam adhvarāṇām</td>
<td>AHHHLHLHA 32</td>
<td></td>
</tr>
<tr>
<td>rearranged:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>adhvarāṇām samrājantam</td>
<td>ALHHHHHA 13</td>
<td></td>
</tr>
</tbody>
</table>

There are other similar cases involving nouns with a questionable degree of verbal influence. In the following examples, we observe the x-genitive order, but the noun is not morphologically derived from a verb.

(1) Objective genitives following other nouns

a. RV 1.44.2b = 8.11.2c
ágne rathír adhvarāṇām AHLHHLHA 64
agni.VOC.SG charioteer.NOM.SG ceremony.GEN.PL

‘O Agni, [you are] charioteer of the ceremonies’

b. RV 8.16.1a
prá samrājam carṣaninām AHHHHHLA 85
forth great.king.ACC.SG folk.GEN.PL

‘[promise] forth the supreme king of the folk’

Even though they are not morphologically deverbative, the nouns rathíś, ‘charioteer’ and samrāj ‘great king’ are agent nouns, so it is not surprising that they would seem to pattern with verbal nouns in the syntax.
In the first of these rearrangements, we see that the poet would not have greatly improved or worsened the line by choosing the alternative arrangement. The same is true for the last of these examples, though here we also observe that the poet passed up the opportunity to arrange the line with a very good scansion. Perhaps he was trying to preserve the x-genitive order for his verbal noun, perhaps he preferred not to place the main verb between the noun and its genitive, or maybe he was affected by a combination of factors. In any case, the results of this investigation seem to suggest that the natural ordering for this construction was genitive-x, except where the genitive was semantically the object of the noun, in which case the natural order was x-genitive.

5.2 The position of the gerund with regard to its subject

The Vedic gerund is a perfect active verbal adjective which would translate into English as “having X-ed.” According to Tikkanen, “Although the sentence-initial (or pre-gerundial) position of the (shared or main clause) subject is the rule in later Vedic and post-Vedic Sanskrit, post-gerundial position of the subject is nearly as frequent in the Rig- and Atharvaveda. (1987)” A situation like this stands out as a prime candidate for a metrically informed analysis. Given the evidence from later Vedic sources, it seems likely that post-gerundial subjects result from metrical convenience rather than from grammatical license. To test that hypothesis, let us first consider the distribution of both types in the context of metrical frequency. In the following table, gerunds functioning substantivally were excluded. Only gerunds modifying an expressed subject were considered.
Gerund vs. subject distribution in 8-syllable lines

<table>
<thead>
<tr>
<th>scansion</th>
<th>frequency</th>
<th>rank</th>
<th>subject gerund</th>
<th>gerund subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHHHLHLA</td>
<td>4930</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>ALHHLHLA</td>
<td>1979</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>AHHHLHHHA</td>
<td>92</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>AHHHHHHA</td>
<td>54</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AHLHLHHHA</td>
<td>53</td>
<td>5</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AHLHHHHA</td>
<td>43</td>
<td>6</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>AHHLLHHHA</td>
<td>30</td>
<td>7</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Among 8-syllable lines, the trend is clear with a slight deviation in the second ranking. Of those three gerund-subject instances, two postpose the subject to the beginning of the following line, forming what may be an introductory clause with the same grammatical status as its English translation. Both of these examples, along with their translations, are presented below.

(107)  

a. RV 8.92.6ab
asyá pítvā mádānāṃ ALHHLHLA 1979
this.GEN.SG drank.GND intoxicant.GEN.PL
“having drunk of the intoxicants of this one
dévō devásya ójasā AHHHLHLA 4930
god.NOM.SG god.GEN.SG power.INS.SG
god, the god with power…”

b. RV 9.23.7ab
asyá pítvā mádānāṃ ALHHLHLA 1979
this.GEN.SG drank.GND intoxicant.GEN.PL
“having drunk of the intoxicants of this [one],
índro vṛtrāṇi apratī AHHHLHLA 4930
Indra.NOM.SG obstacle.ACC.PL irresistible.ACC.PL
Indra [smote] irresistible obstacles…”

The third gerund-subject example, presented below, offers a chance for us to analyze alternative arrangements of the line in which it occurs.

(108)  

a. RV 1.4.8a
asyá pítvā śatakrato ALHHLHLA 1979 (rank 2)
this.GEN.SG drank.GND Śatakratu.NOM.SG
“Śatakratu, having drunk of this”

b. RV 1.4.8a rearranged
   asyá śatakrato pītvā ALLHLHHA 3
   śatakrato asyá pītvā AHLHHLHA 64
   śatakrato pītvā asyá AHLHHHHHA 43

As the rearrangements demonstrate, the poet had a metrical motivation to choose the gerund-subject order for this line, so we cannot accept the example as good, grammatical evidence. Let us therefore look further down the list. There is a large gulf between the second and third-ranked line patterns. Occurring only 92 times, the third-ranked line pattern here contains only subject-gerund tokens; the following example is one of these.

(109) a. RV 10.85.29c
   kṛtyaiśā padvātī bhūtvī
cast.WITCHCRAFT.NOM.SG + this.NOM.SG foot.having.NOM.SG become.GND
   AHHHLHHA 92 (rank 3)

   “this witchcraft, having gotten feet”

b. RV 10.85.29c rearranged
   bhūtvī kṛtyaiśā padvātī AHHHHHLA 108

Here we have a situation where exchanging the gerund with its subject affects the scansion very little, so it is reasonable to suppose that the attested arrangement is the grammatical one. Further down the list, in the-sixth ranked line pattern, we find the following example.

(110) a. RV 8.100.8c
   dīvaṃ suparṇó gatvāya AHLHHHHHA 43 (rank 6)
   heaven.ACC.SG fine.winged.NOM.SG go.GND
   “the fine-winged one having gone to heaven”

b. RV 8.100.8c rearranged
   dīvaṃ gatvāya suparṇó AHHHLLLHA 55
   suparṇó dīvaṃ gatvāya AHHHLHHA 12
   suparṇó gatvāya dīvaṃ AHHHHLLA 68
   gatvāya dīvaṃ suparṇó AHHLLHLHA 20
   gatvāya suparṇó dīvaṃ AHHLLHLA 11
None of these possible arrangements fares very differently from the attested verse, which would seem to indicate that the subject-gerund order is the preferred pattern.

Among 11-syllable lines, the situation is likewise very clear: though there are instances of gerund-subject order, they are restricted to the highest ranked scansion.

(111) Gerund vs. subject distribution in 11-syllable lines

<table>
<thead>
<tr>
<th>scansion</th>
<th>frequency</th>
<th>rank</th>
<th>subject gerund</th>
<th>gerund subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHLHHLHHLLHLHA</td>
<td>2313</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>AHHHLHHLHLHA</td>
<td>1388</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AHHHLHLLLHLHA</td>
<td>1231</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AHHLLLHHLHLHA</td>
<td>379</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AHLHLHHLHLHA</td>
<td>16</td>
<td>5</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AHLHLHLLHHHA</td>
<td>12</td>
<td>6</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AHHLHLLLHHLHA</td>
<td>3</td>
<td>7</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

The distribution of tokens in the top ranked line pattern shows us how, overall, both the subject-gerund and the gerund-subject types find a decent degree of representation in the text. We also see that the lower ranked lines show a clear preference for the subject-gerund order. The following example, taken from the top ranked line, shows how rearrangement affects a gerund-subject occurrence.

(112) a. RV 10.157.4a
hatvāya devā ásurān yād āyān AHHHHHLHLHLHA
kill.GND god.NOM.PL Asura.ACC.PL when come.IMPF.3PL
2313 (rank 1)

“when the gods came, having killed the Asuras”

b. RV 10.157.4a rearranged
devā hatvāya ásurān yād āyān AHHHLHHLHLHA 1231

The effect of rearrangement on the scansion of this line is negative though not detrimental.

There are not many examples among 12-syllable lines, and all of these show the subject-gerund arrangement.
The consensus here as well as the patterns outlined above all point towards the conclusion that the gerund naturally follows its subject, and only poetically precedes it.

5.3 Enclisis to vocatives

In one chapter of his dissertation, “Issues in the Placement of Enclitic Personal Pronouns in the Rigveda,” Wenthe endeavors to explain the syntax underlying a peculiar phenomenon: enclisis to a vocative noun. It is typically observed that syntax is blind to vocatives, i.e. that their occurrences are in some sense extra-syntactic and unlicensed. One implication of this situation is that we should not expect them to host enclitics. However, “out of 737 lines which contain unaccented vocatives adjacent to enclitic personal pronouns, only 73 vocatives precede the enclitic (roughly one in ten) (Wenthe 2013: 62).”

Let us analyze a cross-section of these instances within the context of scansion frequency. The 373 occurrences of the enclitic pronoun te in eight syllable lines breaks down thus.
Here we see that *te* is only hosted by vocatives in the most metrically optimal lines. The number of occurrences of the token (in either configuration) drops off sharply after the handful of highest ranked lines, as expected, but it is fairly well represented in the long tail of metrically inferior lines. We see a similar distribution among 11-syllable lines, where *te* occurs 464 times, as the following tables\(^2\) demonstrate.

\(^2\)Since there are only a few tokens to contextualize in each table, they have been abbreviated to save space. A full list of lines containing tokens can be found in Appendix C.
We see the same distribution for *te* among twelve syllable lines. Out of 178 occurrences therein, *te* is hosted by a Vocative three times in the second-ranked pattern, twice in the third through fifth, and once in the sixth and seventh.\(^3\)

Enclisis to vocatives is almost entirely restricted to metrically preferred lines. In fact there are only six lines with frequency values below 100 which also exhibit enclisis to a vocative. Of these, three are hypometric lines (1.120.6b, 5.035.2a, 10.160.5d). The remaining three lines (1.120.1a, 8.2.3c, 9.106.7c) do not seem to betray any other common characteristic. They might constitute evidence in favor of grammatical enclisis to vocatives, except that the overwhelming majority of enclitics hosted by vocatives occur in lines with very high frequencies; nor can these three lines be rearranged into better scansion while keeping the enclitic from being hosted by the vocative.

\(^3\)1.52.10b áyoyavīd bhīyasā vájra indra te: AHLHLLLHHLHLA: 662   
9.72.4d śucir dhiyā pavate sóma indra te: AHLHLLLHHLHLA: 662   
9.72.5b anuvśadhām pavate sóma indra te: AHLHLLLHHLHLA: 662   
1.55.7c yāmiśṭhāsaḥ sārathayo yā indra te: AHHHLLLHHLHLA: 650   
9.86.28c áthedām vīśvam pavamāna te váśe: AHHHLLLHHLHLA: 650   
9.107.20a utāhām nāktam utā soma te divā: AHHHLLLHHLHLA: 468   
6.43.1c ayām sā sóma indra te sutāḥ pība: AHLHLLLHHLHLA: 224
There seems to be no good evidence in favor of grammatical enclisis to vocatives. Therefore the phenomenon is more plausibly a result of poetic influence.

5.4 The position of áchā with regard to its object

Macdonell, in his Vedic Grammar for Students, says that “when used with substantives the genuine prepositions as a rule follow their case, while the prepositional adverbs precede it (1916: 285).” Let us explore this claim by applying the metrical method to one of these elements.

The adposition áchā, which Macdonell classifies as a prepositional adverb, tends to be attracted to the beginning or end of its pāda, obscuring our judgment of what its natural position may be. However, analyzing its distribution in the context of metrical quality, we observe that áchā actually behaves as a postposition more frequently as the probability of poetic manipulation decreases. There are not many occurrences of áchā among 8-syllable lines, but the tokens we do find establish the aforementioned pattern.

(117) Placement of áchā with regard to its object in 8-syllable lines

<table>
<thead>
<tr>
<th>Scansion</th>
<th>Frequency</th>
<th>Rank</th>
<th>áchā X</th>
<th>X áchā</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHHHLHLA</td>
<td>4930</td>
<td>1</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>AHLHLHLA</td>
<td>3316</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>AHLHLLLHA</td>
<td>168</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>AHHHHLHLA</td>
<td>85</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>AHHHLLHLA</td>
<td>55</td>
<td>5</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ALHHLHHLA</td>
<td>21</td>
<td>6</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
Although the majority of instances here show áchā preceding its object, these carry less weight because of the metrical environments where they occur. 11-syllable lines furnish more tokens to plot, and with one exception\(^4\) corroborate the trend found in the 8-syllable lines.

\(^4\)The counterexample in the twelfth-ranked line deserves a brief excursus. The adposition áchā takes samudrām for its object 5 times in the Rigveda: 1.130.5b, 3.33.2b, 6.30.4d, 9.64.16b, and 9.66.12a. In all five instances, áchā precedes samudrām. In RV 9.64.16b and 9.66.12a, this could easily be attributed to the lines’ highly ranked scansion, both of which suffer greatly when áchā and samudrām are exchanged.

(1) a. RV 9.64.16b
áchā samudrām āśāvaḥ AHLHLHLA 3316
to sea.ACC.SG swift.NOM.PL
“swift to the sea”
b. RV 9.64.16b rearranged
samudrām áchā āśāvaḥ AHLHHHLA 75
c. RV 9.66.12a
áchā samudrām índavo AHLHLHLA 3316
to sea.ACC.SG drop.NOM.PL
“the drops, to the sea…”
d. RV 9.66.12a rearranged
samudrām áchā índavo AHLHHHLA 75

But 3.33.2b suffers not at all when the phrase is reversed, and 1.130.5b and 6.30.4d are actually improved by the change.

(2) a. RV 1.130.5b
áchā samudrām asr̥jo ráthāṁ iva AHLHLLHLHLA 624
to sea.ACC.SG set.loose.2SG chariot.ACC.PL like
“you set them loose to the sea, like chariots”
b. RV 1.130.5b rearranged
samudrām áchā asr̥jo ráthāṁ iva AHLHHLLHLHLA 1190
c. RV 6.30.4d
ávās̥r̥jo apó áchā samudrām AHLLLLHLHLA 223
set.loose.2SG water.ACC.PL to sea.NOM.SG
“you set loose the waters to the sea”
d. RV 6.30.4d rearranged
ávās̥r̥jo apó samudrām áchā AHLHLHLHLA 512

So it would seem that, rather than being a counterexample to the evidence, this handful of examples may indicate that áchā samudrām is a formula.
(18) Placement of áchā with regard to its object in 11-syllable lines

<table>
<thead>
<tr>
<th>scansion</th>
<th>frequency</th>
<th>rank</th>
<th>áchā X</th>
<th>X áchā</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHLLHLHLHL</td>
<td>2313</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>AHLLHLHLHL</td>
<td>1670</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>1472</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>1388</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>1231</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>683</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>483</td>
<td>7</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>470</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>379</td>
<td>9</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>ALHHHLHLHLHL</td>
<td>360</td>
<td>10</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ALHHHLHLHLHL</td>
<td>287</td>
<td>11</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ALHHHLHLHLHL</td>
<td>223</td>
<td>12</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>ALHHHLHLHLHL</td>
<td>161</td>
<td>13</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ALHHHLHLHLHL</td>
<td>84</td>
<td>14</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ALHHHLHLHLHL</td>
<td>12</td>
<td>15</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

(19) Placement of áchā with regard to its object in 12-syllable lines

<table>
<thead>
<tr>
<th>scansion</th>
<th>frequency</th>
<th>rank</th>
<th>áchā X</th>
<th>X áchā</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHLLHLHLHLHL</td>
<td>1190</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>650</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>624</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>523</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>ALHHHLHLHLHL</td>
<td>161</td>
<td>5</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ALHHHLHLHLHL</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>AHHHLHLHLHL</td>
<td>5</td>
<td>7</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Once again, by analyzing individual examples in detail, we can see that the prevalence of one of the types that we see emerging in the lowest ranked lines is indeed the result of a dwindling poetic influence. Where the scansion is good and we suspect the arrangement to be ungrammatical, we find that rearrangement results in poorer scansion.

(10) a. RV 9.107.12d

áchā kóśam madhuścútam AHHHLHLHL 4930
to cup.acc.sg honey.dripping.Acc.sg
“to the cup dripping with honey”

b. RV 9.107.12d rearranged

kóśam áchā madhuścútam ALHHLHLHL 1979
kóśam madhuścútam áchā AHLHLHLHA 53

c. RV 1.6.6b
Conversely, where the scansion is poor, we only observe the arrangement we suspect to be grammatical. Rearrangements of these lines do not significantly improve them, which we expect since the poet appears to have taken the opportunity to rearrange his words where doing so would improve their scansion.

(121) a. RV 1.2.2b
   tuvā́m áchā jaritāraḥ AHHHLLHA 55
   you.ACC.SG to praiser.NOM.PL
   “the praisers to you”

b. RV 1.2.2b rearranged
   áchā tuvā́m jaritāraḥ AHLHLLHA 53

c. RV 4.1.2b
   devāṅ áchā sumatī yajñāvanasaṃ AHHHLLHHLLLA 5
   god.ACC.PL to favor.INS.SG loving.sacrifice.ACC.SG
   “[bring] with favor to the gods the one who loves the sacrifice”

d. RV 4.1.2b rearranged
   áchā devāṅ sumatī yajñāvanasaṃ AHHHLLHHLLLA 5

So the Rigvedic áchā seems to be a postposition, despite Macdonell’s observation. Looking at the tables above, however, it is easy to see how such misapprehensions can develop. Without noticing the tell-tale shift towards one type in the lowest-ranked lines, we are at the mercy of raw numbers, which, rather than an accurate picture of the grammar, more closely reflect the simple ratio of metrical slots into which certain arrangements can be fit.
5.5 The position of the copula in predicate nominative constructions

The verb in Rigvedic tends to occur finally, as in Latin, a similarity which invites us to consider another possible parallel. In Latin, the copula or “be” verb, unlike other verbs, occurs between its subject and the nominative noun or adjective in constructions of the type \( X \text{ is } Y \), i.e. predicate nominative constructions. So it is reasonable to suppose that Rigvedic, since it is genetically related to Latin, might share this feature. And indeed, a cursory glance at the distribution of the ‘be’ verb \textit{as-} seems to confirm that hypothesis. But without investigating the metrical environments of those occurrences, we cannot know how great a role the poetic filter may have played in altering the natural distribution.

In order to explore the distribution of the copula in the context of metrical frequency, it benefits us to limit our scope to examples with expressed subjects. This of course means that first and second person examples will be the easiest to isolate, since the subject cannot be anything other than the personal pronoun. There are only 28 examples of \textit{asmi} ‘I am’ in the Rigveda. The overwhelming majority of these examples show the expected predicate nominative pattern: \((ahām) \text{ asmi } X\). However, most occur in metrically preferred lines and not many of them express the first person subject. The tables below demonstrate the paucity of the data (there are no occurrences in 12-syllable lines), though the little information they contain does point toward one particular type.

<table>
<thead>
<tr>
<th>(122) Final vs. medial copula asmi in 8-syllable lines</th>
<th>scansion</th>
<th>frequency</th>
<th>rank</th>
<th>ahām X asmi</th>
<th>ahām asmi X</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHHHLHLA</td>
<td>4930</td>
<td>1</td>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>ALHLLHLA</td>
<td>691</td>
<td>2</td>
<td></td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>ALHLLLHLA</td>
<td>7</td>
<td>3</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
A trend emerges, but the sample size is minuscule. The second person singular is more fruitful, though again we face the problem that only a handful of the tokens occur in lines with infrequent scansion. The following tables catalog the positions of *asi* in lines with an expressed subject.

(124) **Final vs. medial copula in 8-syllable lines**

<table>
<thead>
<tr>
<th>scansion</th>
<th>frequency</th>
<th>rank</th>
<th>t(u)vámasi</th>
<th>t(u)vám asi X</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHHHLHLHA</td>
<td>4930</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>AHLHLHLHA</td>
<td>3316</td>
<td>2</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>ALHHLHLHA</td>
<td>1979</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>AHHLLHLHA</td>
<td>1362</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>ALHLLHLHA</td>
<td>621</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>ALLHLHLA</td>
<td>24</td>
<td>6</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ALLLHLHA</td>
<td>3</td>
<td>7</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

With so few examples, it is important to note the size of the difference between rankings five and six: the fifth ranked scansion here occurs 621 times, the sixth occurs 24 times, and the seventh occurs 3 times. There are only 4 examples in 11-syllable lines.

(125) **Final vs. medial copula in 11-syllable lines**

<table>
<thead>
<tr>
<th>scansion</th>
<th>frequency</th>
<th>rank</th>
<th>t(u)vámasi</th>
<th>t(u)vám asi X</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHHHHLLHLHLHA</td>
<td>1472</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>AHHHHLLLHLHLHA</td>
<td>1231</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>ALHLHLLLHLHLHA</td>
<td>133</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

In 12-syllable lines, the distribution breaks down thus.
Here again, the difference in scansion frequency in the lower ranks is great: the fifth ranked scansion occurs 161 times; the sixth occurs 13 times. With so few data points in the area where we need them, we cannot draw any conclusions at all without looking for evidence from rearrangement. There we consistently find that exchanging the copula and the predicate nominative yields the result we predict based on the metrical environment. In those few instances where the scansion is poor, the observed arrangement is always the one we predict to be grammatical: \( t(u)vám asi X \).

Where the scansion is good and we suspect the arrangement to be ungrammatical, we find that rearrangement mars the line’s scansion.
“you surround the gods”

b. RV 5.13.6b rearranged
devāṃs tvám asi paribhúr AHLLLALA 5

c. RV 8.11.1a
tvám agne vratapā asi AHHLHLALA 1362
you.NOM.SG Agni.VOC.SG law.protector.NOM.SG be.2SG

“O Agni, you are the law-protector”

d. RV 8.11.1a rearranged
tvám agne asi vratapā AHHLHLALA 27

e. RV 8.23.30a
ágne tuvāṃ yaśā asi AHLHLHLA 3316
Agni.VOC.SG you.NOM.SG glorious.NOM.SG be.2SG

“words”

f. RV 8.23.30a rearranged
ágne tuvāṃ asi yaśāḥ AHLLLLALA 5

Although the copula’s tendency towards medial position was only hinted at in the catalogs of distribution by metrical frequency, the evidence from rearrangement seems to corroborate the hypothesis that Rigvedic predicate nominative constructions naturally place the copula between the subject and the nominative noun.

5.6 Conclusion

In this chapter, I hope to have shown that meter and grammar often compete for accurate expression, and that verses with less frequently occurring metrical patterns show more consistency in their syntactic arrangements. None of the tables or rearrangements used in this chapter establishes the correlation by itself, especially since their sample sizes are too small to be significant individually. But the confluence of all these tables, the fact that their tokens tend towards one type as metrical frequency declines, supports the overarching correlation between poor scansion and more natural grammar.
Having established the efficacy of this method of investigation, we can now apply it to grammatical phenomena which do not so easily lend themselves to computerized searches. Chapter 6 will provide further remarks on syntactic structures in the Rigveda.
Chapter 6

Further remarks on grammatical patterns in the Rigveda

In this chapter I will highlight the merits of the method of Chapter 4 by remarking on a few observed phenomena in Rigvedic, namely its SOV word order, wh- movement, discontinuous constituents, and apparent scrambling, any of which could potentially be attributed to poetic manipulation. Therefore it will be necessary to inform future investigations of these phenomena with a preliminary conclusion, based on metrical analysis, as to whether the observation represents a grammatical process or a common post-syntactic alteration. I then turn to a less well established area of syntax: the left periphery.

The left periphery represents a cohesive complex of syntactic phenomena. Here the density of overlapping data more easily allows one solution to provide evidence for the next. Coupling generative assumptions with metrically informed observations, we will see that, contrary to the preliminary conclusions of Chapter 2, the Rigvedic left periphery does indeed behave in accordance with theory, exhibiting a structure similar to that responsible for V2 in German.
6.1 SOV

Rigvedic had long been described as SOV, but Gonda (1952) and Klein (1994) have demonstrated this statistically. In a subcorpus of Rigvedic, Klein finds about 62% of sentences to be verb-final, and about 20% to be verb-medial. He further categorizes the types of verb-medial sentences according to what material has been extraposed to the right of the verb. The following passages, for instance, exemplify the extraposition of single verbal arguments.

(129) RV 1.8.4c AHHLLHLA 1362

sāsahyā́ma pṛtanyatāḥ
conquer.OPT.1PL foe.ACC.PL

“let us conquer [our] foes” (OPT = optative)

(130) RV 1.5.8c AHHHLHLA 4930

tuvā́ṃ vardhantu no gíraḥ
you.ACC.SG strengthen.IMP.3PL our song.NOM.PL

“let our songs strengthen you”

(131) RV 1.8.9 AHLHLHLA 3316

sadyāś cit sánti dāśúše AHHHLHLA 4930
immediate INDF be.3PL worshipper.DAT.SG

“they are immediate for the worshipper”

As can be seen, none of these lines lends itself to grammatical trustworthiness, because they exhibit popular scansion patterns. Therefore, let us consider examples with less frequent scansion.

(132) RV 1.38.9c ALLHLHHA 3
yát pr̥thivíṃ viundánti
when earth.ACC.SG drench.3.PL

“when they drench the earth”

(133) RV 9.86.12b AHHHLHHLHLA 209

ágre vācó agriyó góṣu gachati
in.front.of hymn.GEN.SG foremost.NOM.SG cow.LOC.PL go.3SG

“at the forefront of the speech he goes, at the head of the cows”

The lower frequency counts of their scansion indicates that these lines might provide some grammatical insight. We can assume that the poet would have chosen the bestmetrical arrangement that maintains interpretability. But if no arrangement fits the prescribed meter well, giving the poet the freedom to place the verb medial or final, it is reasonable to assume that he would choose the placement that most aligns with the syntax of his language. The above lines, when rearranged to be verb-medial, exhibit more preferred scansion.

<table>
<thead>
<tr>
<th>scansion</th>
<th>scansion frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>yát viundánti pr̥thivíṃ</td>
<td>ALHHLLLA 81</td>
</tr>
<tr>
<td>ágre vācó gachati góṣu agriyó</td>
<td>AHHHLHHLHLA 650</td>
</tr>
</tbody>
</table>

It is impossible to inhabit the mind of the poet, who must often have had to negotiate the trade-off between meter and grammar, but these examples seem to constitute further evidence that Rigvedic was an SOV language, since that is the arrangement attested despite the fact that it resulted in inferior scansion. The lines above stood to be improved by placing the verb medially, but apparently not enough to license a distortion of the natural arrangement.

This is not to insinuate that sentence-medial verbs do not tend to occur in lines with inferior scansion; there are many such examples. Usually, however, the medial position of the verb can also be explained by the adverbial nature of the following element (e.g.
RV 9.86.1b), a marginal improvement in scansion (e.g. RV 5.2.1d, 2.25.4a, 6.65.2b, 9.97.34c), gapping (e.g. RV 10.89.8d), or wordplay (e.g. RV 9.113.5b). Those which are not so easily explained (e.g. RV 1.191.2b), I will take up later in this chapter.

### 6.2 Wh-movement

Without troubling ourselves to compare corpus with subcorpus, it is apparent that a wh-form in ká- almost always begins the sentence it occurs in. And whereas we observe preverbs raising into a position directly left of relatives in yá-, we never see this with ká-, even in the most metrically perfect lines. In the subcorpus, wh- forms in ká- are not very frequent, but those that do occur adhere strictly to a pattern consistent with wh-movement. In the following table, it is easily observed that the wh-forms (shown in boldface) are fronted.

(135) Wh-words in first position

<table>
<thead>
<tr>
<th>line</th>
<th>scansion</th>
<th>scansion frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.120.1b</td>
<td>kó vāṃ jóṣa ubháyoḥ</td>
<td>AHHLLLA</td>
</tr>
<tr>
<td>1.121.1a</td>
<td>kád ittā́ ṇṛṇṇḥ pāṭaram+ devayatām</td>
<td>AHHHHLHHLHLLA</td>
</tr>
<tr>
<td>4.25.1a</td>
<td>kó adyá· nāriyo devákāma</td>
<td>AHL-LHHLHHA</td>
</tr>
<tr>
<td>5.53.1b</td>
<td>kó vā purā́ sumnēṣu āsa marútām</td>
<td>AHLHHHHLLLHA</td>
</tr>
<tr>
<td>8.66.10a</td>
<td>kád ū mahír ādhṛṣṭā asya táviṣih</td>
<td>AHLHHLHHHLLLA</td>
</tr>
<tr>
<td>10.40.2a</td>
<td>kúha svid doṣā kúha vástor aśvínā</td>
<td>AHHHHLHHLHHLA</td>
</tr>
<tr>
<td>10.50.3a</td>
<td>ké té nára indara + yé ta iṣé</td>
<td>AHLHHLHHLA</td>
</tr>
<tr>
<td>10.99.1a</td>
<td>káṃ naś citráṃ iṣānyasi cikítván</td>
<td>AHHHLHLHLLA</td>
</tr>
</tbody>
</table>

(136) Wh-words out of first position

<table>
<thead>
<tr>
<th>line</th>
<th>scansion</th>
<th>scansion frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.88.3c</td>
<td>yuṣmabhyáṃ· káṃ marutah sujātās</td>
<td>AHL-HHLHLHHA</td>
</tr>
<tr>
<td>1.169.5b</td>
<td>prañétārah· káṣya cid ṭtáyóḥ</td>
<td>AHHHLHLLHHA</td>
</tr>
<tr>
<td>1.184.1c</td>
<td>násatiyā kúha cit sántāv aryó</td>
<td>ALLHLHHHHHA</td>
</tr>
<tr>
<td>2.42.1d</td>
<td>má tvá ká cid abhibhā víśvā vidat</td>
<td>AHHHHLHHHHLA</td>
</tr>
<tr>
<td>3.45.1c</td>
<td>má tvá ké cin ní yaman víṃ nā pāśíno</td>
<td>AHHHHLHHHHLA</td>
</tr>
<tr>
<td>5.83.9d</td>
<td>yát kíṃ ca pṛthivyām ádhi</td>
<td>AHHHLHLA</td>
</tr>
</tbody>
</table>
The apparent exceptions in the second table are of two types. Most of these exhibit the indefinite use of ká when it is collocated with ca or cit, which are analogous to the English collocations whatever, whoever, etc.; kám in 1.88.3c is an adverbial derivative (Macdonell 1916: 225).

It is not unreasonable to assume, given these observations, that Rigvedic exhibits movement of wh- elements into SpecCP, as English does.

### 6.3 Discontinuity

Some languages, to a greater or lesser extent, tolerate the discontinuity of certain phrases. German, for example, allows topicalization to break up a determiner phrase (DP), which is impossible in English, though English allows certain kinds of DPs to be split by CPs.

(137) Discontinuous DP in German

<table>
<thead>
<tr>
<th>Bücher</th>
<th>habe</th>
<th>ich</th>
<th>drei</th>
<th>gelesen</th>
</tr>
</thead>
<tbody>
<tr>
<td>book.PL.ACC</td>
<td>have.1SG</td>
<td>me.NOM.SG</td>
<td>three</td>
<td>read</td>
</tr>
</tbody>
</table>

“I have read three books”

(138) Discontinuous DP in English

here is the picture that I framed of the two of us

The Rigveda is riddled with discontinuous DPs, such as ebhír arkaír ‘with these songs’ in the following line. Note the metrical infrequency of those arrangements which keep the DP together; most instances of discontinuity, such as the following, do not constitute good evidence for the phenomenon in the syntax of Rigvedic, because they betray metrical motivation.

(139) RV 4.3.15a
“be gracious, O Agni, with these songs”

<table>
<thead>
<tr>
<th>RV 4.3.15a</th>
<th>scansion</th>
<th>scansion frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ebhír</strong> bhava sumánā agne <em>arkaír</em></td>
<td>AHLLLLHHLHA</td>
<td>223</td>
</tr>
<tr>
<td>other possible permutations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ebhír arkaír bhava sumánā agne</td>
<td>ALHHLLLLHHA</td>
<td>0</td>
</tr>
<tr>
<td>ebhír arkaír sumánā bhava agne</td>
<td>ALHHLHLHLHA</td>
<td>5</td>
</tr>
<tr>
<td>sumánā bhava ebhír arkaír agne</td>
<td>ALHLLHLHHHA</td>
<td>0</td>
</tr>
<tr>
<td>sumánā bhava ebhír arkaír agne</td>
<td>ALHLLHLHHHA</td>
<td>0</td>
</tr>
<tr>
<td>sumánā bhava agne ebhír arkaír</td>
<td>ALHLLHHHLHA</td>
<td>5</td>
</tr>
</tbody>
</table>

Paring down the corpus and using metrical data as evidence will allow us to make either a case against the grammaticality of discontinuous phrases in Rigvedic or a more reliable case in their favor. As it turns out, the latter possibility seems to hold, for even among lines with very infrequent scansion, we still observe discontinuity.

(140) RV 1.52.4d ALHLLHLHLHLA 3

<table>
<thead>
<tr>
<th>svuṣmā</th>
<th>índraṃ</th>
<th>avātā</th>
<th>śnutings.NOM.PL</th>
<th>Indra.ACC.SG</th>
<th>unextinguishable.NOM.PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>áhrutapsavah</td>
<td>whose.breaths.are.undivertable.NOM.PL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(141) RV 10.26.9a AHLHHLA 7

<table>
<thead>
<tr>
<th>asmákam</th>
<th>ुरjā</th>
<th>rátham</th>
<th>our</th>
<th>might.INS.SG</th>
<th>chariot.ACC.SG</th>
</tr>
</thead>
</table>

And although neither line can be improved by rearrangement, these are not the only possible arrangements the poet could have chosen.

(142) RV 1.52.4d rearranged

| índraṃ svuṣmā avātā áhrutapsavah | AHHLLLHLHLHLA 16 |

(143) RV 10.26.9a rearranged

| asmákam rátham ुरjā | AHHLLHA 15 |
As demonstrated above, it would have been entirely possible for the poet to maintain the contiguity of the DPs without further damaging the meter of the line. These situations are pervasive in the subcorpus, and so it seems that discontinuous DPs are indeed grammatical in Rigvedic. However, having yet to find an instance where rearrangement significantly improves the lines, we can say that discontinuity in DPs must have been optional. For, if the poet were ever obligated to split a DP at the expense of the meter, then rearrangement might be able to improve the line. But if the poet always had the option to split a DP or keep it intact, we should expect him always to have chosen whichever had the better scansion (except where semantic consequences like topicalization etc. must be considered).

6.4 Scrambling

Scrambling was explored in Chapter 3 as a possible explanation for the instability of word order in Rigvedic. If it is defined to encompass post-syntactic processes, operating on well-formed syntactic output, scrambling is obviously ubiquitous in the Rigveda. This is why, in this work, I limit the definition of scrambling to encompass only syntactic processes, like those which operate in Modern German and Russian. Such processes may have been as common a phenomenon in spoken Rigvedic as in those modern languages. An investigation into the existence of a grammatical scrambling phenomenon in Rigvedic is therefore warranted.

It may, however, be very difficult to determine whether optional, grammatical scrambling exists in Rigvedic. For it is obvious that the rich case system of the language allows the poet a great degree of freedom for consciously rearranging syntactic objects within the constraint of intelligibility, and that this freedom mirrors the effects of any would-be grammatical scrambling. If grammatical scrambling exists, we may observe different
kinds of arrangements in the metrically inferior lines, but only in situations where our own rearrangement cannot improve the meter of the line. This is because grammatical scrambling would be just another tool to the poet: if two arrangements (one scrambled, one unscrambled) are equally grammatical, then he should always choose the one that makes the best verse. We might sometimes expect to find interactions with information structure (topic and focus effects) in those cases, but these would be difficult to discern given the poetic nature of the corpus and the lack of native speakers. If grammatical scrambling does not exist, we may observe among the metrically inferior lines a preference for one particular kind of arrangement. In fact the subcorpus of metrically dispreferred lines shows a strong tendency towards placing the dative before the accusative, as in the following examples.

(144)  a. RV 1.103.4d ALHHLLHHL A 2

yád dha súñúḥ śrávase náma dadhé
when FOC “son” glory.DAT.SG name.ACC.SG give.PRF-3.SG

“when he gave [himself] the name ‘son’ for glory!”

b. RV 6.67.11d AHHLHLLHLLA 5

dhrśnúṃ yád ráṇe vṛśaṇam yunájan
bold.ACC.SG when battle.DAT.SG bull.ACC.SG yoke.3.PL.SUBJ

“when they will yoke the bold bull for battle”

c. RV 10.175.3c AHLLHHL A 11

vṛśne dádhato vṛśniyam
bull.DAT.SG putting.NOM.PL virility.ACC.SG

“granting virility to the bull”
This tendency toward dative-accusative arrangement indicates that this is the unmarked word order. So we may tentatively posit that grammatical clause-bound scrambling like the kind found in German does not occur in Rigvedic, though this says nothing against a type of scrambling that could account for discontinuous constituents.

In Chapter 3, we also noted that long-distance scrambling appeared to be grammatical in Rigvedic. The relevant examples are repeated here.

(145) Long-distance scrambling in Rigvedic

a. 1.161.3a

agniṃ dūtām práti yád ábravītana
Agni.ACC.SG messenger.ACC.SG back REL.ACC.SG speak.IMPF.2.PL

“what you answered to Agni the messenger”

b. 10.96.2a

hāriṃ hí yónim abhí yé samásvaran
golden.ACC.SG FOC womb.ACC.SG towards REL.NOM.PL together.sound.IMPF-3.PL

“those who sang together towards the golden womb”

In these examples, we see nouns and preverbs crossing a clause-boundary to escape an embedded CP. This could be considered long-distance scrambling, though I will avoid that term when dealing with the phenomenon; instead I will only discuss the arrangement in terms of the movements which bring it about. Since these effects occur at the edges of embedded CPs, we can enfold them in the discussion of the left periphery, which is the purpose of the following section.
6.5 The Rigvedic left periphery

In Chapter 2, I showed that Hale’s model of the left periphery, though it achieved descriptive adequacy, did not conform to theoretical principles. Now that we are freed from the burden of modeling consciously manipulated (i.e. contaminated) data, it may be possible to account for the structures found in the subcorpus of metrically inferior lines in a way that accords with the theory.

As I mentioned in Chapter 2, Hale’s account deviated from the theory in order to explain a construction in which a complementizer was preceded by two elements originating within the embedded CP.

(146) RV 1.110.2a AHLH||LL|HHLHLA 662

ābhogáyam| práj [ yád t i ichánt-a t j aítana ]
nourishment.ACC.SG forth when seeking.NOM.PL go.IMPF.2SG

“when, seeking nourishment, you went forth …”

The implications of assuming these constructions to be grammatical are far-reaching, so we ought to be fairly certain of their grammaticality. But after paring down the corpus to isolate metrically inferior lines, one notices the absence of any such patterns resembling that in (146). Indeed this particular construction exists only in more metrically preferred, less trustworthy lines, all of which are presented below (brackets have been added).
Furthermore, the attested occurrences of those patterns betray metrical motivation. If we rearrange these lines to look like what we see in the metrically inferior subcorpus, the quality of their scansion invariably fails, just as these rearrangements of (146) fail.

<table>
<thead>
<tr>
<th>line</th>
<th>scansion</th>
<th>scansion frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.73.6a</td>
<td>pratnán mánād ádhi ā [ yé samásvaṇa]</td>
<td>AHHHLLHHLHLA 523</td>
</tr>
<tr>
<td>1.110.2a</td>
<td>ābhogáyam prá [ yád ichántra áfitana]</td>
<td>AHLHLLHHLHLA 662</td>
</tr>
<tr>
<td>1.161.3a</td>
<td>agnīṃ dūtāṃ práti [ yád ábravítana]</td>
<td>AHHHLLLHHLHLA 468</td>
</tr>
<tr>
<td>5.32.1c</td>
<td>mahántama indra párvatáṃ ví [ yád váḥ]</td>
<td>AHHHHLHLHLHA 512</td>
</tr>
<tr>
<td>6.15.14c</td>
<td>ṭtá yajási mahiná ví [ yád bhúr]</td>
<td>AHHHLLLHHLHA 1374</td>
</tr>
<tr>
<td>5.15.2d</td>
<td>jātaír ájátaḿ abhí [ yé nanakśúḥ]</td>
<td>AHHHLLLHHLHA 2313</td>
</tr>
<tr>
<td>7.103.2a</td>
<td>divyá āpo abhí [ yád enam áyan]</td>
<td>AHHHLLLHHLHA 1231</td>
</tr>
<tr>
<td>10.123.8a</td>
<td>drapsáḥ samudrám abhí [ yáj jígáti]</td>
<td>AHHHLLLHHLHA 1374</td>
</tr>
</tbody>
</table>

Furthermore, the attested occurrences of those patterns betray metrical motivation. If we rearrange these lines to look like what we see in the metrically inferior subcorpus, the quality of their scansion invariably fails, just as these rearrangements of (146) fail.

<table>
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<tbody>
<tr>
<td>RV 1.110.2a</td>
<td>ābhogáyam prá yád ichántra áfitana</td>
<td>AHHHLLHHLHLA 662</td>
</tr>
<tr>
<td>other possible permutations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RV 6.15.14c</td>
<td>ṭtá yajási mahiná ví yád bhúr</td>
<td>AHHHLLLHHLHA 1374</td>
</tr>
<tr>
<td>other possible permutations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1This metrical pattern seems to work well enough, but the positioning of ābhogáyam prevents the line from achieving a good caesura. The caesura, which requires a word boundary, occurs after the fourth or fifth syllable in the line, but the nearest word boundaries in this example are after the second syllable and after the sixth.
Therefore we can be justified in disregarding these examples as intelligible but ungrammatical, which alleviates much of the complication faced in Chapter 3. The impetus for positing multiple specifiers is gone, and the left periphery’s resemblance to that of German becomes closer.

The evidence of the metrically inferior lines does not require an account of multiple extraction. However, it does strongly suggest that movement of a single element out of the embedded CP to a position immediately left of the relative pronoun must be grammatical in Rigvedic. Not only do we observe such patterns in the more trustworthy subcorpus, but we also find instances where the poet’s choice of whether to move such an element would not have affected the frequency of the line’s scansion.

---

5.15.2d  
| jātaír ájātāṁ abhí yé nanakṣūḥ | ALHHLHLLHHA | 2313 |
| other possible permutations |
| abhí yé jātaír ájātāṁ nanakṣūḥ | ALHHHLHHLHA | 161² |
| abhí yé ájātaír nanakṣūḥ njātaír | ALHLHHHHLHA | 3 |
| abhí yé ájātaíṁ njātaír nanakṣūḥ | ALHHLHHLLHA | 2 |
| abhí yé nanakṣūḥ njātaír njātaír | ALHLHLHHHHA | 0 |
| abhí yé nanakṣūḥ njātaír njātaír | ALHLHLLHHHA | 2 |
| abhí yé nanakṣūḥ njātaír njātaír | ALHLHLLLHHA | 2 |

---

(149)  

RV 4.55.2b  
| ví yád uchān viyotárahamúrāḥ | ALHHLHLLHHA | 13 |  
| rearranged: |  
| yád ví uchān viyotárahamúrāḥ | ALHHLHLLHHA | 13 |  

RV 6.67.11c  
| ánuyádgāva sphurán gjipyām | ALHHHLHLHHA | 5 |  
| rearranged: |  
| yád gáva ánuyádgāva sphurán gjipyām | AHLLHLHHLHA | 8 |  

²This metrical pattern seems to work well enough and achieves a good caesura, however the scansion of the attested arrangement is far better preferred.
And so we must account for this movement in the syntax. SpecCP is the most obvious candidate for the landing site, but it can only host the moved element if it is not occupied by the relative pronoun itself, as it is in English. The following tree diagram demonstrates the situation in English.

(150) English: *this is the person whom I saw*

```
CP
  /\
whom, [Wh]
 /   
C[\uWh\*]
  /   \  C'[\uWh\*]
   /     I saw t_i
   TP
```

Here we see that the strong, uninterpretable wh- feature on C triggers the phrase containing the answering wh- feature to move. Since an entire phrase is moving, it has to be housed in SpecCP. With the wh- feature on C now checked, no other such movements can occur. There are many possible solutions to this raising problem, but the following explanation should account not only for the raising of preverbs but also for several other key observations of the relative's behavior.

I will now argue that *yá-* does not occupy SpecCP at all, but rather C itself. We expect this to be the case for complementizers derived from the pronoun, but observations of both kinds of clauses indicate that the complementizers and the inflected relative pronouns appear to share the same distribution. The mechanisms by which they find themselves in C, however, must be different, the complementizers being base-generated there and the inflected relatives undergoing head-movement into C (like the finite verb in German V2). There must be a strong uninterpretable feature on the C of embedded clauses that triggers head-movement of the relative into C; let us provisionally label this [uRel\*]. In addition
there must be a strong feature on the C of embedded clauses that triggers the movement of an element into SpecCP; let us provisionally label this \([uX^*]\). Thus the skeleton of Rigvedic’s clause structure seems to be as follows.

\[
\text{(151) Complementizer base-generated in C}
\]

\[
\begin{align*}
\text{CP} & \quad \text{PreV}_i[X] \quad \text{C'}[uX^{\pm}] \\
 & \quad \text{C}^0 \quad \text{TP} \quad \text{yád} \quad \text{t}_i \ldots V
\end{align*}
\]

\[
\text{(152) Relative moved into C}
\]

\[
\begin{align*}
\text{CP} & \quad \text{PreV}_i[X] \quad \text{C'}[uX^{\pm}] \\
 & \quad \text{C}^0 \quad \text{TP} \quad \text{yá}_j[\text{Rel}] \quad \text{C}[u\text{Rel}^\pm,uX^*] \quad \text{t}_j \text{t}_i \ldots V
\end{align*}
\]

As we discussed earlier, it is easily established that Rigvedic exhibits wh-movement, and we can ascribe to it the usual landing site of SpecCP without controversy. But whereas \(ká\)- is never preceded by a raised preverb, preverb raising seems to be obligatory with \(yá\)-.\(^3\) Once again, this is not so surprising where we expect \(yá\)- to have been base-generated in C, leaving SpecCP open as a landing site, but we see the same compulsory raising to be triggered by the inflected relative. Thus it would seem that although interrogatives in Rigvedic are true wh- words (like in English), relatives are not (unlike in English).

\(^3\)Exceptions to this rule can be found, but insofar as the exceptions follow patterns of their own, they warrant more careful investigation into their specific mechanisms rather than an overhaul of the general rule. For example, the verb \(ud\) is unusually closely collocated with its usual preverb \(ṿ\); they do not separate for any reason, including the attraction of the relative.
This yā-in-C analysis predicts a ban on pied-piping, the phenomenon which in English is responsible for the optionality of preposition stranding with wh-relatives.

(153) a. that is the book [in [which]], I found the note t;
b. that is the book [which], I found the note [in [t,]]

The preposition in these English examples has the option of following its wh-object into SpecCP, which is only possible because the specifier position can accommodate phrases. If the relative head alone had been moved into C (as I am proposing for Rigvedic), only the second (surface) structure would be possible. If this is the case for Rigvedic, then we should not expect to find any such material raising along with the inflected relative. Finding evidence to bear on this prediction is difficult: only a handful of inflected relatives act as objects of adpositions, and those that do occur in metrically favorable lines. All of these, however, do show stranded prepositions.4

(154) Relative adposition stranding
   a. RV 1.23.17b AHHHLHLA 4930
      yābhir vā sūriyaḥ sahá
      REL.ins.pl or sun.NOM.SG with
      “or [those] with which the sun [is]”
   b. RV 8.92.20a AHHLLHLA 4930
      yāsmin víśvā ádhi śrīyo
      REL.loc.sg all.NOM.PL over glory.NOM.PL
      “over whom all glories [are]”

The yā-in-C analysis also makes predictions about how the phenomenon of “successive cyclicity” might appear in Rigvedic. In English, successive cyclicity is what allows structures like the following.

---

4There are also a few apparent counterexamples in 1.141.5a, 2.16.2a, for which see Grassmann’s ninth definition for yā- (1873:1065). The possible counterexample in 1.18.7a, yāsmād ōtē nā śīdhyati, “without whom [it] does not succeed,” is ambiguous: the adposition ōtē may or may not have moved.
Here we see that the relative pronoun in the lowest SpecCP, since it has been moved to the edge of that phase, is accessible to the next higher phase and can move again, thus the two traces. However in Rigvedic, if yá-in-C is true, we would expect the next higher phase to target just the relative pronoun yá- in C (the phase-head, which is part of the edge of the phase) for movement, possibly leaving the raised preverb in SpecCP stranded because it does not bear the [uWh] feature the probe in the higher phase is looking for. We might speculate that successive cyclicity in Rigvedic could lead to a chain of stranded preverbs.

No discussion of the left periphery would be complete without an exposition of topic and focus. Unfortunately, the explanation of this particular area of the left periphery is inordinately affected by a lack of native speakers. The semantic/pragmatic effects of topic and focus can be subtle, and the context of the hymns is not always helpful in determining whether a particular fronting was intended to convey contrast or presentation. Poetic manipulation also interferes with our understanding of Rigvedic topic and focus because we cannot always know whether an element was moved in the syntactic derivation or afterwards. Topicalization and focus fronting could also be seen as grammatical (not just intelligible) metrical conveniences, like word choice.

That said, paring down the corpus and the ability to search for metrically indifferent arrangements, will aid us in the investigation of focus phenomena, but it is especially fortunate that Rigvedic contains a number of overt particles whose functions and distributions can help us to map topic and focus in the left periphery. One of the most common exemplars is the focus particle ́id. This particle usually cooccurs with fronting, and directly follows the element on which it confers its sense. The following examples typify its usage.
(156) Usage of īd

a. RV 1.27.3c

pāhī sādam īd viśvāyuḥ
protect.2.SG.IMP constantly FOC all.life.ACC.SG

“protect [us] CONSTANTLY, for [our] entire life”

b. RV 8.071.02c

tuvām īd asi kṣāpāvān
you.NOM.SG FOC be.2.SG guardian.NOM.SG

“YOU ALONE are the guardian”

The crucial observation for this particle is that it can also occur within an embedded clause, yielding the surface order yā- X īd .... And we do not observe fronted elements with īd occurring left of the relative, focusing extracted material, as in * X īd yā- .... These facts point to the existence of a focus phrase (FocP) directly below CP, of which īd is one possible head.

(157) RV 1.84.7a

yā éka īd vidāyate ...
REL.NOM.SG alone FOC distribute.3SG

“he who ALONE distributes ...”

(158)
The above analysis accounts for the behavior of īd within relative clauses. Interestingly, we nowhere find focus fronting with īd cooccurring with the raising of elements into the embedded SpecCP, as in: X yā- Y īd …. If no examples can be found, or if more evidence comes to light, then there may be a blocking effect to investigate. Until then, however, we may predict that such structures could be grammatical but are unattested.

At this point a clear picture of the Rigvedic left periphery comes into view. The wh-forms in kā- must be categorically distinct from relatives in yā-. There must be a strong uninterpretable feature on the C of embedded clauses that triggers head-movement of the relative into C, and there must be a strong feature on the C of embedded clauses that triggers the movement of an element into SpecCP. We are left to speculate on the specific nature of that feature (which we labeled [uX*]). It must be formulated so as to account for the attraction of preverbs or nouns from within the TP downstairs, in which regard the structure greatly resembles V-to-T-to-C and XP-to-SpecCP analyses proposed to explain German V2.

6.6 Conclusion

In this chapter, I hope to have provided further evidence in favor of the grammaticality of SOV, wh-movement, and discontinuous constituency in Rigvedic, and to have cast doubt on the grammaticality of Germanesque argument scrambling. While establishing the grammaticality of an observed phenomenon is a necessary first step towards formulating it in a syntactic account, this support only scratches the surface of these phenomena. However, in the account of the Rigvedic left periphery presented here, I hope to have not only demonstrated the power of this method of investigation for discriminating grammatical from ungrammatical patterns in poetry, but also to have formulated a theoretically consistent account.
The accuracy of these claims and the efficacy of the method by which I arrived at them represent a potentially important development for the syntactic reconstruction of Indo-Iranian. It remains to expand this method both longitudinally, by continuing to apply it and through application to refine the method itself; and laterally, by applying the method to other languages.
Chapter 7

Conclusion

7.1 Future research

A great advantage of the investigation method laid out in this work is that it can apply *mutatis mutandis* to a poetic corpus in any language; of course the specifics of those investigations would depend on the poetic tradition of the language. But insofar as poetry resembles a language game, altering well-formed syntactic output to conform to an artificial pattern, applying the premise of this method—that metrical optimality correlates inversely with grammatical accuracy—will allow us to sort through verses and separate the grammatical wheat from the poetic chaff.

7.1.1 Getting syntax out of Latin poetry

The quantitative meters of Latin poetry work somewhat differently from those of Vedic. For one thing, they do not fix the number of syllables but rather the number of feet. This allows for a different—and in some ways greater—degree of metrical freedom, such
that the parameters of a “good” line are looser and more easily attained. Rather than striving towards one or two canonical verse patterns, Latin poets worked within a flexible framework. For example, dactylic hexameter (the meter of Latin epic poetry) prescribes a verse of 6 feet, the first 5 of which may be either dactyls or spondees\(^1\), the last being a spondee. The examples below showcase the two extremes of these possibilities.

(159) Latin dactylic hexameter

spondaic  H H | H H | H || H H | H H | H A  
dactylic  H L L | H L L | H L || L | H L L | H L L | H A  

etc.

Poets like Vergil and Ovid were able to follow these guidelines fairly precisely, so that their poetry consists almost entirely of well-behaved lines. That is not to say that some patterns will not be more frequent than others, but it does change the dynamic of the analysis: there are only 5 feet which can vary between dactyl and spondee, allowing for only 32 different scansion patterns for well-behaved lines\(^2\). Furthermore, less well-behaved lines may be too rare to count on for grammatical insights, at least within the work of a single author.

\(^1\)The overwhelming majority of dactylic hexameter lines show a dactyl in the fifth foot. Spondees in this position are rare but do occur.

\(^2\)In treatments of Latin verse, commentators typically note that certain syllables must be read with the opposite natural length of the vowel, rather than that the meter might be defective. In Aeneid 8.98, for example, the \textit{u} of \textit{prōcūl}, which is short by nature and by position, occupies a place in the scansion which ought to be long. The opposite can also be true, as in Aeneid 7.359, where the first \textit{a} of \textit{Lāvinīā} is long by nature, but the meter requires it to be short.

Aeneid 8.98

\begin{verbatim}
cummurosarcemqueproculacraradomorum
\end{verbatim}

HH HH HLL LH HLL HA

Aeneid 7.359

\begin{verbatim}
extulusbusnedaturducendalaviniaTeucris
\end{verbatim}

HLL HLL HH HLH HLL HA

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Even so, we can draw conclusions by observing the distribution of tokens, and comparing alternative arrangements of the lines in which they occur, in order to discover metrical motivations for word-order variation. Let us take the use of the Latin copula with predicate adjectives as an example. We should expect to find the order Noun-Adjective-Copula (Adams 1994: 14), as in the following examples.

(160) Cato
   a. De Agricultura 4.1
      frons occipitio prior est
      face.NOM.SG back.of.the.head.ABL.SG prior be.3SG
      “the face is preferable to the back of the head”
   b. De Agricultura 41.1
      ea optuma est
      it.NOM.SG best.NOM.SG be.3SG
      “it is best”

(161) Cicero
   a. Pro Rosc. 57
      hoc populo gratissimum est
      this.NOM.SG people.DAT.SG most.gracious.NOM.SG be.3SG
      “this is most gracious for the people”
   b. Pro Sul. 39
      hoc perspicuum est
      this.NOM.SG evident.NOM.SG be.3SG
      “this is evident”

However, the epic poets use multiple arrangements for predicate adjectives, such as those presented below.

(162) Noun-Adjective-Copula: Ovid’s Metamorphoses 1.612
   bos quoque formosa est
   cow.NOM.SG also beautiful.NOM.SG be.3SG
   “the cow is also beautiful”

---

3This phrase is a proverb, with the sense that more work is done when the master is present (see Oxford Latin Dictionary s.v. *occipitium*).
Based on the prose comparanda, we can suppose that these poets' natural arrangement for this construction would have been the same as Cicero's, Caesar's, and Pliny's. But, having established the inverse link between poetic optimality and grammatical accuracy, we can demonstrate the metrical motivation exerted on these examples by rearranging them. In the tables below, the altered feet are shown in boldface.  

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4In these examples, the entire line has been provided in order to show the full metrical context.
In the first of these examples, the rearrangement leads to two entirely defective feet; in the second, it places a spondee in the fifth foot. While spondees in the fifth foot do occur, poets greatly preferred to have a dactyl in that position. Since the last example uses more words, it has many more possibilities for rearrangement. However it is not necessary to analyze all of these possibilities, because multiple will fail for the same reasons. For instance, in any arrangement beginning with *pater*, *est* must come second, because any other word in the sentence would cause the second syllable of *pater* to be long, thus yielding a bad foot. Nor can *est* end this line, because none of the other words in the sentence end with a syllable that is long by nature, so none of those possibilities could achieve the final spondee. So it is clear that in these instances, the poets, ever striving to conform to their medium, had no obvious path towards what we suspect to be the natural, grammatical expression of predicate adjective constructions, and therefore consciously altered their utterances.

7.1.2 Getting syntax out of Greek poetry

As is the case with Vedic, some of the oldest attestations of Greek come to us in the form of poetry, namely the *Iliad* and the *Odyssey*. The language of these epics, commonly referred to as Homeric, is an amalgam of dialects and periods, but its archaic nature makes it one of the cornerstones of Indo-European linguistics (Fortson 2010: 249).

As with Latin, we can see how metrical considerations seem to affect word order in Homeric Greek, even without a full treatment of the corpus’s scansion. For example, let us observe the distribution of the infinitive *ēivai*, ‘to be.’ In the prose of Thucydides (writing in the fifth century BCE), *ēivai* occurs both within clauses and at the ends of clauses, though he uses it within the clause about twice as often. The same is true for Herodotus (also writing in the fifth century BCE), except that he uses *ēivai* within the clause three times as often. The following examples give both arrangements.
Herodotus, Histories 1.8

ενόμιζε οἱ εἶναι γυναῖκα πολλὸν πασέων
consider.IMPF.3SG he.DAT.GS be.INF woman.ACC.SG by.far all.GEN.PL
καλλίστην.
most.beautiful.ACC.SG

“he considered [her] to be by far the most beautiful woman of all” (AOR = aorist)

Herodotus, Histories 2.9

... ως ἡγὼ ἐπυνθανόμην ... τὰ δὲ πρὸς τὴν
as me.NOM.SG learn.AOR.1SG the.ACC.PL but towards the.ACC.SG
ἡ ἱβανωτοφόρα αὐτοῦ τὰ τέρματα
east.ACC.SG bearing.frankincense.ACC.PL there the.ACC.PL boundary.ACC.PL
εἶναι.
be.INF

“...as I learned...the eastern boundaries there to be rich in frankincense.”

To explain this distribution there may be some stylistic influence, grammatical free variation, or a syntactic difference between medial and final instances of εἶναι. In any case, a survey of these authors’ prose might answer these questions to our satisfaction. However, we could not without reservation apply those findings to the language of the epics, since they were composed hundreds of years earlier and in particular because their syntax appears to differ from the later prose. When we investigate the distribution of εἶναι in Homeric Greek, we find two patterns. In the overwhelmingly more frequent pattern (45 out of 61 non-repeated occurrences in the Iliad), εἶναι occurs at the end of a verse, which typically coincides with the end of a clause, as in the following examples.

Iliad 1.91

δὲς νῦν πολλὸν ἄριστος Ἀχαιῶν εὔχεται εἶναι
REL.NOM.SG now by.far best.NOM.SG Achaean.GEN.PL boast.3SG be.INF

“...who now boasts to be the best by far of the Achaeans”

Iliad 11.20

τὸν ποτὲ οἱ Κινύρης δῶκε ξεινήϊον
REL.ACC.SG once he.DAT.SG Kinyras.NOM.SG give.AOR.3SG guest.gift.ACC.SG
εἶναι
be.INF
“...which Kinyras once gave him to be a guest-gift”

Here, as in Latin, the meter is dactylic hexameter. When εἶναι occurs at the end of the line, it makes up the final spondee in the scansion. But since the poet is free to place spondees anywhere, it may seem too great a coincidence that this particular spondee tends to show up clause-finally. Furthermore, in a significant minority of cases, (11 non-repeated lines out of 61), εἶναι does not occur finally but rather before a line-final trisyllabic sequence, where it forms the metrical structure HLLHA. These instances, presented below, appear to be formulaic in nature.

(173) Non-final εἶναι in the Iliad:

a. 5.173: οὐδὲ τις ἐν Λυκίῃ σέο γ’ εὔχεται εἶναι ἀμείνων.
b. 6.350: ἀνδρὸς ἐπειτ’ ὄφελλου ἀμείνονος εἶναι ἄκοιτις,
c. 6.388: τεῖρεσθαι Τρῶας, μέγα δὲ κράτος εἶναι Ἀχαιῶν.
d. 8.229: πῆ ἔβαν εὐχωλαί, ὡτε δὴ φάμεν εἶναι ἀριστοί,
e. 9.103: αὐτάρ ἐγὼν ἐρέω ὡς μοι δοκεῖ εἶναι ἄριστα.
f. 12.103: οἳ γάρ οἳ εἴσαντο διακριδὸν εἶναι ἄριστοι
g. 12.215: νῦν αὐτ’ ἐξερέω ὡς μοι δοκεῖ εἶναι ἄριστα.
h. 13.735: αὐτάρ ἐγὼν ἐρέω ὡς μοι δοκεῖ εἶναι ἄριστα:
i. 15.108: κάρτεΐ τε σθένεΐ τε διακριδὸν εἶναι ἄριστος.
j. 23.595: ἐκ θυμοῦ πεσέειν καὶ δαίμοσιν εἶναι ἀλιτρός.
k. 23.669: πυγμῇ νικήσαντ’ ἐπεὶ εὐχόμαι εἶναι ἄριστος.

In each of these cases, εἶναι forms part of a dactyl in the fifth foot (the diphthong αι here is treated as a short vowel plus a glide consonant). So it appears that the position of the infinitive in all these examples is subject not exclusively to the grammar of the language, but also to the meter of the line. It appears that the poet’s syntax compels him to place the infinitive at the end, but for the sake of the meter he may exchange it with the preceding word, so long as that word has the metrical shape LHL or LHH.
7.2 Contributions and problems

For those interested in the syntax underlying poetry, there has always been an unstated assumption that we must choose between two extremes: either we may discard evidence from word order in poetry, or we may take all of it at face value. But these options hardly satisfy our common sense, let alone our curiosity. The general goal of this work has been to explore a third option: that by analyzing the poetry in depth, we may be able to grade the evidence and limit ourselves to studying the best of it.

The method I have laid out for Rigvedic will continue to uncover syntactic truths about the language the more it is applied to the corpus. And although the specifics of that method will need to be modified when it is applied to a different language or poetic format, there is nothing in principle that limits its power to the Rigveda.

The main problem in pursuing this mode of inquiry is that it is a single tool which works best in concert with others. The lack of a tagged Rigvedic corpus stifles the depth and breadth of our searches, forcing us to select for analysis only a small number of salient constructions. With additional searching, or with the creation of a tagged corpus, the method proposed in this work should allow us to attain deeper insights into the syntax of this difficult text.
References


Appendices
Appendix A

A shell script for scanning Vedic text

#!/bin/bash

# Vedic scanner
#This is one of the programs used to scan the Rigveda. Although they all
#follow the same basic method, it was necessary to produce several versions
#in order to best deal with final -e and -o before a following vowel. The
#corpus was first separated: all lines containing -e_V or -o_V were sequestered,
#the remaining lines were then scanned according to the search and replace
#method below, with every -e- and -o- scanning as H. The version of the program
#presented here was made to scan the sequestered data in two ways, once with
#all -e/o_V scanning as H, and once with them all scanning as L. Each version’s
#resulting metrical pattern was then counted against the previously scanned
#corpus, and the higher number chosen. The two sets were then recombined and
#recounted to form the single scanned, counted corpus.
#This extra complication allows -e/o_V the freedom to scan as either light
#elif heavy depending on what the better meter demands.
while read stringZ # This takes each line from the file one at a time
# and takes it through the following process.

do

stringY=$stringZ # Copying the string will allow us to append the
# scansion to the Vedic verse.

stringZ=${stringZ:10} # Delete the first 10 characters of the line,
# which indicate the mandala, hymn, and verse.

stringZ=${stringZ//.} # Delete characters which don’t affect scansion.
stringZ=${stringZ//-}
stringZ=${stringZ/+}
stringZ=${stringZ/°}
stringZ=${stringZ/†}
stringZ=${stringZ/’}
stringZ=${stringZ/0}
stringZ=${stringZ/1}
stringZ=${stringZ/2}
stringZ=${stringZ/3}
stringZ=${stringZ/4}
stringZ=${stringZ/5}
stringZ=${stringZ/6}
stringZ=${stringZ/7}
stringZ=${stringZ/8}
stringZ=${stringZ/9}
stringZ=${stringZ//H} #Delete previous scansion if there is any.
stringZ=${stringZ//L} #(this makes rescanning easier)
stringZ=${stringZ//\:}
stringZ=".""$stringZ"." #Add borders for easy reference.

stringZ=${stringZ//ph/c} #We must first replace the consonants
stringZ=${stringZ//bh/c} #transcribed with multiple letters,
stringZ=${stringZ//dh/c} #since each component of these must also
stringZ=${stringZ//th/c} #be treated as a single consonant.
stringZ=${stringZ//kh/c}
stringZ=${stringZ//gh/c}
stringZ=${stringZ//ṭh/c}

stringZ=${stringZ//ch/\cc} #Digraphs which represent two morae
stringZ=${stringZ//dh/\cc}
stringZ=${stringZ//lh/\cc}

stringZ=${stringZ//h/c} #Replace visarga and anusvara with 'c'
stringZ=${stringZ//m/c}
stringZ=${stringZ//m/c}

stringZ=${stringZ//r/H} #Since 'r' is used for both a vowel and
stringZ=${stringZ//r/H} #a consonant, we must treat all such with
stringZ=${stringZ//r/H} #vocalic diacritics first.
stringZ=${stringZ//r/a}
stringZ=${stringZ//ř/a}
stringZ=${stringZ//ђ/a}

stringZ=${stringZ//k/c} #Replace every remaining consonant with 'c.'
stringZ=${stringZ//g/c}
stringZ=${stringZ//ŋ/c}
stringZ=${stringZ//c/c}
stringZ=${stringZ//j/c}
stringZ=${stringZ//ñ/c}
stringZ=${stringZ//t/c}
stringZ=${stringZ//d/c}
stringZ=${stringZ//n/c}
stringZ=${stringZ//ṭ/c}
stringZ=${stringZ//ḍ/c}
stringZ=${stringZ//ṇ/c}
stringZ=${stringZ//p/c}
stringZ=${stringZ//b/c}
stringZ=${stringZ//m/c}
stringZ=${stringZ//v/c}
stringZ=${stringZ//y/c}
stringZ=${stringZ//r/c}
stringZ=${stringZ//l/c}
stringZ=${stringZ//l/c}
stringZ=${stringZ//s/c}
stringZ=${stringZ//s/c}
stringZ=${stringZ//h/c}
stringZ=${stringZ//ã́/vv} #Replace disyllabic long vowels with 'vv'.
stringZ=${stringZ//ã/vv}
stringZ=${stringZ//ĩ́/vv}
stringZ=${stringZ//ĩ/vv}
stringZ=${stringZ//ũ/vv}
stringZ=${stringZ//ṹ/vv}
stringZ=${stringZ//õ/vv}
stringZ=${stringZ//ṍ/vv}
stringZ=${stringZ//ẽ́/vv}
stringZ=${stringZ//ẽ/vv}
stringZ=${stringZ//ai/H} #Replace long vowels except e and o
stringZ=${stringZ//aí/H} #with 'H' since these will scan heavy.
stringZ=${stringZ//au/H}
stringZ=${stringZ//aú/H}
stringZ=${stringZ//ā́ /H}
stringZ=${stringZ//ā/H}
stringZ=${stringZ//ū/H}
stringZ=${stringZ//ī/H}
stringZ=${stringZ//a/v} #Replace short vowels with 'v'.
stringZ=${stringZ//à/v} #<-- precombined accent
stringZ=${stringZ//ā/v} #<-- combining accent
stringZ=${stringZ//á/v}
stringZ=${stringZ//i/v}
stringZ=${stringZ//i/v}
stringZ=${stringZ//i/v}
stringZ=${stringZ//i/v}
stringZ=${stringZ//u/v}
stringZ=${stringZ//ü/v}
stringZ=${stringZ//ú/v}

stringZ=${stringZ// } #Delete spaces.
stringZ=${stringZ// } #(there appear to be 2 kinds of space used)

#The string is now a series of ’c’s and ’v’s with some ’H’s that
#have already been ”scanned.”

#At this point the script will copy the string in order to try it out
#with eo_V scanned as L_V and as H_V
stringA=${stringZ}

stringA=${stringA//ev/Hv} #To be sure that e and o scan heavy
stringA=${stringA//ov/Hv} #before other vowels
stringA=${stringA//év/Hv}
stringA=${stringA//èv/Hv}
stringA=${stringA//óv/Hv}
stringA=${stringA//òv/Hv}
stringA=${stringA//òv/Hv}
stringA=${stringA//oe/HH} #only affects 2 lines
stringA=${stringA//eó/HH} #only affects 1 line
stringA=${stringA//óe/HH} #only affects 1 line
stringA=${stringA//eH/HH}
stringA=${stringA//oH/HH} #update to reflect praghrya e/o
stringA=${stringA//éH/HH}
stringA=${stringA//èH/HH}
stringA=${stringA//èH/HH}
stringA=${stringA//óH/HH}
stringA=${stringA//òH/HH}
stringA=${stringA//òH/HH}

stringZ=${stringZ//ev/vv} #To be sure that e and o scan light
stringZ=${stringZ//ov/vv} #before other vowels
stringZ=${stringZ//év/vv}
stringZ=${stringZ//èv/vv}
stringZ=${stringZ//èv/vv}
stringZ=${stringZ//óv/vv}
stringZ=${stringZ//òv/vv}
stringZ=${stringZ//òv/vv}
stringZ=${stringZ//oe/vH} #only affects 2 lines
stringZ=${stringZ//eó/vH} #only affects 1 line
stringZ=${stringZ//óe/vH} #only affects 1 line
stringZ=${stringZ//eH/vH}
stringZ=${stringZ//oH/vH} #update to reflect praghrya e/o
stringZ=${stringZ//éH/vH}
stringZ=${stringZ//èH/vH}
stringZ=${stringZ//èH/vH}
#W e are now ready to replace syllables heavy by position with 'H'.

stringZ=${stringZ//èH/vH}
stringZ=${stringZ//óH/vH}
stringZ=${stringZ//òH/vH}
stringZ=${stringZ//èH/vH}

stringA=${stringA//e/H} #Scan e's and o's as heavy
stringA=${stringA//o/H}
stringA=${stringA//é/H}
stringA=${stringA//è/H}
stringA=${stringA//è/H}
stringA=${stringA//ó/H}
stringA=${stringA//ò/H}
stringA=${stringA//ò/H}

stringZ=${stringZ//e/H} #Scan e's and o's as heavy
stringZ=${stringZ//o/H}
stringZ=${stringZ//é/H}
stringZ=${stringZ//è/H}
stringZ=${stringZ//è/H}
stringZ=${stringZ//ó/H}
stringZ=${stringZ//ò/H}

#We are now ready to replace syllables heavy by position with 'H'.

stringZ=${stringZ//vcccc/H}
stringZ=${stringZ//vccccc/H}
stringZ=${stringZ//vccc/H}
stringZ=${stringZ//vcc/H}

stringZ=${stringZ//H/H}  #Some combining diacritics may have migrated
stringZ=${stringZ//H/H}  #onto some 'H's; this will clean up the string.

stringZ=${stringZ//v/L}  #Any leftover 'v’s become 'L’s and the
stringZ=${stringZ//c}    #leftover 'c’s are deleted.

stringZ=${stringZ//\:H/\:A}  #Replace first and last scans with 'A'
stringZ=${stringZ//\:L/\:A}  #for ”anceps.”
stringZ=${stringZ//H/:A}
stringZ=${stringZ//L/:A}

stringZ=${stringZ//\:f/:A}  #I have no idea why this is necessary

stringA=${stringA//vcccccc/H}
stringA=${stringA//vcccccc/H}
stringA=${stringA//vcccc/H}
stringA=${stringA//vcc/H}

stringA=${stringA//H/H}  #Some combining diacritics may have migrated
stringA=${stringA//H/H}  #onto some 'H’s; this will clean up the string.

stringA=${stringA//v/L}  #Any leftover 'v’s become 'L’s and the
stringA=${stringA//c}    #leftover 'c’s are deleted.
stringA=${stringA//\:H/\:A}  # Replace first and last scans with 'A'
stringA=${stringA//\:L/\:A}  # for "anceps."
stringA=${stringA//H:/A:}
stringA=${stringA//L:/A:}

stringA=${stringA//f/:/A:}  # I have no idea why this is necessary

# Now we generate the frequency count for each version of each line

stringX=${stringZ}
num1=`grep -c "$stringX" ./rv_scansion`

stringX=${stringA}
num2=`grep -c "$stringX" ./rv_scansion`

#if the heavier version scans better, we echo that, otherwise the lighter

if [ $num1 -lt $num2 ]; then
echo "$stringY $stringA $num2"
else
echo "$stringY $stringZ $num1"
fi

done

exit 0
Appendix B

Rigvedic lines with scansion in the first percentile of frequency

These are the 8, 11, and 12 syllable lines of the RigVeda whose metrical patterns constitute the first percentile when ranked in order of frequency.

B.1 First percentile of 8 Syllable lines according to the frequency of each line’s scansion pattern.

1.027.03c pāhí sádam íd viśvāyuh :ALLHHHA: 1
8.094.01a gaúr dhayati marútāṃ :ALLLLLLA: 1
10.085.40a sómaḥ prathamó vivide :AHLLHLLA: 2
1.090.05a utá no dhíyo góagrāḥ :ALHLHHHA: 2
5.075.05a bodhínmanasā rathiyā :AHLLHLLLA: 2
8.002.09a śúcir asi puruniṣṭhāḥ :LLLLLLHA: 2
8.079.04b divá ā prthivyā rjīṣin :ALHLHHHA: 2
8.081.08a índra yā u nā te āsti :ALLLLLHA: 2
1.038.09c yāt prthivīṁ viundánti :ALLHLHHA: 3
5.074.06a āsti hī vām ihā stotā :ALLHLHHA: 3
8.002.13c prēd u harivaḥ śrutasya :ALLHLHHA: 3
8.046.22e dása gāvāṁ sahāsrā :ALLHLHHA: 3
8.071.02c tuvāṁ ēd āsi kṣāpaṇān :ALLHLHHA: 3
8.079.01b viśvajīd udbhūd ēt sōmaḥ :ALLHLHHA: 3
8.091.03b ādhi canā tvā nēmasi :ALLHHHLA: 3
9.015.01a eśā dhiyā yāty ānviyā :ALLHHHLA: 3
9.113.06b chandasīyāṁ vāçaṇ vādān :ALLHHHLA: 3
10.020.08c āgniṁ haviśā várdhantāḥ :AHLLHHHA: 5
1.038.14b parjānya iva tatanaḥ :AHLLLLLHA: 5
2.006.04b vāsupate vāsudēvan :ALLHLHHA: 5
3.041.08b hāripriya arvāṅ yāhi :AHLLHHHA: 5
5.017.04b dasmāsya vāsu rātha ā :AHLLLLLHA: 5
5.050.02d sācemahi sacathiyaṁāḥ :AHLLLLLHA: 5
5.068.04a rtāṁ rtēna sāpantā :ALLHLHHA: 5
5.082.07c satyāsavaṁ savitāram :ALLHLHHA: 5
5.082.09b āśrāvyāti ślōkena :AHLLHHHA: 5
8.002.04b āntiḥ sutapā viśvāyuḥ :AHLLHHHA: 5
8.002.26c nī yamate śatāmūtīḥ :ALLHLHHA: 5
8.061.14b kṣāyasya āsi vidhatāḥ :AHLLLLLHA: 5
8.098.09b urauṁ rātha urūyuge :AHLLLLLHA: 5
9.066.16a mahāṁ āsi somā jyēṣṭha :AHLLHHHA: 5
9.066.20a aguīr śiśī pávamānaḥ :ALLHLHHA: 5
10.072.05a āditir hī ájaniṣṭa :ALHLLLHA: 7
10.090.12a brāhmaṇo ’syā mūkhām āśid :ALHLLLHA: 7

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1.050.13a  úd agād ayám ādityó :ALHLLHHA: 9
1.084.02a  índram íd dhārī vahato :ALHLHLLA: 9
1.176.03c  spāśāyasva yó asmadhṛūg :ALHLLHHA: 9
1.191.09a  úd apaptad asaú sūryaḥ :ALHLLHHA: 9
2.041.07a  gómad ū śú nāsatiyā :ALHLHLLA: 9
3.041.03c  vihi śūra purolāśam :ALHLLHHA: 9
5.070.01c  mitra váṃsi vāṃ sumatím :ALHLHLLA: 9
5.082.08a  yá imé ubhé áhanī :ALHLHLLA: 9
5.086.06b  āhāvi haviyāṁ śūṣyaṁ :AHLLLHHA: 9
6.044.04a  tiyám u vo áprahaṇaṁ :ALLHHLLA: 9
6.047.24a  dáśa rāthān práṣṭimataḥ :ALLHHLLA: 9
6.047.24b  satāṃ gā átharvabhyāḥ :AHLLLHHA: 9
7.032.18b  etāvad ahám īśīya :AHLLLHHA: 9
8.002.20c  aśrīrá iva jāmātā :AHLLLHHA: 9
8.002.21b  bhūridāvarīṇaśumatīm :ALHLHLLA: 9
8.002.27a  éhá hārī brahmayújā :ALLHHLLA: 9
8.005.35c  dhī́javanā nāsatiyā :ALLHHLLA: 9
8.046.21d  prthuśrávasi kānī́tē :AHLLLHHA: 9
8.079.08b  mā ví bibhiṣathā rājan :ALHLHLLA: 9
8.081.05c  abhī rádhasā jugurat :ALHLHLLA: 9
8.089.05c  tát prthivīm aprathayas :ALLHHLLA: 9
9.005.08a  bhāratī pávamānasya :ALHLHLLA: 9
10.086.20a dhánva ca yát krntātraṇ ca :ALLHHHHA: 10
10.090.02a  púruṣa evédam sárvaṁ :ALLHHHHA: 10
1.010.06d  índro vásu dáyamānaḥ :AHLLLHHA: 10
10.135.05a  kāḥ kumārāṁ ajanayaḥ :ALHLLLLA: 10
10.135.06a  yáthābhavad anudéyi :AHLLLHHA: 10
10.093.11a  etāṃ sāṃsam indrāsmanyūṣ :AHHHLHHLA: 11
10.095.03a  īṣur nā śriyā īṣudhér :AHHLLLLL: 11
10.126.03c  nāyīṣṭhā u no neṣāṇi :AHHLHHLA: 11
10.158.02a  jōṣā savitar yāsyat yāsyat yāsa te :AHLHHLHLA: 11
10.166.04c  ā vaś cittām ā vo vratām :AHHHLHHLA: 11
10.166.05e  maṇḍūkā iva udakān :AHHHLLLL: 11
10.175.03c  vṛṣṇe dádhato vṛṣṇiyam :AHHHLHHLA: 11
1.022.15a   siyonā prthivi bhava :AHHLLLALL: 11
1.024.04a   yāś cid dhī ta itthā bhāgaḥ :AHLHHLHHLA: 11
1.028.02a   yātra dvāv iva jaghānā :AHHLLLALL: 11
1.045.10d   tāṁ pāta tīrōahniyam :AHHHLHHLA: 11
1.046.05b   nāsatyā matavacasā :AHHLLLALL: 11
1.150.02b   prahoṣé cid áraruṣaḥ :AHHLLLALL: 11
3.028.06c   juṣásva tīrōahniyam :AHLHHLHHLA: 11
5.051.15c   pūnar dádatā āghnā :AHHHLHHLA: 11
5.061.15b   pranetāra itthā dhiyā :AHHHLHHLA: 11
5.083.09d   yāt kīṃ ca prthivyām ádhī :AHLHHLHHLA: 11
7.059.01a  yāṃ trāyadhva idām-idaṃ :AHHLLLALL: 11
8.002.38a   gāthāśravasāṃ sātpatiṃ :AHLHHLHHLA: 11
8.004.13a   ratheṣṭhāya adhvaryavaḥ :AHLHHLHHLA: 11
8.027.05a   ā no adyā sāmanasco :AHHLLLALL: 11
8.047.16a   tádamāya tádpase :AHHLLLALL: 11
8.052.05b   mahām ugrā īśānakṛt :AHHHLHHLA: 11
8.055.04a   sudevā stha kāṇvāyanā :AHHHLHHLA: 11
8.060.19a   ágne járitar viśpātis :AHLHHLHHLA: 11
8.060.20d   ágne sēdha rakṣasvīnaḥ :AHLHHLHHLA: 11
8.065.05b   mahām ugrā īśānakṛt :AHLHHLHHLA: 11

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B.2  First percentile of 11 Syllable lines according to the frequency of each line’s scansion pattern.

10.015.04a  bárhiṣadaḥ pitara ūtī arvāg  :ALLHLLLHHHA:  1
10.016.06b  pipīláḥ sarpā utā vá svāpadaḥ  :AHHLLLLHHLA:  1
10.023.02d  áva kṣṇaumi dāsasya nāma cit  :AHHLLLHLHLA:  1
10.032.04c  mātā yán mántur yūthásya pūrviyā  :AHHHHHHHLHLA:  1
10.048.11d  áparājitam ástrtam áṣāḷham  :ALHLLHLLLHA:  1
10.050.04c  bhúvo nṛṃś cyautanó víśvasmin bháre  :AHHLHHHHHLA:  1
2.020.01a vayāṃ te váya indra viddhī śū ṇaḥ :AHLLHLHLLLA: 1
2.020.04d brahmaṇiyaṭā nūtanasya āyōḥ :ALLLHLHLHHA: 1
2.020.05c muṣṇāṃ uṣasāḥ sūrīyenā stavān :AHLHLHHLHHA: 1
2.040.06c ávatu devī ādir anarvā :ALLHHLLLLHA: 1
2.042.01d mā tvā kā cid abhibhā vīśvīyā vidat :AHHLLLHHHHA: 1
3.014.07a túbhyaṃ daksā kavikrato yāṇīmā :AHLLHLHLLHHA: 1
3.020.05d vásūn rudrām ādityām ihā huve :AHHHHHHLLLA: 1
4.021.10a evā vāsva ādirah+ satyāḥ samrāḍ :AHLHLHHHHHA: 1
4.028.05d riricāthuḥ kṣāś cit tatrdānā :ALLHLHLHLLLA: 1
4.029.04c úpa tmāni dádhaṅa dhurī āśūn :AHLLLHLHLLLA: 1
5.041.17a iti cin nū praṇaye paśumātyai :ALHHLHLHLLLA: 1
6.003.08b vidyūn nā davidyot suvēbhiḥ śūṣmaḥ :AHLHHLHLLHHA: 1
6.004.04c sā tuvāṃ na ėrjasana ėrjaṃ dhā :ALHLHLHLLHHA: 1
6.011.03a dhāniyā ċid dhī tvē dhiṣaṃa vāṣṭi :ALHHHHHLHLLHA: 1
6.017.12b pārīṣhitam asrēja ērmīm āpēm :AHLLLLHLHLLLA: 1
6.020.05c urū śa sarāthaṃ sārathaye kar :ALLLHLHLLHHA: 1
6.020.13c didayad īt túbhya° sómebhiḥ sunvān :ALLHLHLHLLLA: 1
6.024.10c anā cainam āraṇye pāhi riśō :AHHLHLHHLHHA: 1
6.025.01a yā ta ātīr avamā yā ėpamā :ALHLHLHHLHLL: 1
6.025.03a īndra jāmaya utā yē jāmaya :ALHLHLHHLHLLLA: 1
6.026.08c prātardaniḥ kṣatraśrī āstu śrēṣṭho :AHLHHHHHHHHHA: 1
6.029.02c ā raśmayo gābhastiyo sthūrayo :AHLHLHLHHLHHA: 1
6.040.05a yād īndra divī pārīye yād ēdhag :AHLHLHLHHLHLLLA: 1
6.048.17c mā utā sūro āḥa evā cānā :ALLHLHLHLLHLLLA: 1
6.066.11d girāyo nā āpa ugrā asprdhran :ALHLHLHHHHHA: 1
6.068.02a tā hī śrāyisṭā+ devātātā tujā :AHLHHHLHHLHLLLA: 1
6.068.02c maghōnaṃ māṃhīṣṭa tuviśuṣma :AHLHHHHHHHLLLHA: 1
6.068.03a  tāṣṇiḥi namsīyebhiḥ śuṣaḥiḥ :ALHLLLHHHA: 1
7.002.01c  úpa sprṣa diviṃsātā stūpāḥiḥ :AHLLLLHHHA: 1
7.008.06d  dyumād amīvacātanāṃ rakṣohā :ALLHLHLLHA: 1
7.038.02a  úd u tiṣṭha savitaḥ śrudhī asyā :ALHLLLHLHA: 1
7.061.02b  vípro mānmāni dirghaśrūd iyarti :AHHHLHLLLHA: 1
7.095.06a  ayām u te sarasvati vāsiṣṭho :ALLHLHLLHA: 1
7.104.24a  īndra jahī pūṃāṃsāṃ yātudhānam :ALLLHHHLHA: 1
8.026.24c  grāvāṇaṃ nā āśvaprṣṭham maṃhānā :AHHLHLHHHA: 1
9.089.03b  hārim aruṣaṃ divō asyā pātim :ALLLHLHLHA: 1
9.091.05b  suukṭāya pathāḥ krṣuhi prācaḥ :AHHLHLHHLA: 1
9.093.05b  punāno vātāpyaṃ viśvāscandram :AHHLHLLLLHA: 1
9.094.01a  ádhi yād asmin vājūnaśa sūbha :ALLHHHLHLA: 1
9.094.01b  spārdhante dhūyaḥ sūriye nā viśaḥ :AHHLHLHLHLA: 1
10.003.05b  rōcamaṁsaḥ brhatāḥ sudīvaḥ :ALHLLLHLHLA: 2
10.030.02b  ácha apā itoṣatir uṣantaḥ :ALLLLHLHHLA: 2
10.049.01d  āyajvanaḥ sākṣi viśvasmin bhāre :AHLHHLHHLHA: 2
10.050.01b  árcā viśvānarāya viśvābhūve :AHHHLHHLHLA: 2
10.050.05a  ávā nū kaṇi jyāyān yajūvanaso :AHLHHHHLHLA: 2
10.061.01a  idām itthā raūdaraṃ gūrtāvacā :ALHHHHLHHLA: 2
10.061.05d  duhitūr āśuḥ prtaḥ anarvā :ALLHLHLLLAL: 2
10.068.03a  sādhuaryāḥ atithūnīr isirā :ALHHLHHHLHLA: 2
10.077.05a  yūyāṃ dhūrṣu pravujo nā raṃśībhīr :AHHHLHLHLHLA: 2
10.079.03a  prá mātūḥ pratarāṃ guhīyam ichān :AHHHLHHLHLA: 2
10.083.05c  táṃ tvā manyo akratūr jihīlahāṃ :AHLHLHHLHLA: 2
10.099.01a  kāṃ naḥ citrāṃ iṣaṇyasi cikitvān :AHLHLHLLLHLA: 2
10.103.08a  īndra āśāṃ nayitāḥ bhṛspatir :ALHHLHHLHLA: 2
10.106.05a  vāṃṣageva puṣariyā śimbātā :ALHHLHHLHHA: 2

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agniḥ pātu grñatō agniḥ sūrīn
ījānám bhūmir abhī prabhūṣāṇi
dā nṛbhyo nṛṇāṃ+ śūra śāvah
sarvarathā ví hāri ihā muñca
sām usrīyābhīr vāvaśanta nāraḥ
só andhé cit támasi jyótir vidan
yād dha sūnī śrvase nāma dadhē
prāsātaye mahinā ráthavate
sukṛtā tāc chamitārah kṛṇvantu
ahām etā mānave viśvāscandṛāḥ
esām bhūta nāvedā ma rtānām
gāvo dhenāvo bhṛṣi ádabdhā
gāvo dhenāvo barhiṣi ádabdhā
eśām bhūta nāvedā ma rtānām
prābhartā ráthaṃ dāśūṣa upākā
práśastaye mahinā ráthavate
vayāṃ cid dhī vāṃ jaritārah satyā
gāvo dhenāvo barhiṣi ádabdhā
vayāṃ cid dhī vāṃ jaritārah satyā
adhvaryantā yād unninīthō apām
pāhī no agne pāyuḥbhir ájasrair
dakṣāyiyo yā dāsvate dáma ā
só anyēbhiḥ sacate jēnyo vṛṣā
dakṣāyiyo yā dāsvate dáma ā
dakṣāyiyo yā dāsvate dáma ā
práśastaye mahinā ráthavate
só anyēbhiḥ sacate jēnyo vṛṣā
dakṣāyiyo yā dāsvate dáma ā
só anyēbhiḥ sacate jēnyo vṛṣā
dakṣāyiyo yā dāsvate dáma ā
práśastaye mahinā ráthavate
dakṣāyiyo yā dāsvate dáma ā
práśastaye mahinā ráthavate
dakṣāyiyo yā dāsvate dáma ā
práśastaye mahinā ráthavate
dakṣāyiyo yā dāsvate dáma ā
práśastaye mahinā ráthavate
4.037.01a  úpa no vājā adhvarám rbhukṣā  :ALHHHHLLLHA:  2
4.038.02a  utá vājínam puruniśśidhvānaṁ  :ALHLHLLHHHA:  2
4.042.04b  dhārāyaṁ dévaṁ sádana rtáṣya  :ALHLHLLLHLHA:  2
5.033.07a  evá na indara+ útíbhir ava  :AHLHLLHLLLA:  2
5.041.05b  rāyá éše ávase dadhūta dhūḥ  :ALHHHHLHLHLA:  2
5.041.07a  úpa va éše vándiyebhiḥ śūṣaíḥ  :ALLHHHLHHHA:  2
6.020.01d  daddhí sūno sahaṣo vrtrátúram  :ALHHLHHLLLA:  2
6.020.04a  sataír apadran paṇáya indrátra  :AHLHHLLLHLHA:  2
6.023.07d  urúṁ krdhi tuvāyatá ulokám†  :AHLLLLHLHLHA:  2
6.024.08b  ná sárdhate dásyujūtāya stavān  :AHLHHLHHHLHA:  2
6.024.09b  prá íṣó yandhi sutapāvan vājān  :ALHHLHLLLHHHA:  2
6.026.06a  tuvāṁ śraddhābhir mandasānāḥ sómaír  :AHHHHHLHHHA:  2
6.026.07a  aháñ caná tát sūrībhir ānaśyām  :AHLHHLHHLHLA:  2
6.044.21c  vríṣuṇe ta índur vrṣabha pīpāya  :AHLHHLHLHLLLA:  2
6.047.09c  íṣam ā vakṣi íṣāṁ várśiṣṭhām  :ALHHLHLHHLHLA:  2
6.051.01c  rtáṣya śúci darśatám ánīkaṁ  :AHLHHLLLHLHA:  2
6.060.03a  á vrtrahānā vrtrahābhiḥ śūsmair  :AHLHLHHHLHLHA:  2
6.063.03b  ástāri barhīḥ supāyañatamam  :AHLHHHHHLHLHA:  2
6.066.04b  antáḥ sánta avadyāni punānāḥ  :AHLHHLHLLLHLHA:  2
7.001.18c  práti na ṯa surabhīṇi viyantu  :ALLHHLHLHLHLA:  2
7.003.07a  yáthā vaḥ svāḥa aṅgaye dāśema  :AHHHHHLHHHLHA:  2
7.004.03a  asyá devásya saṃsádi ánike  :ALHHLHLHLLLHA:  2
7.021.09a  sákhāyas ta índra viśvāha syāma  :AHLHHLHLHLHLHA:  2
7.038.06a  ánu tán no jāspátiṁ maṃśiṣṭa  :ALHHLHLHHLHLHA:  2
7.038.07c  jambháyanto áhiṁ vrkaṁ rákṣaṇsi  :ALHHLHHLHHLHA:  2
7.042.04d  sá viśe déti vāriyam iyatyai  :ALHHLHLLLHLHA:  2
7.045.03c  viśráyamāṇo amátim urūcim  :ALHHLHLHLHHLHA:  2
7.060.10a  sasvāś cid dhī sámrtis tveṣī eṣām :AHHLLLHHHHA: 2
8.059.05b  tveṣābhiyām mahimānām indriyām :AHLHLLHLHHLA: 2
10.022.11a  makṣū tā ta indara+ dānāpnasa :AHHLHLLHLHHLA: 3
10.030.13a  prāti yād āpo ādrāram āyatīr :ALLHLLHLHLHHLA: 3
10.074.03d  té no dhāntu vasavīyam āsāmi :AHHLLLLLLHLA: 3
10.074.04b  abhí yā ūrvāṃ gómantaṃ tītrtsān :ALLHHHHHHLHLA: 3
10.093.14c  yé yuktvāya pāńca šatā asmayū :AHHLHLLHLHHLA: 3
10.095.04b  váya ūṣo yādi vāṣṭy āntighrāt :ALLHLLHHLHLA: 3
10.099.07b  ā śāviṣad arāsānāya śārum :AHHLHLLHLHLA: 3
10.108.08a  éhā gamann īśayaḥ sómaśāta :ALLHLLHLHLHLA: 3
10.109.04c  sató bándhum āsati nír avīdā :AHHLLLLLLLLHA: 3
1.033.09a  pári yād indara+ ródasī ubhé :ALLHLLHLHHLA: 3
1.063.04a  tuvāṃ ha tyād indara+ codīḥ sākhā :AHHLHLLHLHLA: 3
1.117.08b  mahāḥ kṣoṇāsyā aśvinā kāṇvāya :AHHLHLLHHLHHLA: 3
1.118.07d  práty adhattaṃ suṣṭutīṃ jujuṣāṇā :ALHHHLHLLHLA: 3
1.149.01b  inā ināsya vāsunaḥ padā ā :ALLHLLLLHLHLA: 3
1.167.05b  víṣitastukā rodasī nrmāṇāḥ :ALHLHHLHLHHLA: 3
1.174.09a  tuvāṃ dhūnir indara+ dhūnimatīr :AHHLHLLLLLLA: 3
1.186.06a  utā na īṃ tvāṣṭā ā gantu áchā :ALLHHHHHHLHLA: 3
2.020.01b  prá bharāmahe vājayür ná rátham :ALHLHHLHLHLA: 3
2.028.06a  ápo sū myakṣa varuṇa bhīyāsam :AHHLHLLLLLLA: 3
3.029.07c  yāṃ devāsa īḍiyaṃ viśvavīdaṃ :AHHLHHLHLHHLA: 3
4.004.12d  ágne táva naḥ pāntu anāra :AHHLHHLHLHLA: 3
4.016.20b  brāhma akarma bhṛgavo ná rátham :ALLHLLLLHLHLA: 3
5.002.01d  purāḥ paśyanti nihitam arataū :AHHLLLLLLLLHLA: 3
śociṣā rārapīti mitrāmahāḥ

tuvād vípro jāyate vājī agne

dívō vrṣṭī ēdiyo rītír apāṁ

návamān áhim sām piṇag rjiṣin

asuriyaṃ dévēbhīr dhāyi víśvam

prā pūrāva stavanta enā yajñāliḥ

tuvāṃ dhūnir indara+ dhūnimatīr

dívī śyāma pāriye gośātamāḥ

kada bhuvan ráthakṣayāṇi brāhma

sā gómaghā jairtré āśvaścandrā

índrasya priyām amṛtam apāyi

patatrībhīr āṛṇaso nīr upāsthāt

dhenūṃ na śaṃ pinvatam ásakrāṃ

sā ā vaha yā uksābhīr ávātā

anaśvāś cid yām ájati árathīḥ

agnīm átyaṃ nā marjayanta nāraḥ

úpa no vājān mimīhi úpa stīn

ánūnā yāsyā dákṣiṇā pīpāya

patatrībhīr áśramaīr avyathībhīr

dīvā nāktam mādhuvī trāśīthāṃ naḥ

āvīr akar bhuvanaṃ víśvam uṣāḥ

jātō-jāto jāyate vājī asya

imām u śū śomasutim úpa na

yó várdhana óṣadhīnāṃ yó apāṃ

mandhātrvād áṅgirasvād avāci

ucathíye vápuṣi yāḥ suvarāḥ

ví ca nāsān na iśō árātayo
B.3 First percentile of 12 Syllable lines according to the frequency of each line’s scansion pattern.

10.010.13b naívá te máno hŕdayaṁ cávidāma :ALHLHLLHHLHA: 1
10.036.14b savitóttarāttāt savitádhārāttāt :ALHLHLLHHLHA: 1
10.059.10a sám indra íraya gám anadváhaṁ :AHLHLLLHLLHA: 1
10.078.08a subhāgān no devāḥ kṛṇutā surátnān :AHHHHHLLHLHA: 1
10.082.04b iṣayāḥ pūrve jaritāro ná bhūnā :ALHHHLLHHLHA: 1
10.087.16a yáḥ paíruṣeyeṇa kravíśā samaṅkté :AHLHLLLHLLHA: 1
10.088.09b yásminn ājuhavur bhúvanāni víśvā :AHLHLLLHHLHA: 1
10.093.05b súryāmāsā sádanāya sadhanīyā :AHHHLLLHLLLA: 1
10.093.07a utá no rudrā cin mṛlatāṁ+ aśvīnā :ALHHHHHLLHLHA: 1
10.093.08a rbhúr rbhukśā rbhúr vidható máda :ALHHLHLLHLHA: 1
10.093.14b prá rāmé vocam ásure maghávatsu :AHHHLLLHLLLA: 1
10.115.05a sá íd agníḥ kāṇvatamaḥ kāṇvasakhā :ALHHLHHLHLHA: 1
10.122.03b dāsad dāśúše sukṛte māmahasva :AHHHLHHLHLHA: 1
10.126.02d pāthá nethā ca mártiyam áti dvíṣaḥ :AHLHHLLLLHLHA: 1
10.126.03d párṣiṣṭhā u naḥ parṣáṇi áti dvíṣaḥ :AHLHHLLLLHLHA: 1
10.129.06b kúta ājātā kúta iyāṁ víṣrṣṭih :ALHHHLLLHHLHA: 1
1.036.08c bhúvat káṇve víśā diyumnī āhutaḥ :AHHHHLHHHLHA: 1
1.039.03c ví yāthana vanínaḥ prthiviṣyā :ALLLLLLHLLLA: 1
1.048.04c áṭrāha tát káṇya eṣāṁ kāṇvatamo :AHLHHLHHHLHA: 1
1.048.09c āváhantī bhūrī asmābhyaṁ saúbhagaṁ :ALHHHHLHHHLHA: 1
1.084.07c īśāno āpratiśkuta índro aṅgá :AHLHLLHLLHLHA: 1
1.101.05b yó brahmáṇe prathamó gā āvindat :AHLHLLHLLLHA: 1
1.106.04b kṣayádvíram pūśāṇam sumnaír īmahe :AHHHHLHHHLHA: 1
1.120.03b tā no vidvāṁsā mánma vocetam adyá :AHHHHHLHHLHA: 1
1.127.05f bhaktám ábhaktam ávo vyánto ajárā :ALLHLLHLLLLA: 1
1.133.06a avár mahá indra dāḍrhi śrudhī naḥ :AHLHLLHLHLHA: 1
1.134.03a vāyúr yuṅkte róhitā vāyúr aruṇā :AHHHHLHHLLLA: 1
1.135.04f vāyav ā candréṇa rādhasā ā gatam :ALHHLHLLLHLHA: 1
1.161.03d tāṇi bhrātar ānu vaḥ krtvē émasi :AHHLLLHHHLHLA: 1
1.167.01b sahásram íso harivo gūrtamāḥ :AHLHLLLHHLHLA: 1
1.168.01c á vo arvācaḥ suvitāya ródasyor :ALHHHLLHHLHLHA: 1
1.169.06c ádha yád eşām prthubudhiśa ētās :ALLHHLHHLHLHA: 1
1.177.04a ayáṃ yajñó devayā ayám miyédha :AHHHHLHHLHLHA: 1
2.001.10a tuvám agna rbhúr āké namsiyas :ALHLLLHHLHLA: 1
2.002.09d tmánā śatínam pururūpam iṣáṇi :AHLHLLLHHLHLA: 1
2.020.08a tásmai tavasíyam ānu dāyi satrā :AHLLLLLLHHLHA: 1
3.002.05d rudráṃ yajñānāṃ sādhadiśtim apásām :AHHHHHLHHLHLA: 1
3.023.03c agníṃ sthu daivavātāṃ devaśravo :AHLHLHHLHHLA: 1
3.059.02d naínam áṃho aśnoty ántito ná dūrāt :ALHLHHHLHLHA: 1
4.042.08b saptá řśayo daurgahé badhyámāne :ALLHHLHHLHLHA: 1
5.056.05c marútāṃ purutātām āpūrviyaṃ :ALLHLLLLHHLHA: 1
6.026.07c tváyā yát stávante sadhavicā vīrās :AHLHHLHHLHLHA: 1
6.046.12c ádha smā yacha tanvē táne ca chardír :AHHHLHHLHHHA: 1
6.048.14c aryamāṇaṃ nā mandráṃ srprābhajasaṃ :ALLHLHHLHLHLA: 1
6.051.02b devāṅaṃ jánma sanutár ā ca vípraḥ :AHHHLLLLHHLHA: 1
7.039.03b urāv antārikṣe marjayanta śubhrāḥ :AHLHHLHHLHLHA: 1
7.046.01b kṣiprāśave devāya svadhāvane :ALLLHHHHLHLHA: 1
7.081.03c yā váhasi purú spárhāṇa vananvati :ALLLLHHHLHLHA: 1
7.082.02a samrāl anyāḥ svarāl anyā ucyate vām :AHHHLHLHLHLHA: 1
7.099.03d dādhártha prthivīṁ abhīto mayūkhaiḥ :AHLLLLHLHLHLHA: 1
8.001.16c úpastutir maghónāṁ prá tvā avatu :AHLHLHHHLHLHA: 1
8.001.30c ninditāśvah prapathī paramajyā :ALHLHLHLLLLLA: 1
8.009.01c prāsmai yachatam avrkāṁ prthū chardūr :AHHLLLLHLHLHA: 1
8.018.21c trivārūtham maruto yanta naś chardīḥ :ALHHLHLHLHLHA: 1
8.019.07b siyāma sūno sahasa īr̥ām pate :AHLHLHLHLHLHA: 1
8.019.14a samídha yó nīśti dāśad āditiṁ :ALHLHLHHLHLHA: 1
8.020.04a ví dvīpāni pāpataṁ tīṣhad duchūnā :AHLHLHLHHHLHA: 1
8.020.09b víśle śārhdāya mārutāya bharadhvaṁ :AHHHLHLHLHLHA: 1
8.020.24a yābhīḥ śindhum āvatha yābhis tūrvatha :AHHLLLLHHHLHA: 1
8.022.15b prātā rátheṇa āśvīnā ṣa sakṣāṇi :AHLHLHLHHHLHA: 1
8.023.08c mitrāṁ ná jāne súdhītam rtāvāni :ALHHLHLHLHLHA: 1
8.024.24c áhar-ahaḥ śundhyūḥ paripādāṁ iva :ALLHHHLHLHLHA: 1
8.027.07c sutāsomāso varuṇa havāmahe :ALHHLHLHLHLHA: 1
8.029.02a yónim ēka ā sasāda diyótano :ALHHLHLHLHLHA: 1
8.046.26c ebhīḥ sómebhīḥ somāsūdbhīḥ somapā :AHHHHHLHHHLHA: 1
8.059.07a índrāvaruṇa saumanasām ádṛptaṁ :AHLLHHLLHLHA: 1
8.059.07d dīṛghāyutvāya prá tirataṁ na āyuḥ :AHHHHHLHLHLHA: 1
8.060.07c evā daha mitramaho yó asmadhrūg :AHLHLHLHLHLHA: 1
8.062.09c vidē tāḍ índraś céteṇam ádha śrutō :AHLHHHLLLHLHA: 1
8.070.08c yó gādhēṣu yā āraṇeṣu háviyo :AHHLHLHLHLHLHA: 1
8.097.15a tān ma rtām índra śūra citra pātu :ALLLHLHLHLHA: 1
9.071.01a ā dákṣiṇā srjyate ṣuṣmīḥ āsādaṇi :AHLHLHHHHHLHA: 1
9.079.03d sóma jahi pavamāna durādhīyaḥ :ALLLLLLHLHLHA: 1
9.097.26d  hótāro ná divivájo mandrátamāḥ :AHHLLLLHHLLA:  1
9.108.14a  yásya na índraḥ píbād yásya marúto :ALLHHLHHLLLA:  1
Appendix C

Lines containing tokens

C.1  The position of the genitive with regard to its head noun

C.1.1  X genitive

8 syllable lines

1.027.01c  samrājantam adhvarāṇāṃ :AHHHLHLHA: 32
1.003.11a  codayitrī sūnṭānāṃ :ALHHHLHA: 33
8.046.02c  vidmā dātāraṃ rayiṇāṃ :ALHHHLHA: 33
10.166.01a ṛṣabhāṃ mā samānānāṃ :ALHHLHHA: 37
1.188.11a  purogā agnīr devānāṃ :AHHHHHHA: 54
1.044.02b  ágne rathīr adhvarāṇāṃ :AHLHHLHA: 64
8.011.02c  ágne rathīr adhvarāṇāṃ :AHLHHLHA: 64
9.066.18b  tokāsya sātā tanūnāṃ :AHLHHLHA: 64

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1.004.08b  ghanó vṛtrāṇām abhavaḥ :AHHHHLLA: 68
3.011.05b  viśām agnīr mānuṣīṇām :AHHHHLHA: 85
3.011.06b  krātur devānām āmr̥ktaḥ :AHHHHLHA: 85
8.016.01a  prā samrājaḥ carṣānām :AHHHHLHA: 85
10.166.01c  hantāraṃ sātrūṇāṃ kṛdhī :AHHHHLHA: 108
4.030.21c  dāsānām īndro māyāyā :AHHHHLHA: 108
4.032.14b  asmē sū matsuvānḥdhasaḥ
          4.032.14c  sōmānām īndra somapāḥ :AHHHLHLHA: 4930
4.032.17a  sahāsraṃ viyātināṃ
          4.032.17b  yuktānām īndram imahe :AHHHLHLHA: 4930

12 syllable lines

6.046.07c  yād vā pānca kṣitīnāṃ dyumnam ā bhara :AHHHLHHHLHLHA: 21
6.061.02b  sānu girīṇāṃ taviśēbhir ūr̥mībhīḥ :ALLHLLHLHLHA: 35
1.155.01c  yā sānuni párvatānām ádābhiyā :AHLLHLHLHLHA: 38
3.003.08c  adhvārāṇāṃ cētanaṃ jātāvedasam :ALHHHLHLHLHLHA: 69
10.035.08a  pīpartu mā tād ṣṭāsyā pravācanaṃ
          10.035.08b  devānāṃ yān manuṣiyā ámanmahi :AHHHLPLLHLHLHA: 468
10.092.14a  viśām āsām abhayānāṃ adhikṣītaṃ :AHHHLLHLHLHA: 523
10.036.11b  āvo devānāṃ bṛhatam anarvānām :AHHHHLHLHLHA: 650
10.128.07a  dhātā dhātṛṇām bhūvanasya yās pántiḥ :AHHHHLHLHLHLHA: 650
3.003.03a  ketūṃ yajjānāṃ vidāthasya sādhanāṃ :AHHHHLHLHLHLHA: 650
3.003.04a  pitā yajjānāṃ ásuro vipaścītāṃ :AHHHHLHLHLHLHLHA: 650
3.003.08b  yantāraṃ dhīnāṃ usūjaṃ ca vāghātām :AHHHHLHLHLHLHLHLHA: 650
3.060.06d  vratā devānāṃ mānuṣaṃ ca dhārmabhiḥ :AHHHHLHLHLHLHLHLHLHA: 650

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6.015.09b  dūtō devānāṃ rájasi sām iyase :AHHHHLHLHLHLA: 650
9.076.01b  dákṣo devānāṃ anumādiyo nṛbhṛḥ :AHHHHLHLHLHLA: 650
9.085.02b  dákṣo devānāṃ ási hí priyó mádaḥ :AHHHHLHLHLHLA: 650
9.086.12a  ágre sīndhūnāṃ pávamāno arṣati :AHHHHLHLHLHLA: 650
9.086.33a  rājā sīndhūnāṃ pavate pātir divā :AHHHHLHLHLHLA: 650
10.084.04a  éko bahūnāṃ asi manyav ilito :AHLHHLHLHLHLA: 1190
1.094.13b  vásur vāsūnāṃ asī cārur adhvaré :AHLHHLHLHLHLA: 1190
2.023.01b  kavīṁ kavināṁ upamāśravastamam :AHLHHLHLHLHLA: 1190
2.024.06b  nidhím paṇīnāṃ paramāṃ gūhā hitám :AHLHHLHLHLHLA: 1190
3.002.04c  rātīṁ bhṛgūṇāṁ uṣījaṇ kavīkratum :AHLHHLHLHLHLA: 1190
9.076.04d  pitā matīnām ásamaśṭakāvīyaḥ :AHLHHLHLHLHLA: 1190
9.086.19a  vṛśā matīnām pavate vicakṣanāḥ :AHLHHLHLHLHLA: 1190
9.086.32d  pātir jānīnām úpa yāti niṣkṛtám :AHLHHLHLHLHLA: 1190

C.1.2  genitive X

8 syllable lines

10.136.06b  mrṛgāṇāṁ cāraṇe cāran
10.072.03a  devānāṁ yugé prathamé :AHHHLHLA: 27
10.072.01a  devānāṁ nú vayāṁ jānā :AHHLLLHA: 30
8.081.07b  dhṛṣatā dhṛṣno jānānām :ALHHHLHA: 33
8.081.07c  ádāśūṣṭarasya vēdaḥ
10.085.02c  átho nākṣatṛāṇāṁ eşām :AHHHHHHA: 54
5.005.10b  devānāṁ gūhyā nāmāni :AHHHHHHHA: 54
10.024.03c  índra stotṛnām avitā :AHHHHLLA: 68
prāhāṃ mṛgāṇāṃ mātāram
8.027.02d dhīnāṃ bhūta prāvītāraḥ
10.185.01a máhi trīṇāṃ āvo astu
8.079.09b devānāṃ durmatīr īkṣe
9.066.16b ugrānāṃ inda ojiṣṭhaḥ
10.136.06b mṛgāṇāṃ cāraṇe cāran
1.022.09a ágne pātir ihā vaha
1.022.09b devānāṃ usatīr ūpa
1.191.13a navānāṃ navatīnāṃ
6.053.07b paṇīnāṃ ṣṛḍhayā kave
8.008.03d kāṇvānāṃ sāvane sutām
8.013.02b devānāṃ sādane vṛdhāḥ
8.032.19b kṛṣṭīnāṃ ānu āhūvah
8.038.08bātrīṇāṃ śṛṇutaṁ hávam
8.044.27a yajñānāṃ rathīye vayāṃ
girīṃnaṁ snūbhir eśāṃ
8.046.18b devānāṃ īd āvo mahāt
3.023.03d yō jānānām āsad vaśī
eyō jānānām āsad vaśī
devānāṃ īd āvo mahāt
8.044.07c adhvarāṇāṁ abhiśrīyam
8.055.03d áruṣīnāṁ cātuḥśatam
8.102.07b adhvarāṇāṁ purūtāmam
10.033.09a nā devānāṁ āti vratāṁ
devānāṁ āti vratāṁ
devānāṁ āti vratāṁ
devānāṁ āti vratāṁ
10.072.02c devānāṁ pūrviyē yugē
8.102.07b adhvarāṇāṁ purūtāmam
1.011.01d vājanāṁ sāpatim pātīm
10.137.03d devānāṁ dūtā īyase
10.166.01b sapātīnāṁ viṣāsahīm
10.171.04c devānāṁ cit tirō vāsam

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1.018.07c  sā dhīnāṃ yógam invati :AHHHLHLA: 4930
1.044.03d  yajñānāṃ adhvaraśríyam :AHHHLHLA: 4930
1.084.02c  ĥśīnāṃ ca stutir úpa :AHHHLHLA: 4930
1.126.06d  yāśūnāṃ bhovíyā šatā :AHHHLHLA: 4930
1.126.07d  gandhārīnāṃ ivāvikā :AHHHLHLA: 4930
1.134.06c  sutānāṃ pītīm arhasi :AHHHLHLA: 4930
2.008.06b  devānāṃ ūtibhir vayām :AHHHLHLA: 4930
2.032.06b  yā devānāṃ āsi svāsā :AHHHLHLA: 4930
3.027.09b  bhūtānāṃ gārbham ā dadhe :AHHHLHLA: 4930
3.062.13b  devānāṃ eti niśkṛtām :AHHHLHLA: 4930
4.047.02b  sōmānāṃ pītīm arhathaḥ :AHHHLHLA: 4930
5.026.06c  devānāṃ dūtā ukthīyah :AHHHLHLA: 4930
5.051.06b  sutānāṃ pītīm arhathaḥ :AHHHLHLA: 4930
8.013.09b  kṛṣṭināṃ ēka ūd vaśī :AHHHLHLA: 4930
8.028.05a  saptānāṃ saptā ěṣṭāyah :AHHHLHLA: 4930
8.031.07a  nā devānāṃ āpi hnutāḥ :AHHHLHLA: 4930
8.031.07b  sumatīṃ nā juguṣtāḥ
8.041.02d  yāḥ sīndhūnāṃ úpodayē :AHHHLHLA: 4930
8.041.05b  yā usrāṇāṃ apicīyā :AHHHLHLA: 4930
8.041.05c  vēda nāmāni gūhiyā
8.044.10c  yajñānāṃ ketūm īmahe :AHHHLHLA: 4930
8.046.22b  uśṭrānāṃ viṃśatīṃ šatā :AHHHLHLA: 4930
8.047.05d  ādityānāṃ utāvasi :AHHHLHLA: 4930
8.056.04c  āśvānāṃ in nā yūthīyām :AHHHLHLA: 4930
8.067.03c  ādityānāṃ arāṃkēte :AHHHLHLA: 4930
9.001.04b  devānāṃ vitīm āndhasā :AHHHLHLA: 4930
9.012.07b  dhīnāṃ antāḥ sabardūghaḥ :AHHHLHLA: 4930

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12 syllable lines

10.093.09d carṣaṇīnāṃ cakrāṃ raśmīṃ nā yoyuve :ALHHHHHHHLHLA: 5
9.103.03c abhi vānir ċśināṃ saptā nūṣata :ALHHLHHHLHLA: 6
1.089.02a devānāṃ bhadrā sumatīr ājūyatāṃ :AHHHHLLLHLHA: 9
9.083.04b pāṭi devānāṃ jānimāṇi ādbhutaḥ :ALHHHLLHLHLA: 139
8.018.01c ādityānāṃ āpūrviyaṃ sāvīmani :AHHHLHLHLHLA: 183
8.036.06a ātrīnāṃ stōmam adrivo mahās kṛḍhi :AHHHLHLHLHLA: 183
1.101.04a yō āsvānāṃ yō gāvāṃ gopātir vaśi :AHHHLHLHLHLA: 209
2.023.16c ā devānāṃ āhate vī vṛāyo hṛḍī :AHHHLHLHLHLA: 209
8.101.12c mahnā devānāṃ asuryāḥ purōhito :AHHHLHLHLHLA: 209
10.044.04d āso yathā keṇipānāṃ inō vṛdhē :AHLHHLHLHLA: 211
10.066.08b bṛhaddivā adhvarāṇāṃ abhiśriyaḥ :AHLHHLHLHLA: 211
1.089.02b devānāṃ rāṭīr abhi no ni vartatāṃ :AHHHLLLHLHLA: 468
1.089.02c devānāṃ sakhyāṃ āpa sedīmā vayāṃ :AHHHLLLHLHLA: 468
1.102.05b dhāṇānāṃ dhartā āvasā vipanyāvaḥ :AHHHLLLHLHLA: 468
1.141.11d devānāṃ śaṃsā ṛtā ā ca sukrātuh :AHHHLLLHLHLA: 468
2.023.01a gaṇānāṃ tvā gaṇāpatīm havāmahe :AHHHLLLHLHLA: 468
2.026.03c devānāṃ yāḥ pitāram āvīvāsati :AHHHLLLHLHLA: 468
9.084.03b devānāṃ sūmnā iṣāyānā upāvasuḥ :AHHHLLLHLHLA: 468
9.107.22c devānāṃ soma pavamāṇa niśkṛtāṃ :AHHHLLLHLHLA: 468
10.036.02d tād devānāṃ āvo adyā vṛṇimahe :AHHHLHLHLHLA: 523
10.036.03d tād devānāṃ āvo adyā vṛṇimahe :AHHHLHLHLHLA: 523
10.036.04d  tád devánām ávo adyā vr̥ṇīmahe: AHHLLLHHLHLA: 523
10.036.05d  tád devánām ávo adyā vr̥ṇīmahe: AHHLLLHHLHLA: 523
10.036.06d  tád devánām ávo adyā vr̥ṇīmahe: AHHLLLHHLHLA: 523
10.036.07d  tád devánām ávo adyā vr̥ṇīmahe: AHHLLLHHLHLA: 523
10.036.08d  tád devánām ávo adyā vr̥ṇīmahe: AHHLLLHHLHLA: 523
10.036.09d  tád devánām ávo adyā vr̥ṇīmahe: AHHLLLHHLHLA: 523
10.036.10d  tád devánām ávo adyā vr̥ṇīmahe: AHHLLLHHLHLA: 523
10.036.11d  tád devánām ávo adyā vr̥ṇīmahe: AHHLLLHHLHLA: 523
10.036.12d  tád devánām ávo adyā vr̥ṇīmahe: AHHLLLHHLHLA: 523

(10.036.02d through 10.036.12d counted as one)

10.177.01d  márícīnām padám ichanti vedhásaḥ: AHHLLLHHLHLA: 523
1.102.04d  prá śātrūṇām maghavan vṛṣṇiyā ruja: AHHLLLHHLHLA: 523
2.013.05b  yó dhautinām ahihann āriṇak pathāḥ: AHHLLLHHLHLA: 523
6.075.06c  abhīśūnām mahimānam paṇāyata: AHHLLLHHLHLA: 523
9.085.07b  prá víprāṇām matāyo váca īrate: AHHLLLHHLHLA: 523
10.035.01d  adyā devánām áva ā vr̥ṇīmahe: AHHLLLHHLHLA: 650
10.064.11b  bhadrā rudrāṇām marútām úpastutiḥ: AHHLLLHHLHLA: 650
10.142.01d  āré hímśānām ápa didyúm á kṛḍhi: AHHLLLHHLHLA: 650
1.031.01b  devó devánām abhavaḥ śivāḥ sākhā: AHHLLLHHLHLA: 650
1.031.02b  kavīr devánām pārī bhūṣasi vratāṃ: AHHLLLHHLHLA: 650
1.044.12a  yád devánām mitramahaḥ puróhito: AHHLLLHHLHLA: 650
1.047.10c  sāsvat kānvānām sādasi priyé hi kaṃ: AHHLLLHHLHLA: 650
1.094.13a  devó devánām asi mitró ádbhuto: AHHLLLHHLHLA: 650
1.101.07a  rudráṇām eti pradīśā vicakṣaṇó: AHHLLLHHLHLA: 650
1.164.15a  sākaṃjānām saptātham āhur ekajāṃ: AHHLLLHHLHLA: 650
2.024.03a  tád devánām devatamāya kārtuvam: AHHLLLHHLHLA: 650
2.025.05c  devánāṃ sumné subhāgaḥ sā edhate: AHHLLLHHLHLA: 650

169
The position of the gerund with regard to its subject

C.2.1 subject gerund

8 syllable lines

10.159.04a yénéndro havíśā kṛtvā :AHHLHHA: 30
10.174.04a yénéndro havíśā kṛtvā :AHHLHHA: 30
10.109.07c ūrjam pṛthivyā bhaktvāya :AHLHHHA: 43
8.100.08c dīvaṃ suparnō gatvāya :AHLHHHA: 43
10.145.05c ubhé sáhasvatī bhūtvā :AHLHLHA: 53
8.091.07c apāláṃ indra trīś pūtvā :AHHHHHHA: 54
10.085.29c  kṛtyaśā padvāti bhūtvā :AHHLHHA: 92
10.090.01c  sā bhūmiḥ viśvāto vṛtvā :AHHLHHA: 92
10.162.05a  yās tvā bhrātā pātir bhūtvā :AHHLHHA: 92
10.162.05b  jāro bhūtvā nipādyate :AHHLHLHA: 4930
3.040.07c  pītvī sómasya vāvṛdhe :AHHLHLHA: 4930
8.076.10b  pītvī śīpre aveyaḥ :AHHLHLHA: 4930

11 syllable lines

10.093.14c  yē yuktvāya pānca śatā asmayū :AHHLHLLHHLA: 3
2.038.06c  sāśvāṁ āpo vīkṛtaṁ hitvī āgād :AHLHLLLHHA: 12
10.099.05b  hitvī gāyam ārēavadya āgāt :AHLHHLHLHA: 16
2.012.03a  yō hatvāhim ārīnaḥ saptā sīndhūn :AHHLLLHHLHA: 379
10.015.12b  āvād dhavyāni surabhīni kṛtvī :AHHHLLLHLHA: 1231
9.069.09d  hitvī vavrīṁ harīto vṛṣṭim ācha :AHHHLLLHHLHA: 1388
10.068.07c  āṇḍēva bhittvā śakunāsya gārbham :AHLHHLHLHLHA: 2313
1.103.02b  vājreṇa hatvā nīr apāḥ sasajra :AHLHHLHLHLHA: 2313
5.040.04c  yuktvā hāribhyāṁ úpa yāsad arvān :AHLHHLHLHLHA: 2313

12 syllable lines

1.161.03d tāni bhrātar ānva vaḥ kṛtvī ēmasi :AHHLLLLHHLHA: 1
2.020.08d hatvī dāsyūn pūra āyasīr nī tārit :AHHHLHLHLHLHA: 3
10.044.08d vṛṣṇaḥ pītvā máda ukthāni śaṃsati :AHHHLHLHLHLHA: 482
7.104.18c vāyo yē bhūtvī patāyanti naktābhir :AHHHHHLHLHLHA: 600
C.2.2 gerund subject

8 syllable lines

1.004.08a asyá pītvā śatakarto :ALHHLHLA: 1979
8.092.06a asyá pītvá mādānāṃ :ALHHLHLA: 1979
9.023.07a asyá pītvá mādānām :ALHHLHLA: 1979

11 syllable lines

10.101.09c sā no duhiyad yāvaseva gatvī :AHLHLLHLHA: 2313
10.157.04a hatvāya devā āsūrān yād āyan :AHLHLLHLHA: 2313
10.165.05d hitvā na ūrjam prá patāt pātiṣṭhaḥ :AHLHLLHLHA: 2313
4.041.05c sā no duhiyad yāvaseva gatvī :AHLHLLHLHA: 2313

12 syllable lines

9.108.02a yāsyā te pītvā vṛṣabhō vṛṣāyāte :ALHHLHLHLHA: 128
C.3  Enclisis to vocatives

C.3.1  Voc.-te

8 syllable lines

5.010.04a  yé agne candra te gíraḥ :AHHHLHLA: 4930
8.061.09b  vípro vā indra te vácaḥ :AHHHLHLA: 4930
10.025.03a  utā vratāni soma te :AHLHLHLA: 3316
1.009.04a  áśrggram indra te gíraḥ :AHLHLHLA: 3316
1.014.02b  gr̥ṇántivipra te dhíyaḥ :AHLHLHLA: 3316
1.082.01e  yójā nú indra te hāri :AHLHLHLA: 3316
1.084.01a  ásāvi sóma indra te :AHLHLHLA: 3316
6.044.01c  sómāḥ sutāḥ sá indra te :AHLHLHLA: 3316
8.004.09b  gómāṁ́ íd indra te sákhā :AHLHLHLA: 3316
8.006.31a  kānvāsa indra te matīṃ :AHLHLHLA: 3316
8.013.31a  vṛṣāyām indra te rātha :AHLHLHLA: 3316
8.021.07a  nūtnā́ íd indra te vayām :AHLHLHLA: 3316
8.062.08a  gr̥n̥é tād indra te sāva :AHLHLHLA: 3316
8.062.10a  új jātām indra te sāva :AHLHLHLA: 3316
8.070.05a  yād dyāva indra te satāṃ :AHLHLHLA: 3316
8.078.04a  nākīṃ vṛdhikā indra te :AHLHLHLA: 3316
8.093.04c  sārvam̐ tád indra te vāsē :AHLHLHLA: 3316
9.067.15a  pāri prā soma te rāso :AHLHLHLA: 3316
10.186.03a  yād adó vāta te gr̥hé :ALHHLHLA: 1979
8.065.04b  hárayo deva te máhaḥ:ALHHLHLA: 1979
6.044.02a  yāḥ śagmás tuviśagma te :AHHLLHLA: 1362

11 syllable lines

7.027.02a  yā indra sūšmo maghavan te ásti :AHLHLLHHLHA: 2313
2.019.08c  brahmanyánta indara+ te náviya :AHLHLLHHLHA: 307
7.022.08c  ná vīrīyam indara+ te ná rádhaḥ :AHLHLLHHLHA: 241

12 syllable lines

1.052.10b  áyoyavid bhiyásā vájra indra te :AHLHLLHHLHA: 662
9.072.04d  śucir dhiyā pavate sóma indra te :AHLHLLHHLHA: 662
9.072.05b  anuṣvadhám pavate sóma indra te :AHLHLLHHLHA: 662
1.055.07c  yámiśṭhāsaḥ sáráthayo yá indra te :AHHHLLLHLHLHA: 650
9.086.28c  áthedáṃ víśvam pavamāna te váše :AHHHLLLHLHLHA: 650
9.107.20a  utáhám náktam utá soma te dívā :AHHHLLLHLHLHA: 468
6.043.01c  ayáṃ sá sóma indra te sutáḥ píba :AHLHHLHLHLHA: 224
C.3.2 X-te

8 syllable lines

8.081.08a ñdra yá u nú te ásti :ALLLLHA: 2
10.158.02a jóṣā savitar yáṣya te :AHLLHHLA: 11
10.162.03a yás te hánti patáyantaṃ :AHHLLLHA: 15
10.145.06a úpa te 'dhāṃ sáhamānām :ALHHLLHA: 21
1.030.04a ayám u te sám atasi :ALLHLLLAL: 24
6.016.17a yátra kúva ca te máno :ALLLLLHA: 25
10.058.09a yát te párvatān bṛható :AHHLHLLA: 27
5.022.03c várenyasya te ávasa :AHHLHLLA: 27
10.161.05c sárvānga sárvam te cákṣuḥ :AHLHHHA: 43
8.001.30a stuhí stuhíd eté ghā te :AHLHHHHA: 43
8.002.30a gíraś ca yás te girvāha :AHLHHHHA: 43
1.043.09a yás te prajā amṛtasya :AHLHLHL: 53
8.002.01c ánabhayin rarimā te :AHLHLHLA: 53
8.002.03a táṃ te yávaṃ yáthā góbhīḥ :AHLHLHLA: 53
8.046.03a á yásya te mahimānaṃ :AHLHLHLA: 53
8.068.08a ná yásya te śavasāna :AHLHLHLA: 53
10.163.04a úrūbhyaṃ te aṣṭhivādbhyām :AHHHHHA: 54
6.016.25a vásvi te agne sāmdṛṣṭir :AHHHHHA: 54
10.173.05a dhruvāṃ te rájā váruṇo :AHHHHHLA: 68
10.058.02a yát te dīvaṃ yát pṛthivīm :AHLHLHLA: 71
10.058.04a yát te cátaśraḥ pradīśo :AHLHLHLA: 71
10.058.06a yát te máriciḥ pravāto :AHLHLHLA: 71
10.058.01a yát te yamāṃ vaivasvatām :AHLHHHLA: 75

175
5.050.05a eśā te deva nayītā+:ALHHLLLA: 81
8.068.11a yāsya te svādū sakhiyāṃ :ALHHLLL: 81
10.105.09a ūrdhvā yāt te tretīṇī bhūḍ :AHHHLHA: 85
10.163.01a aksībhyaṃ te nāsikābhyaṃ :AHHHLHA: 85
2.006.02a ayā te agne vidhema :AHHHLHA: 85
10.058.03a yāt te bhūmiṃ cāturbṛṣṭim :AHHHLHHA: 92
10.058.12a yāt te bhūtāṃ ca bhāvyāṃ ca :AHHHLHHA: 92
10.137.02c dākṣaṃ te anyā ā vātu :AHHHLHHA: 92
10.137.04c dākṣaṃ te bhadrām ābhārṣam :AHHHLHHA: 92
10.184.02c gārbhaṃ te aśvīnau devāv :AHHHLHHA: 92
6.016.27a té te agne tuvāūtā :AHHHLHHA: 92
8.103.04b mārta yās te vaso dāṣat :AHHHLHHA: 92
10.085.12a śūcī te cakrē yātiyā :AHHHLHHA: 108
10.085.16a duvē te cakrē sūriye :AHHHLHHA: 108
1.097.04a prá yāt te agne sūrāyo :AHHHLHHA: 108
3.062.07a iyāṃ te pūṣann āghṛṇe :AHHHLHHA: 108
6.053.09a yā te áśṭrā gōopaśā :AHHHLHHA: 108
10.058.08a yāt te sūryaṃ yād uśāsāṃ :AHHHLLLA: 152
5.035.01a yās te sādhiṣṭho ávasa :AHHHLLLA: 152
8.053.07a yās te sādhiṣṭho ávase :AHHHLLLA: 152
6.002.09c dhāmā ha yāt te ajara :AHLHLLLA: 168
10.145.06c mām ānu prá te máno :ALLHLHLA: 238
1.175.01a mátsi āpāyi te máhāḥ :ALLHLHLA: 238
8.024.09a índra yāthā hī ásti te :ALLHLHLA: 238
8.063.08a iyām u te ānuṣṭutiś :ALLHLHLA: 238
10.060.11d niāg bhavatu te rápaḥ :AHLLLHLA: 621
8.092.23c yā índra jaṭhāreṣu te :AHLLLHLA: 621
10.163.04d bháṃsaso ví vṛhāmi te :ALHLLHLA: 691
10.163.05d tám idāṃ ví vṛhāmi te :ALHLLHLA: 691
10.163.06d tám idāṃ ví vṛhāmi te :ALHLLHLA: 691
4.032.19a dáṣa te kalásānāṃ :ALHLLHLA: 691
8.044.24c syāma te sumatāv ápi :ALHLLHLA: 691
8.053.07b té siyāma bhāreṣu te :ALHLLHLA: 691
8.068.03a yásya te mahanā mahāḥ :ALHLLHLA: 691
9.011.02a abhí te mádhunā páyo :ALHLLHLA: 691
9.061.29a ásya te sakhiyé vayáṃ :ALHLLHLA: 691
9.065.15a yásya te mádiyāṃ rásaṃ :ALHLLHLA: 691
9.066.14a ásya te sakhiyé vayáṃ :ALHLLHLA: 691
10.058.10a yát te vίśvam idāṃ jāgan :AHHLHLA: 1362
10.163.01d jihvāyā ví vṛhāmi te :AHHLHLA: 1362
10.163.02d bāhūbhyāṃ ví vṛhāmi te :AHHLHLA: 1362
10.163.03d plāśíbhyo ví vṛhāmi te :AHHLHLA: 1362
1.091.16a ápyāyasvasámetute :AHHLHLA: 1362
1.134.01d ūrdhvā te ánu sūntā :AHHLHLA: 1362
1.138.04g ná te sakhyám apahnuvē :AHHLHLA: 1362
1.170.04d yajñāṃ te tanavāvahai :AHHLHLA: 1362
1.187.09a yát te soma gávāśiro :AHHLHLA: 1362
4.030.02a satrá te ánu kṛṣṭāyo :AHHLHLA: 1362
5.006.04a á te agna idhīmahī :AHHLHLA: 1362
5.006.05a á te agna ṛcā havih :AHHLHLA: 1362
6.016.47a á te agna ṛcā havír :AHHLHLA: 1362
8.001.09a yé te sánti dāśagvīnaḥ :AHHLHLA: 1362
8.013.31b utó te vr̥ṣanā hārī :AHHLHLA: 1362
8.017.13a yás te śr̥ṇgavr̥so napāt :AHHLHLA: 1362

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8.026.10b  kuvít te śrávato hávam :AHHLHLHLA: 1362
8.036.01c  yāṃ te bhāgām ādhārayan :AHHLHLHLA: 1362
8.036.02c  yāṃ te bhāgām ādhārayan :AHHLHLHLA: 1362
8.036.03c  yāṃ te bhāgām ādhārayan :AHHLHLHLA: 1362
8.036.04c  yāṃ te bhāgām ādhārayan :AHHLHLHLA: 1362
8.036.05c  yāṃ te bhāgām ādhārayan :AHHLHLHLA: 1362
8.036.06c  yāṃ te bhāgām ādhārayan :AHHLHLHLA: 1362
8.043.02a  āsmai te pratihāryate :AHHLHLHLA: 1362
8.045.06b  yās te vāṣṭi vavākṣi tāt :AHHLHLHLA: 1362
8.046.32c  tē te vāyav imē jānā :AHHLHLHLA: 1362
9.031.04a  ā pyāyasva sām etu te :AHHLHLHLA: 1362
9.063.22b  āndrām gachatu te mádaḥ :AHHLHLHLA: 1362
10.059.08e  mó śū te kīṃ canāmamat :ALHHLHLA: 1979
10.059.09f  mó śū te kīṃ canāmamat :ALHHLHLA: 1979
10.059.10e  mó śū te kīṃ canāmamat :ALHHLHLA: 1979
1.009.05c  āsad ít te vibhū prabhū :ALHHLHLA: 1979
10.127.08a  úpa te gā ivākaram :ALHHLHLA: 1979
10.142.08a  āyane te parāyañe :ALHHLHLA: 1979
10.161.05d  sārvam āyuś ca te ’vidam :ALHHLHLA: 1979
1.024.05a  bhāgabhaktasya te vayām :ALHHLHLA: 1979
1.080.03c  āndra nṛmṇāṃ hī te śāvo :ALHHLHLA: 1979
1.080.08d  bāhuvos te bālaṃ hitām :ALHHLHLA: 1979
1.080.13d  divī te badbadhe śāvo :ALHHLHLA: 1979
1.081.02e  sunvate bhūri te vāsu :ALHHLHLA: 1979
1.081.06d  ví bhajā bhūri te vāsu :ALHHLHLA: 1979
1.091.09a  sōma yās te mayobhúva :ALHHLHLA: 1979
3.021.02a  ghṛtvāvantah pavāka + te :ALHHLHLA: 1979
3.042.08c eṣā rārantu te hṛḍī:ALHHLHLA: 1979
4.009.08a pārī te dūḷābho rátho:ALHHLHLA: 1979
4.048.05c utá vā te sahasrīṇo :ALHHLHLA: 1979
5.035.04b jajñiśe vṛṣṇi te śāvāḥ :ALHHLHLA: 1979
6.016.16a ēhi ū śū brāvāṇi te:ALHHLHLA: 1979
6.016.18a nahī te pūrtām akśipād :ALHHLHLA: 1979
8.013.23a utá te sūṣṭutā hārī :ALHHLHLA: 1979
8.014.06a vāvṛdhānāsyā te vayāṃ :ALHHLHLA: 1979
8.021.16b īndra mā te grḥāmahi :ALHHLHLA: 1979
8.032.08c māghavan bhūri te vāsu :ALHHLHLA: 1979
8.033.11a vṛṣaṇas te abhiśavo :ALHHLHLA: 1979
8.045.42a yāsya te viśvāmānuśo :ALHHLHLA: 1979
8.046.11a nahī te śūra rádhaso :ALHHLHLA: 1979
8.056.01a prāti te dasyave vṛka :ALHHLHLA: 1979
8.061.02d sōmakāmaṃ hī te mānāḥ :ALHHLHLA: 1979
8.069.12b yāsya te saptā sīndhavaḥ :ALHHLHLA: 1979
8.080.06b sukāraṃ te kīm īt pārī :ALHHLHLA: 1979
8.090.03d īndra yā te āmanmahi :ALHHLHLA: 1979
8.093.11a yāsya te nū cid āḍīśam :ALHHLHLA: 1979
8.095.02d īndra viśvāsā su te hitām :ALHHLHLA: 1979
8.095.05a īndra yās te nāvīyasīṃ :ALHHLHLA: 1979
9.029.03a suṣāhā soma táni te :ALHHLHLA: 1979
9.031.03c sōma várdhanti te máhaḥ :ALHHLHLA: 1979
9.061.04a pāvamāṇasyā te vayāṃ :ALHHLHLA: 1979
9.061.17a pāvamāṇasya te ráso :ALHHLHLA: 1979
9.065.09a tāsya te vājīno vayāṃ :ALHHLHLA: 1979
9.066.03a pārī dhāmāṇi yāṇi te :ALHHLHLA: 1979
9.066.10a pávamānasya te kave :ALHHLHLA: 1979
9.066.30a yásya te dyumnávat páyah :ALHHLHLA: 1979
9.100.04a pāri te jigyūso yathā :ALHHLHLA: 1979
1.004.04c yás te sākhibhya ā váram :AHLHLHLA: 3316
10.058.05a yát te samudrám arṇavām :AHLHLHLA: 3316
10.058.07a yát te apó yád óśadhīr :AHLHLHLA: 3316
10.058.11a yát te párāḥ parāvāto :AHLHLHLA: 3316
1.008.09a evā hí te víbhūtaya :AHLHLHLA: 3316
10.086.15d yáṃ te sunóti bhāvayūr :AHLHLHLA: 3316
10.102.01a prá te ráatham mithūkṛtam :AHLHLHLA: 3316
1.014.08b té te pibantu jihvāyā :AHLHLHLA: 3316
10.144.01a ayām hí te āmariya :AHLHLHLA: 3316
1.025.01a yác cid dhí te víśo yathā :AHLHLHLA: 3316
1.028.06a utá sma te vanaspate :AHLHLHLA: 3316
1.030.21a vayāṃ hí te ámanmahi :AHLHLHLA: 3316
1.036.04d yás te dadāśa mártiyaḥ :AHLHLHLA: 3316
1.080.14a abhīṣṭané te adrivo :AHLHLHLA: 3316
1.084.19d índra brāvīmi te vácaḥ :AHLHLHLA: 3316
1.097.04b jāyemahi prá te vayām :AHLHLHLA: 3316
1.127.09d śuṣmíntamo hí te mádo :AHLHLHLA: 3316
1.130.02d mádāya haryatāya te :AHLHLHLA: 3316
1.133.04d takát sú te manāyati :AHLHLHLA: 3316
1.170.03c vidmā hí te yāthā máno :AHLHLHLA: 3316
1.175.05a śuṣmíntamo hí te mádo :AHLHLHLA: 3316
1.191.11b saká jaghāsa te viṣáṃ :AHLHLHLA: 3316
1.191.14c tās te viṣáṃ ví jabhrira :AHLHLHLA: 3316
3.021.05b prá te vayāṃ dadāmahe :AHLHLHLA: 3316
3.027.03a ágne śakéma te vayám :AHLHLHLA: 3316
3.037.03a námāni te śatakraṭo :AHLHLHLA: 3316
3.037.09b yā te jāneṣu paṅcāsu :AHLHLHLA: 3316
3.051.11a yās te ānu svadháṃ ásat :AHLHLHLA: 3316
3.052.04c īndra krátur hí te bṛhán :AHLHLHLA: 3316
4.031.10a asmāṁ avantu te śatám :AHLHLHLA: 3316
4.032.11a tā te grñanti vedháso :AHLHLHLA: 3316
5.035.03a ā te ávo váreṇiyaṁ :AHLHLHLA: 3316
5.039.02c vidyāma tásya te vayám :AHLHLHLA: 3316
5.079.05a yāc cid dhí te gaṇā ime :AHLHLHLA: 3316
6.016.38b áganma sárma te vayám :AHLHLHLA: 3316
6.016.47c té te bhavantu ukṣaṇa :AHLHLHLA: 3316
6.045.30a asmākam indra bhūtu te :AHLHLHLA: 3316
6.056.06a ā te suastim īmaha :AHLHLHLA: 3316
7.031.07a mahāṁ utāsi yásya te :AHLHLHLA: 3316
7.031.09c sāṁ te namanta kṛṣṭāyaḥ :AHLHLHLA: 3316
7.096.05a yé te sarasva ǔrmáyo :AHLHLHLA: 3316
8.003.01d asmāṁ avantu te dhíyaḥ :AHLHLHLA: 3316
8.003.10b tād indra vṛṣṇi te śávaḥ :AHLHLHLA: 3316
8.011.05a mártā ámartiyasya te :AHLHLHLA: 3316
8.014.10c ví te mádā arājiṣuh :AHLHLHLA: 3316
8.015.04a tāṁ te mádaṁ grñimasi :AHLHLHLA: 3316
8.017.06c sómah sám astu te ḍṛdé :AHLHLHLA: 3316
8.017.12b ayām ráṇāya te sutāḥ :AHLHLHLA: 3316
8.021.14b pīyanti te surāsúvaḥ :AHLHLHLA: 3316
8.021.15a má te amājúro yathā :AHLHLHLA: 3316
8.033.19c má te kaśaplakaú ṅṛśan :AHLHLHLA: 3316
8.034.05a dádhāmi te sutānāṃ :AHLHLHLA: 3316
8.043.33a tát te sahasva imahe :AHLHLHLA: 3316
8.044.04a út te bṛhánto arcāyaḥ :AHLHLHLA: 3316
8.044.25a ágne dhṛtávratāya te :AHLHLHLA: 3316
8.045.10a vṛjyāma te pári dviśo :AHLHLHLA: 3316
8.045.12a ūrdhvā hī te divé-dive :AHLHLHLA: 3316
8.045.19a yác cid dhí te āpi vyáthi :AHLHLHLA: 3316
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4.004.08b  sāṃ te vāvātā jaraṃm iyāṃ gīḥ :AHHHHLLHLHA: 1472
4.006.06c  nā yāt te śocīs támasā vāranta :AHHHHLLHLHA: 1472
4.016.07b  prāvat te vájram pṛthivī sácetāḥ :AHHHHLLHLHA: 1472
4.016.10b  bhúvat te kūtsaḥ sakhiyē nīkāmaḥ :AHHHHLLHLHA: 1472
4.021.09a  bhadrā te háṣṭā súkṛtotá pāṇī :AHHHHLLHLHA: 1472
4.022.06a  tá tū te satyā tuvinṛṁṇa viśvā :AHHHHLLHLHA: 1472
4.042.07a  vidūṣ te vīśvā bhūvanāni tāsya :AHHHHLLHLHA: 1472
5.002.11a  etāṁ te stōmaṁ tuvijāta vípro :AHHHHLLHLHA: 1472
5.032.12c  kīṁ te brahmāṇo ṣrīhate sākhāyo :AHHHHLLHLHA: 1472
6.001.10d  ā te bhadrāyāṁ sumatau yatema :AHHHHLLHLHA: 1472
6.006.04a  yē te śukrāsāḥ śucayāḥ súcismaḥ :AHHHHLLHLHA: 1472
6.017.09a  ādha dyauś cit te āpa sā nú vājrād :AHHHHLLHLHA: 1472
6.017.10a  ādha tvāṣṭā te mahā ugra vājraṁ :AHHHHLLHLHA: 1472
6.021.03c  kadā te mārtā amṛtasya dhāma :AHHHHLLHLHA: 1472
6.025.07a  ādha sā te carṣanāyao yād ējān :AHHHHLLHLHA: 1472
6.029.03a  śriyē te pāda dūva ā mimikṣur :AHHHHLLHLHA: 1472
6.040.04d  āthā te yajñās tanūve vāyo dhāt :AHHHHLLHLHA: 1472
6.041.05b  āraṁ te somas tanūve bhavāti :AHHHHLLHLHA: 1472
6.058.01d  bhadrā te pūṣann ihā rātīr astu :AHHHHLLHLHA: 1472
7.001.22c  mā te asmān durmatāyao bhṛmāc cid :AHHHHLLHLHA: 1472
7.021.09c  vanvāntu sā te āvasā samikē :AHHHHLLHLHA: 1472
7.022.05c  sādā te nāma svayaśo vivakmi :AHHHHLLHLHA: 1472
7.037.03c  ubhā te purṇā vāsūnā gābhaṣti :AHHHHLLHLHA: 1472
7.087.02a  ātmā te vāto rája ā navīnot :AHHHHLLHLHA: 1472
7.088.05d  sahāsrdvāraṇaṁ jagamā gṛhāṁ te :AHHHHLLHLHA: 1472
7.100.06a  kīṁ īt te viśṇo parīkāśiyam bhūt :AHHHHLLHLHA: 1472
8.100.02b  hitās te bhāgaḥ sutō astu somaḥ :AHHHHLLHLHA: 1472
10.010.02a  nā te sākhā sakhīyaṁ vaśi etāt :AHLHLLHLHLHA: 1670
10.016.04c  yās te śivās tanūvo jātavedas :AHLHLLHLHLHA: 1670
10.028.03c  pācanti te vṛśabhāṁ ātīsī tēsām :AHLHLLHLHLHA: 1670
10.029.06a  mātre nú te sūmite indra pūrvī :AHLHLLHLHLHA: 1670
10.029.06c  vārāya te ghṛtāvantaḥ sutāsāḥ :AHLHLLHLHLHA: 1670
10.044.02d  vārdhāma te papūso vṛṣṇiyāni :AHLHLLHLHLHA: 1670
10.069.03a yát te mánur yád ánikaṁ sumitrāḥ :AHLHLLHHLHA: 1670
10.083.07c juhómi te dharúnam mádhvo ágram :AHLHLLHHLHA: 1670
10.095.05c púrūravo ánu te kétam áyaṁ :AHLHLLHHLHA: 1670
10.096.13b átho idāṁ sávanaṁ kévalaṁ te :AHLHLLHHLHA: 1670
10.098.02d dádhámi te dyumátim vácam āsán :AHLHLLHHLHA: 1670
1.091.03a rājño nú te várūṇasya vratáni :AHLHLLHHLHA: 1670
1.164.49a yás te stánaḥ śaśayó yó mayobhúr :AHLHLLHHLHA: 1670
1.189.04c mã te bhayám jaritáraṁ yaviṣṭha :AHLHLLHHLHA: 1670
2.009.03a vidhéma te paramé jánman agne :AHLHLLHHLHA: 1670
2.018.06c ayáṁ hí te śunáhotreṣu sóma :AHLHLLHHLHA: 1670
2.033.01a ā te pitar marutāṁ sumnám etu :AHLHLLHHLHA: 1670
3.014.02a áyāmi te námaūktiṁ juṣasva :AHLHLLHHLHA: 1670
3.032.01b mádhyaṁdinaṁ sávanaṁ cáru yát te :AHLHLLHHLHA: 1670
3.033.08d mã no ní kaḥ puruṣatrá námas te :AHLHLLHHLHA: 1670
3.034.02a makhsáya te taviṣásya prá jútím :AHLHLLHHLHA: 1670
3.035.05a mã te hāri vṛṣanā vitāśṛṣṭhā :AHLHLLHHLHA: 1670
3.038.02c imá u te praṇīyo várdhamānā :AHLHLLHHLHA: 1670
3.046.01a yudhmáṣya te vṛṣabháṣya svarája :AHLHLLHHLHA: 1670
3.048.01c sádhóḥ piba pratikāmām yáthā te :AHLHLLHHLHA: 1670
3.057.04c imá u te mánave bhūrivārā :AHLHLLHHLHA: 1670
4.003.02d imá u te suapāka praticīḥ :AHLHLLHHLHA: 1670
4.004.08a árcāmi te sumatīṁ ghóṣi arvák :AHLHLLHHLHA: 1670
4.012.04a yác cid dhí te puruṣatrá yaviṣṭha :AHLHLLHHLHA: 1670
4.016.08b āvīr bhuvat sarámaṁ pūrviyāṁ te :AHLHLLHHLHA: 1670
4.016.21c ákāri te harivo bráhma návyam :AHLHLLHHLHA: 1670
4.017.21c ákāri te harivo bráhma návyam :AHLHLLHHLHA: 1670
4.019.11c ákāri te harivo bráhma návyam :AHLHLLHHLHA: 1670
4.020.11c  ákāri te harivo brāhma nāvyāṃ :AHLHLLHHLHA: 1670
4.021.10d  bhakṣiyā te āvaso daiviṇasya :AHLHLLHHLHA: 1670
4.021.11c  ákāri te harivo brāhma nāvyāṃ :AHLHLLHHLHA: 1670
4.022.07a  átrāha te harivas tā u devīr :AHLHLLHHLHA: 1670
4.022.11c  ákāri te harivo brāhma nāvyāṃ :AHLHLLHHLHA: 1670
4.023.11c  ákāri te harivo brāhma nāvyāṃ :AHLHLLHHLHA: 1670
4.024.11c  ákāri te harivo brāhma nāvyāṃ :AHLHLLHHLHA: 1670
4.035.07b  mādhyaṃdīnaṃ sāvanaṃ kēvalaṃ te :AHLHLLHHLHA: 1670
5.015.05a  vājo nū te śāvasas pātu ántam :AHLHLLHHLHA: 1670
5.031.07a  tād īn nū te kāraṇaṃ dasma vipra :AHLHLLHHLHA: 1670
5.036.02a  ā te hānū harivah śūra śīpre :AHLHLLHHLHA: 1670
5.043.05a  āsāvi te jujuśāṇāya sōmaḥ :AHLHLLHHLHA: 1670
6.018.04a  sād īd dhī te tuvisātāsya mānye :AHLHLLHHLHA: 1670
6.019.07a  yās te mádaḥ pṛṭanāśāl āṃḍhra :AHLHLLHHLHA: 1670
6.020.10a  sanēma te āvasā nāvyā indra :AHLHLLHHLHA: 1670
6.044.20a  āte vṛṣan vṛṣaṇo drōṇam astur :AHLHLLHHLHA: 1670
6.064.04a  sugótā te supāthā pārvateśu :AHLHLLHHLHA: 1670
7.003.02d  ádha sma te vṛājanāṃ kṛṣṇāṃ asti :AHLHLLHHLHA: 1670
7.003.03a  úd yāsya te nāvajātāsya vṛṣṇo :AHLHLLHHLHA: 1670
7.018.03d  siyāma te sumatāv indra śārman :AHLHLLHHLHA: 1670
7.022.02a  yās te mádo yūjiyaś cārur āsti :AHLHLLHHLHA: 1670
7.022.05a  nā te gīro āpi mṛṣye turāsya :AHLHLLHHLHA: 1670
7.024.06b  prá te mahīṃ sumatiṇ vevidāma :AHLHLLHHLHA: 1670
7.025.06b  prá te mahīṃ sumatiṇ vevidāma :AHLHLLHHLHA: 1670
8.048.06c  áthā hī te máda ā soma mānye :AHLHLLHHLHA: 1670
8.048.09c  yāt te vayām pramināma vratānī :AHLHLLHHLHA: 1670
8.100.02a  dádhāmi te mádhuno bhakṣām āgre :AHLHLLHHLHA: 1670
9.087.04a  eśā syā te mādhumāṁ indra sōmo :AHLHLLHHLHA: 1670
9.088.08a  rājño nú te vāruṇasya vratāni :AHLHLLHHLHA: 1670
9.096.24a  ā te rūcaḥ pāvamānasya soma :AHLHLLHHLHA: 1670
10.014.11a  yaú te śuvānau yama rakṣitārau :AHLHLLHHLHA: 2313
10.020.10a  evā te agne vimadó maniśām :AHLHLLHHLHA: 2313
10.029.05c  gīraś ca yé te tuvijāta pūrvī :AHLHLLHHLHA: 2313
10.045.02a  vidmā te agne tṛēdhā trayāṇi :AHLHLLHHLHA: 2313
10.051.01c  vīśvā apasyad bahudhā te agne :AHLHLLHHLHA: 2313
10.061.22d  anehāsas te harivo abhiṣṭau :AHLHLLHHLHA: 2313
10.091.15a  āhāvi agne havīr āsīye te :AHLHLLHHLHA: 2313
10.112.05c  sā te ṽuṛāmdhiṁ tāviśim iyarti :AHLHLLHHLHA: 2313
10.120.02d  sāṁ te navanta prābhṛṭā mádeṣu :AHLHLLHHLHA: 2313
1.073.10c  sakėma rāyāḥ sudhúro yāmaṃ te :AHLHLLHHLHA: 2313
1.079.02a  ā te suparṇā aminantaṁ ēvaiḥ :AHLHLLHHLHA: 2313
1.123.11d  nā tāt te anyā uśāso naṣanta :AHLHLLHHLHA: 2313
1.124.12a  út te vāyaś cid vasatér apaptan :AHLHLLHHLHA: 2313
1.147.01a  kathā te agne śucāyanta āyóṛ :AHLHLLHHLHA: 2313
1.150.03c  prá-prét te agne vanuṣaḥ siyāma :AHLHLLHHLHA: 2313
1.165.09a  ánuttam ā te maghavan nākīr nú :AHLHLLHHLHA: 2313
1.169.04c  stūtaś ca yās te cakāṇanta vāyō :AHLHLLHHLHA: 2313
1.173.08a  evā hī te śaṁ sāvanā samudrā :AHLHLLHHLHA: 2313
1.178.01d  vīśvā te aṣyāṁ pári āpa āyōḥ :AHLHLLHHLHA: 2313
2.028.08a  nāmaḥ purā te varuṇotā nūnām :AHLHLLHHLHA: 2313
2.033.11d  anyām te asmān nī vapantu sēnāḥ :AHLHLLHHLHA: 2313
3.001.20a  etā te agne jānimā sānāni :AHLHLLHHLHA: 2313
3.006.05a  vratā te agne mahatō mahāni :AHLHLLHHLHA: 2313
3.006.07a  divāś cid ā te rucayanta rokā :AHLHLLHHLHA: 2313

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bhūyāma te suṣṭutāyaś ca vāsvaḥ: AHLHLLLHLHA: 2313
yé tvām ávardhann ábhavan gaṇás te: AHLHLLLHLHA: 2313
á te saparyú javáse yunajmi: AHLHLLLHLHA: 2313
pūṣaṇváte te cakṛmā karambháṃ: AHLHLLLHLHA: 2313
yás te bhárád ánniyate cid ánnam: AHLHLLLHLHA: 2313
ayá te agne samídha vidhema: AHLHLLLHLHA: 2313
bhadrá te agne suanika saṃḍīg: AHLHLLLHLHA: 2313
prá te divó ná stanayanti súśmāḥ: AHLHLLLHLHA: 2313
bhadrám te agne sahasinn ánīkam: AHLHLLLHLHA: 2313
má te sákhāyaḥ sádam íd riśáma: AHLHLLLHLHA: 2313
vayám hí á te cakṛmā sabádha: AHLHLLLHLHA: 2313
dá te níśattiḥ kím u nó mamatsi: AHLHLLLHLHA: 2313
bhárte agne máhi śárma bhadrám: AHLHLLLHLHA: 2313
evá te agne sumatiḥ cakānó: AHLHLLLHLHA: 2313
vásūni rājan vasúṭā te asyām: AHLHLLLHLHA: 2313
prá tát te adyā káraṇaṃ kṛtám bhūt: AHLHLLLHLHA: 2313
idá hí te véviṣataḥ purājáḥ: AHLHLLLHLHA: 2313
tán no ví voco yádi te purá cij: AHLHLLLHLHA: 2313
śácivatas te puruśāka śákā: AHLHLLLHLHA: 2313
vájrasya yát te nīhatasya súśmāt: AHLHLLLHLHA: 2313
śukrāṃ te anyád yajatāṃ te anyád: AHLHLLLHLHA: 2313
út te váyaś cid vasatēr aaptaṇ: AHLHLLLHLHA: 2313
divó ná te tanyatūr eti sūṣmaś: AHLHLLLHLHA: 2313
krátum hí te mitramaho juśánta: AHLHLLLHLHA: 2313
vodvaṃ te agne samídha vidhema: AHLHLLLHLHA: 2313
priyāsa íte maghavann abhiṣṭau: AHLHLLLHLHA: 2313
yé te hávebhir ví paṇīṁr ádāśann: AHLHLLLHLHA: 2313
7.020.08c vayām te asyām sumatau cāniṣṭhāḥ: AHLHLLLHHLHA: 2313
7.021.06d nā śātrur āntaṁ vividat yudhā te: AHLHLLLHHLHA: 2313
7.042.02a sugās te agne sānavitto ādhvā: AHLHLLLHHLHA: 2313
9.097.06b īndram mādo gachatu te bhārāya: AHLHLLLHHLHA: 2313

12 syllable lines

10.010.13b naivā te máno hṛdayaṁ cāvidāma: AHHHLLLHHLHA: 1
2.001.07d tuvām pāyūr dáme yās te ávidhat: AHHHLLLHHLHA: 2
8.060.14a nahī te agne vrṣabha pratidhṛṣe: ALLHLHLLLHHLA: 2
6.075.18c urór vāriyo vārṇas te kṛṇotu: AHLHLLLHHLHA: 3
10.115.04a ví yāsyat te jrayasānasya ajara: AHLHLLLHHLHA: 4
1.055.07a dānīya mānaḥ somapāvan astu te: AHLHLLLHHLHA: 8
4.058.11a dhāman te víśvam bhūvānam ādhi śrītām: AHHHLLLLHHLHA: 9
1.127.09f ádha smā te pāri caranti ajara: AHHHLLLLHHLHA: 11
2.001.09c tuvām putró bhavasi yās te ávidhat: AHHHLLLLHHLHA: 11
1.083.03c ásamyatto vratē te kṣeti pūṣyati: AHHHLLLLHHLHA: 21
1.135.09a imē yē te sū vāyo bāhūojasō: AHHHLLLLHHLHA: 21
3.021.05c scōtanti te vaso stokā ādhi tvacī: AHLHLLLHHLHA: 22
2.002.12a ubhāyāsō jātavedāḥ siyāma te: ALHHHLHHLHLA: 69
2.016.03b nā samudrāḥ párvatair indra te ráthaḥ: ALHHHLHHLHLA: 69
6.048.16b śāṃsiśaṁ nú te apikarṇa āghṛṇe: ALHLHLLLHHLHA: 79
1.114.09d áthā vayām áva ĭt te vṛṇimahe: AHHLLLHHLHLHA: 85
1.036.03c mahās te satō ví caranti arcāyo: AHHHLLLLHHLHA: 104
1.102.01a imāṃ te dhīyam prá bhare mahō mahīm: AHHHLLLLHHLHA: 104
2.041.18c yā te mānma gr̥t̥samadā ṛṭāvari: AHHHLLLLHHLHA: 104

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8.099.06c víśväs te spṛḍhaḥ śnathayantaṁ manyāve :AHHLHLLHHLHLA: 104
8.101.11c mahās te sató mahimā panasyate :AHHLHLLHHLHLA: 104
9.086.05b prabhós te satáḥ pārī yanti ketávaḥ :AHHLHLLHHLHLA: 104
1.057.02a ádha te víśvam ánu hāsad iṣṭāya :ALHLLLHHLHLA: 113
1.135.08e ná te vāya úpa dasyanti dhenávo :AHHLLLLHHLHLA: 118
2.016.03c ná te vājram ánu āsnota kāś canā :AHHLLLLHHLHLA: 118
7.046.03a yā te didyūd ávāṣyāśī divās pārī :AHHLLLLHHLHLA: 118
8.051.07c úpopén nú maghavan bhūya ín nú te :AHHLLLLHHLHLA: 118
9.074.09a adbhūḥ somapṛcānásya te ráso :AHHLLLLHHLHLA: 118
10.037.09a yásya te víśvā bhūvanāni ketūnā :ALHHLHLLLHHLH: 139
1.054.01b nahí te ántaḥ śāvasaḥ parānāśe :ALHHLHLLLHHLH: 139
1.114.09a úpa te stómān paśupā ivākaram :ALHHLHLLLHHLH: 139
1.138.03a yásya te pūṣan sakhīyē vipanyāvah :ALHHLHLLLHHLH: 139
8.099.06a ánu te sūṣmāḥ turāyantam iyatuḥ :ALHHLHLLLHHLH: 139
9.079.04a divī te nábhā paramó yā ādadē :ALHHLHLLLHHLH: 139
9.108.02a yásya te pītvā vṛṣabhó vṛṣāyāte :ALHHLHLLLHHLH: 139
8.050.08a ánu te dyauṁ bṛhatī virīyam mama :ALHHLHLLLHHLH: 161
1.094.10b vātajūtā vṛṣabhāsyaeva te rāvaḥ :ALHHLHLLLHHLH: 161
8.050.08a rathirāso hārayo yé te asrīdha :ALHHLHLLLHHLH: 161
1.084.20a má te rádhaṁsi má ta útáyo vaso :AHHLHHLHHLHLA: 183
1.106.05b śaṁ yór yát te mánurhitam tád imahe :AHHLHHLHHLHLA: 183
7.081.04c táṣyās te ratnabhāja imahe vayāṁ :AHHLHHLHHLHLA: 183
8.012.25c ád íte haryatā hārī vavakṣatuḥ :AHHLHHLHHLHLA: 183
8.012.26c ád íte haryatā hārī vavakṣatuḥ :AHHLHHLHHLHLA: 183
8.012.27c ád íte haryatā hārī vavakṣatuḥ :AHHLHHLHHLHLA: 183
1.094.11c sugāṁ tát te tāvakēbhya ráthebhīyo :AHHLHHLHHLHLA: 209
1.094.14a tát te bhadrāṁ yát sāmiddhaḥ suvé dáme :AHHLHHLHHLHLA: 209
1.130.06a imāṃ te vácaṇṭh vasūyānta āyāvo :AHHHHLHHLHLA: 209
1.132.02f asmatrā te sadhrīak santu rātāyo :AHHHHLHHLHLA: 209
1.132.04a nū itthā te pūrvāthā ca pravācyāṃ :AHHHHLHHLHLA: 209
1.134.06f víśvā īt te dhenávo duhra āśīraṃ :AHHHHLHHLHLA: 209
3.021.05a ójiṣṭham te madhyatō médā údbhṛtām :AHHHHLHHLHLA: 209
5.008.05d táttúpráyaḥ pratnāthāte śukvanāṃ :AHHHHLHHLHLA: 209
10.050.06c vārāya te pāṭaraṃ + dhármane tánā :AHLHHLHHLHLA: 211
10.093.08b ā te hári jūjuvānāsya vājīnā :AHLHHLHHLHLA: 211
1.082.06a yunājmi te brāhmaṇā keśinā hārī :AHLHHLHHLHLA: 211
1.132.03a tāt tú práyaḥ pratnāthā te śuśukvanāṃ :AHLHHLHHLHLA: 211
1.140.11b priyād u cin máṃmanaḥ préyo astu te :AHLHHLHHLHLA: 211
2.037.03a médyantu te vāhnayo yēbhir ṭyase :AHLHHLHHLHLA: 211
8.003.18a imē hī te kārāvo vāvasūr dhiyā :AHLHHLHHLHLA: 211
1.131.05a ād īt te asyā virīyasya carkiran :AHLHHLHHLHLA: 224
8.013.11c ā yāhi yajñām āśūbhīḥ sām īd dhī te :AHLHHLHHLHLA: 224
8.013.26c r̥tāyarmi te dhīyam manoyūjam :AHLHHLHHLHLA: 224
9.085.01c má te rāsasya matsata dvayāvīno :AHLHHLHHLHLA: 224
10.016.03c apō vā gacha yādi tátra te hitām :AHHHLLLHLHLA: 468
10.018.13a út te stabhnāmi prthivīṃ tuvāt pári :AHHHLLLHLHLA: 468
10.081.05a yā te dhāmāni paramāṇī yāvamā :AHHHLLLHLHLA: 468
10.084.05c priyāṃ te nāma sahure gṛṇīmasya :AHHHLLLHLHLA: 468
1.102.03b jaītraṇ yāṃ te anumādāma samgāme :AHHHLLLHLHLA: 468
1.114.02b kṣayādvīrāya nāmasā vidhema te :AHHHLLLHLHLA: 468
2.016.06a vṛṣā te vṝjra utā te vṛṣā raṭho :AHHHLLLHLHLA: 468
2.016.07a prā te nāvaṃ nā sāmane vacasyūvam :AHHHLLLHLHLA: 468
2.023.02a devās cit te asuriya praccetaso :AHHHLLLHLHLA: 468
2.032.05a yās te rāke sumatāyaḥ supēsaso :AHHHLLLHLHLA: 468
5.011.03d dhūmās te ketúr abhavad diví śritāḥ: AHHHLLLHLHLHA: 468
5.044.02d paró māyābhir ītá āśa nāma te: AHHHLLLHLHLHA: 468
6.015.09c yát te dhítīm sumatīm āvṛṇimāhe: AHHHLLLHLHLHA: 468
6.061.01d tā te dāṭrāṇi tavīśā sarasvati: AHHHLLLHLHLHA: 468
7.046.03c sahásraṃ te suapivāta bheṣajā: AHHHLLLHLHLHA: 468
8.001.03c asmākam brāhma idām indra bhūtu te: AHHHLLLHLHLHA: 468
8.021.16a má te godatra nīr arāma rádhasa: AHHHLLLHLHLHA: 468
9.082.04b pājṛāyā garbha śṛṇuhí brāvīmi te: AHHHLLLHLHLHA: 468
9.105.04c śucīṃ te vāṛṇam ádhi gōṣu dīdharam: AHHHLLLHLHLHA: 468
10.018.13c etāṃ sthúṇām pitáro dhārayantu te: AHHHLLLHLHLHA: 523
10.050.03c ké te vājāya asuryāya hinvire: AHHHLLLHLHLHA: 523
10.083.01a yās te manyo āvidhad vajra sāyaka: AHHHLLLHLHLHA: 523
10.096.01b prá te vanve vanuṣo haryatām mádam: AHHHLLLHLHLHA: 523
1.051.08d víśvét tā te sadhamādeṣu cākana: AHHHLLLHLHLHA: 523
1.051.13d víśvét tā te sāvaneṣu pravāciyā: AHHHLLLHLHLHA: 523
1.052.07c tvāṣṭā cit te yūjiyaṃ vāvṛdhé sāvas: AHHHLLLHLHLHA: 523
1.094.04a bhārāmedhmāṃ kṛṇāvāmā havimśi te: AHHHLLLHLHLHA: 523
1.094.11b drapsā yāt te yavasādo ví ásthiran: AHHHLLLHLHLHA: 523
1.140.11c yāt te śukrāṃ tanuvo rōcate śucī: AHHHLLLHLHLHA: 523
5.081.05d śyāvāśvas te savita stómam ānaśe: AHHHLLLHLHLHA: 523
6.047.29b purutrá te manutāṃ viṣṭhitaṃ jāgat: AHHHLLLHLHLHA: 523
7.032.14c śraddhā īt te maghavan pāriye divī: AHHHLLLHLHLHA: 523
7.096.02a ubhé yāt te mahnā śubhre ándhasi: AHHHLLLHLHLHA: 523
8.019.16c vayāṃ tāt te sāvasā gātuvīttamā: AHHHLLLHLHLHA: 523
8.033.15c asmākaṃ te sāvanā santu sânmatā: AHHHLLLHLHLHA: 523
8.077.11a tuvikṣāṃ te sūkṛtaṁ sūmāyaṃ dhānuḥ: AHHHLLLHLHLHA: 523
8.100.06a víśvét tā te sāvaneṣu pravāciyā: AHHHLLLHLHLHA: 523
9.079.04b  पृथिव्याः ते रुरुहुष सानवि क्षिपाः: AHHHLLHHLHLA: 523
9.083.01a  पवित्राः ते वितातम ब्राह्मणस पाते: AHHHLLHHLHLA: 523
9.086.47a  प्राः ते धाराः ाती ान्वाः मेश्याः: AHHHLLHHLHLA: 523
10.017.12d  ताः ते जुहोमि मानाः वाशात्क्रतम: AHLHLLLHLHLA: 624
10.044.09a  इमां बिभार्मि सुक्ष्टम ते अंकुशाः: AHLHLLLHLHLA: 624
10.091.04c  ा ते चिकत्रा उसासां इवेतायो: AHLHLLLHLHLA: 624
10.113.03c  विशे ते ात्रां शाम तहा त्माः: AHLHLLLHLHLA: 624
1.055.08d  तानुशु ते त्रातवा इंद्र बहुरायाः: AHHHLLLHLHLA: 624
2.001.15c  प्रक्षो याः ात्र महिनाः वि ते बहुवदः: AHHHLLLHLHLA: 624
2.016.08c  सक्ष्र त सु ते सुमातिभीः सताक्रतो: AHLHLLLHLHLA: 624
5.044.08b  शिस्याः सरते सरतु याः क्रयाः सुमात: AHHHLLLHLHLA: 624
8.021.07b  ाः अभुमाः नाही न्ते अद्रिवाः: AHLHLLLHLHLA: 624
9.086.37c  ताः ते क्षारातु माठुहमद ग्हर्ताम ग्यायः: AHHHLLLHLHLA: 624
10.043.05c  नात्त ते ायो ान विर्याणाः सकाः: AHHHLLLHLHLA: 624
10.050.07a  ये ते विप्रा ब्राह्मक्ष्टाः सूतेस साच: AHHHLLLHLHLA: 624
10.113.08a  विशे देवाः ाद्धा विश्नियाः से: AHHHLLLHLHLA: 624
1.156.01c  ाहः ते विष्णो विदुः सिद ार्धिया: AHHHLLLHLHLA: 624
1.156.03d  ाहाः ते विष्णो सुमातिभम भाजामहे: AHHHLLLHLHLA: 624
5.056.02c  ये ते नेदिष्ठाम हावानाः अगामन: AHHHLLLHLHLA: 624
8.001.09c  आवाः ये ते विष्णो रागहुद्रुवाः: AHHHLLLHLHLA: 624
8.004.07c  ात्त ते विष्णो अभिकायाः क्र्तः: AHHHLLLHLHLA: 624
8.012.28c  ा ते विस्वा बहुवांनाः येरिये: AHHHLLLHLHLA: 624
8.012.29c  ा ते विस्वा बहुवांनाः येरिये: AHHHLLLHLHLA: 624
8.012.30c  ा ते विस्वा बहुवांनाः येरिये: AHHHLLLHLHLA: 624
8.061.18c  उभाः ते बाहुः विष्णाः सताक्रतो: AHHHLLLHLHLA: 624
8.077.11c  उभाः ते बाहुः रान्या सुसाम्क्र्ता: AHHHLLLHLHLA: 624
9.079.05d  ाः ते सुष्मो भवातु प्रियो माधाः: AHHHLLLHLHLA: 624
10.023.07c vidmā hī te prāmatiṃ deva jāmivād :AHLHLLHHLHLA: 662
10.038.02c siyāma te jāyataḥ śakra medīno :AHLHLLHHLHLA: 662
10.044.09c asmīn sū te sāvane astu okīyaṃ :AHLHLLHHLHLA: 662
10.075.02a prā te ṛadad vāruṇo yātave pathāḥ :AHLHLLHHLHLA: 662
10.085.27a ihā priyām prajāyā te sām ṣdhyatāṃ :AHLHLLHHLHLA: 662
10.096.01a prā te mahē vidāthe śaṃsiṣaṃ hārī :AHLHLLHHLHLA: 662
1.052.11c átrāha te maghavan vīśrutaṃ saho :AHLHLLHHLHLA: 662
1.057.05d iyāṃ ca te pṛthivī nema ōjase :AHLHLLHHLHLA: 662
1.102.07a út te śatān maghavann úc ca bhūyasa :AHLHLLHHLHLA: 662
1.114.03a aśyāma te sumatiṃ devayajyāyā :AHLHLLHHLHLA: 662
1.114.09c bhadrā hī te sumatīr mṛjayattamā + :AHLHLLHHLHLA: 662
2.023.04d bṛhaspatemāhitattemahitvanām :AHLHLLHHLHLA: 662
2.036.05a eṣā syā te tanúvo ṇṛṇavārdhanaḥ :AHLHLLHHLHLA: 662
7.081.05c yāt te divo duhitar martabhōjanaṃ :AHLHLLHHLHLA: 662
8.001.14c sakṛt sū te mahatā śūra rádhasā :AHLHLLHHLHLA: 662
8.003.02a bhūyāma te sumatau vājīno vayāṃ :AHLHLLHHLHLA: 662
8.046.25c vayām hī te caṅkṛmatā bhūri dāvāne :AHLHLLHHLHLA: 662
8.053.08a ahāṃ hī te harivo brāhma vājayūr :AHLHLLHHLHLA: 662
9.078.02c pūrvīr hī te srutāyaḥ sānti yātave :AHLHLLHHLHLA: 662
9.086.13d śucir dhiyā pavate sōma indra te :AHLHLLHHLHLA: 662
10.037.03a nā te ádevaḥ pradīvo nī vāsate :AHLHLLHHLHLA: 1190
10.043.02d asmīn sū sōme avapānam astu te :AHLHLLHHLHLA: 1190
10.091.07c ā te yatante rathīyo yāthā pṛthak :AHLHLLHHLHLA: 1190
10.091.09c yād devayānto dādhati prāyāṃsī te :AHLHLLHHLHLA: 1190
10.138.06a etā tiyā te śrūṭiyāni kēvalā :AHLHLLHHLHLA: 1190
10.142.02a pravāt te agne jānimā pitūyatāḥ :AHLHLLHHLHLA: 1190
10.147.01a śrāt te dadhāmi prathamāya manyāve :AHLHLLHHLHLA: 1190
C.4 The position of áchā with regard to its object

C.4.1 áchā X

8 syllable lines

1.006.06b áchā vidádvasuṁ gíraḥ :AHLHLHLA: 3316
8.005.33c áchā suadhvaráṁ jánam :AHLHLHLA: 3316
9.064.16b áchá samudrám āśávaḥ :AHLHLHLA: 3316
9.066.12a áchá samudrám índavo :AHLHLHLA: 3316
8.023.10a áchá no áṅgirastamaṇ :AHHLHLHLA: 4930
11 syllable lines

6.030.04d अवस्र्जो अपो अचाः समुद्रामः :AHLLLHHLHA: 223
7.036.09b अचाः विषुः निष्कतापं अवभिः :AHHHLHLHLHA: 470
3.022.03b अचाः देवाः उचिे द्विषीयः ये :AHHHLHHLHA: 483
3.057.03c अचाः पुत्राः धनेई वावासाः :AHHHLHHLHA: 483
4.001.10b अचाः रात्राः देवाभक्तः याद असा :AHHHLHHLHA: 483
7.057.07b अचाः सुरिः सर्वात्ता जिगाः :AHHHLHHLHA: 483
3.039.01b अचाः पातिः स्तोतराः जिगाः :AHLHHLHHLHA: 683
7.067.01d अचाः सूनुरं नां विताः विवाक्षः :AHHHLLLHLHA: 1231
1.163.13b आर्वाः अचाः पिताः माताः का :AHHHLHHLHA: 1388
4.044.05a ा no यात्राः दिवा अचाः प्रथिव्यः :AHHHLHHLHA: 1388
9.087.01d अचाः बर्ही रासानाः भिन्न नयांति :AHHHLHHLHA: 1388
3.033.03a अचाः सिन्धुम मात्रताः मयाः याः :AHHHLHHLHA: 1472
3.061.05a अचाः वो देवम उषाः विवाहतिः :AHHHLHHLHA: 1472
3.031.06d अचाः रावम प्रथाम जानतिः गाः :ALHHLHHLHA: 1670
4.016.09a अचाः कविः नर्माण गा अभिः ताः :ALHHLHHLHA: 1670
7.003.03c अचाः दियाः आरुः द्वुमाः एति :ALHHLHHLHA: 1670
3.033.02b अचाः समुद्रांग रथिये यथाः :ALHHLHHLHA: 2313
12 syllable lines

1.040.03c  áchā vīrāṃ nāriyam paṅktirādhasam :AHHHLLHHLHLA: 523
8.060.02a  áchā hī tvā sahasaḥ sūno aṅgiraḥ :AHHHLLHHLHLA: 523
1.130.05b  áchā samudrām asṛjo rāthāṃ iva :AHLHLLLHLHLA: 624
2.036.06c  áchā rājānā nāma eti āvītam :AHHHLLHHLHLA: 650
8.071.10c  áchā yajñāso nāmasā purūvāsum :AHHHLLHHLHLA: 650
9.081.02a  áchā hī sómaḥ kalāśāṃ ásiṣyadad :AHLHLLLHLHLA: 1190

C.4.2  X áchā

8 syllable lines

8.002.28d  nāyām áchā sadhamādam :ALHLLLHA: 21
1.002.02b  tuvām áchā jaritāraḥ :AHHHLLHA: 55
8.016.10a  pranetāraṃ vāsyo áchā :AHHHLLHA: 85
1.105.14b  devāṁ áchā vidūṣṭaraḥ :AHHHLHLA: 4930
1.132.05g  devāṁ áchā nā dhītāyaḥ :AHHHLHLA: 4930
1.139.01g  devāṁ áchā nā dhītāyaḥ :AHHHLHLA: 4930
5.052.15b  devāṁ áchā nā vakṣānā :AHHHLHLA: 4930
8.103.02b  devāṁ áchā nā majmānā :AHHHLHLA: 4930
9.001.05a  tuvām áchā carāmasi :AHHHLHLA: 4930
ácikradad vṛṣṇam pātnī āchā :AHLHLLHHHA: 12
áta ā yāhi adhvarāṃ no āchā :ALHHLHLHLHA: 84
śāmi āchā didiye pūrviyāṇi :ALHHHLHHLHA: 161
yāhī vāyūr ná niyūto no āchā :ALHHLLLLHLHA: 287
agnīm āchā devayātām mānāṃsi :ALHHLLLHLHA: 360
tā adhvaryo apō āchā pārehi :AHHLLLHHLHA: 379
devaīr yāhi sarātham rádho āchā :AHHLLLHLHLHA: 379
prā yābhīr yāsi dāśuvāṃsam āchā :AHHHLHLHLHA: 470
eśa stōmā mārutaṃ śārdho āchā :AHHHLHLHLHA: 483
āgne divō ārṇam āchā jīgāsi :AHLHHLHLHLHA: 683
raghūḥ śyenāḥ patayad ándho āchā :AHHLLLHLHLHA: 1231
devāṁ āchā rāghupātvā jīgāti :AHHLLLHLHLHA: 1388
apō āchā mānaso ná práyukti :AHHLLLHLHLHA: 1388
devāṁ āchā pathīyā kā sām eti :AHHHLHLHLHA: 1388
devāṁ āchā brahmakṛtā ganaṇā :AHHHHLLLHLHA: 1472
prā nāvyasā sāhasaḥ sūnūm āchā :AHLHLLHLHLHA: 1670
prá yād váyo ná svāsarāṇi āchā :AHLHLLLHLHLHA: 2313
srāvaḥ ca āchā paśumāc ca yūthām :AHLHLLLHLHLHA: 2313
apāś ca āchā sūmakāya vocam :AHLHLLLHLHLHA: 2313
sā nīvīyābhīr jaritāram āchā :AHLHLLLHLHLHA: 2313
āṅgūṣām āchā tavāsam mādāya :AHLHLLLHLHLHA: 2313
C.5  The position of the copula in predicate nominative constructions

C.5.1  ahám X asmi

8 syllable lines

1.105.07a  ahám só asmi yáḥ purā :AHHHLHLA: 4930

11 syllable lines

4.026.01b  ahám kakṣívāṁ ḍīr asmi vípraḥ :AHHHLHLHHLHA: 1472

215
C.5.2  ahám asmi X

8 syllable lines

10.145.05a  ahám asmi sáhamānā :ALHLLLHA: 7
10.119.12a  ahám asmi mahāmahó :ALHLLLHA: 691
10.166.02a  ahám asmi sapatnahá :ALHLLLHA: 691

11 syllable lines

5.044.14d  távāhám asmi sakhiyé níokāḥ :AHLHLLLHLHA: 1374
5.044.15d  távāhám asmi sakhiyé níokāḥ :AHLHLLLHLHA: 1374
10.027.01c  ánāśīrdām ahám asmi prahantá :AHHHLLLHHLHA: 1388

C.5.3  t(u)vám X asi

8 syllable lines

8.013.26a  índra tvám avitéd asi :AHLLLHLHA: 621
3.053.18d  tuvám hí baladá ási :AHLLLLHLHA: 621
8.090.05a  tuvám indra yaśā asi :ALHLLLHLHA: 691
5.013.06b  devāms tvám paribhūr asi :AHHLLLHLHA: 1362
8.011.01a  tvám agne vratapá asi :AHHLHLHLHA: 1362
10.153.05a  tuvám indrābhībhūr asi :ALHHLHLHA: 1979
8.060.05a  tuvám ít sapráthā asi :ALHHLHLHA: 1979
8.098.02a  tuvám indrābhībhūr asi :ALHHLHLHA: 1979

216
10.153.02c tuvāṃ vṛṣan vṛṣēd asi :AHLHLHLA: 3316
8.023.30a ágne tuvāṃ yaśā asi :AHLHLHLA: 3316
1.015.03c tuvāṃ hí ratnadhā āsi :AHLHLHLA: 3316
4.046.01c tuvāṃ hí pūrvapā āsi :AHLHLHLA: 3316
5.028.05c tuvāṃ hí havyāvāl āsi :AHLHLHLA: 3316
7.016.06b tuvāṃ hí ratnadhā āsi :AHLHLHLA: 3316
8.023.29a tuvāṃ hí supratūr āsi :AHLHLHLA: 3316
5.013.04a tvām agne sapráthā asi :AHHHLHLA: 4930

11 syllable lines

10.110.01d tuvāṃ dūtāḥ kavīr asi prācetāḥ :AHHHLLLHLHA: 1231

12 syllable lines

6.048.09c asyā rāyās tuvāṃ agne rathīr asi :ALHHLLHHLHA: 161
9.086.28d tuvāṃ indo prathamō dhāmadhā asi :ALHHLLHHLHA: 161
2.001.12c tuvāṃ vājaḥ pratāraṇo bṛhān asi :AHHHLLLHLHLHA: 468
2.001.07b tuvāṃ devāḥ savitā ratnadhā āsi :AHHHLLLHLHLHLA: 523
8.090.02a tuvāṃ dātā prathamō rádhasāṃ asi :AHHHLLLHLHLHA: 523
2.001.10d tuvāṃ viśīkṣur asi yajñām ātāniḥ :AHHLLLLHLHLHA: 624
2.001.03a tvām agna índro vṛṣabhāḥ satām asi :AHLHLLLHLHLHA: 1190
9.086.29a tuvāṃ samudrō asi viśvavīt kave :AHLHLLLHLHLHLA: 1190
9.086.38a tuvāṃ nṛcākṣā asi soma viśvātaḥ :AHLHLLLHLHLHLA: 1190
9.086.39c tuvāṃ suvīro asi soma viśvavīt :AHLHLLLHLHLHLA: 1190

217
C.5.4  t(u)váṃ asi X

8 syllable lines

8.071.02c  tuvám íd asi kṣápāvān :ALLHLHLA: 3
8.011.02a  tuvám asi praśásiyo :ALLHLLLA: 24
10.097.18c  tásāṃ tváṃ asi uttamā :AHLLLHLA: 621
10.145.05b  átha tváṃ asi sāsahīḥ :AHLLLHLA: 621
8.039.03d  tuváṃ hí ási pūrviyāḥ :AHLLHLHA: 621
2.007.05a  tuváṃ no asi bhārata :AHHLLHLA: 1362
1.091.05c  tuvám bhadró asi krátuḥ :AHHHLHLA: 4930

11 syllable lines

6.044.12c  tuvám asi pradívah kārúdhāyā :ALLHLLHHLA: 133
10.002.01d  tuváṃ hótṛṇāmasiāyajiṣṭhaḥ :AHHHHLLHLHA: 1472
10.110.03c  tuváṃ devānām asi yahva hōtā :AHHHHLLHLHA: 1472

12 syllable lines

2.001.05d  tuváṃ narāṃ śárdho asi purūvásuḥ :AHLHLLLHLHLA: 13
7.032.17a  tuváṃ víśvasyadhanadāasiśrutō :AHHHLLLLHLHA: 468
8.019.31c  tuvám mahinám uṣásām asi priyāḥ :AHLHLLLHLHLA: 1190