ORIENTALIA SUECANA 2025. Vol. 74: 56–72. UPPSALA UNIVERSITY

Research article

Gunilla Gren-Eklund*

Closed forms of Indian poetry: An introduction to poetic metre

https://doi.org/10.33063/os.v74.664

Abstract: This article is based on a lecture on metrics in literature given at an internal workshop at the Department of Linguistics and Philology at Uppsala University in 2004, with contributions on the topic in classical and oriental languages. It can be read as an introduction to Indian poetics with its focus on presenting metric patterns in Indian poetry with regard to the linguistic issue of prosody as the primary basis for potential comparative studies.

Keywords: syllabo-tonic, quantitative, moræ, mātrā, metre, śloka, pāda, pitch, tone

sā vidyā naus titīrṣuṇāṁ gabhīraṁ kāvyasāgaram
Agnipurāṇa 337, 23

Ideas about literary metres and their structure raise both literary and linguistic questions, and a comparative study of the subject can help us to understand cultural differences. Even within a particular culture, there are many problems with understanding metre both in general and in detail, and the problems seem to multiply when considering the subject in relation to distant times and cultures.[1]

An examination of the question in a coherent culture such as that of India may help us illustrate the Western ideas of metre in ancient times by way of comparison, and identify certain fundamental, even generic, differences. Some basic metrical features in classical languages are mentioned below to facilitate the understanding of the Indian concept of metrical forms in poetry, which takes its most sophisticated form in Sanskrit.

In India, an indigenous, reflective tradition is evident in texts in which poetic metre is demonstrated, discussed, and regulated. From the very beginning, the subject of *chandas* had a place in both Indian grammar and poetics, from which it gradually developed into a science in its own right.[2] Thus, Indian and Sanskrit scholars have treated the subject of metrics extensively in specific texts (*chandaḥśāstra*) and have also touched upon it in general texts on phonology and in scholarly works on poetics more broadly.[3] In both cases, the subject is usually treated with a prescriptive aim, the metre being considered an aesthetic device of importance that must not be violated.

1 The present text is based on a lecture on metrics in literature given at an internal workshop at the Department of Linguistics and Philology at Uppsala University in 2004, with contributions on classical and oriental languages. The article will focus on presenting metrical patterns in Indian poetry primarily with regard to the linguistic issue of prosody, thus providing a tool for comparative studies of metrics.

2 The etymology of *chandas* has been extensively debated. Since it is found in the Ṛgveda, where it is referred to as a distinct kind of verse, it is probably derived from √*chand*, meaning 'to please' (Weber, 1963, pp. 3–8).

3 Nāṭyaśāstra, a text attributed to the legendary author Bharata and probably committed to writing a few centuries BCE , was described by all later *śāstrins* of the genre as the primordial text on Indian performing arts, including the use of both rhetoric and poetics. Nāṭyaśāstra is also the gateway to all later theories of *kāvya* and *alaṁkāra*. In this tradition, the topic of metre has been linked to theories of music and rhythm, and the general ideas in these texts are closely related to the handbooks of Chandaḥśāstra.

* Department of Linguistics and Philology, Uppsala University, E-mail: gunillagren@gmail.com

The subject eventually came to be seen as a scholarly subject in its own right, and many works deal exclusively with what has been called a "science of metrics" (*chandaḥśāstra*), one of six texts on the science of language (Vedāṅgas, 'limbs of the Vedas') for the study of the Vedas. The other five were phonetics, grammar, etymology, ritual, and astrology. In Western Indology, however, the question of the metrics of classical Sanskrit has not been extensively discussed, although Sanskrit grammar has been an essential topic for Indology, and Sanskrit poetics has been of particular interest. Sheldon Pollock, one of the few scholars to have written about the metrics of classical Sanskrit, describes "versification" as "indeed the most elegant of linguistic facts."[4]

In a critical survey of Sanskrit metre, certain general aspects, such as those relating to technical matters and historical changes, must be presented at the outset to provide background. Moreover, some fundamental methodological problems of comparison must be considered in order to justify a general picture of the issue. Certain central concepts correspond to notions that we have inherited from classical languages. On a closer look, their use in practice may exhibit more than just a superficial similarity, even though the terminology is constructed according to different concepts. If convincingly demonstrated, the similarities may be described in terms of a structural affinity, manifested as similar phonological types in Sanskrit and the ancient European languages.

Historically, there have certainly been changes in the use of metrical devices in both cases over time, which leads the questions of how, why, and what kinds of changes occur on both sides.[5]

When languages of similar textual cultures are compared, one thing they have in common is that their prosody changes over time between *syllabo-tonic systems* (in which tone/stress distinguishes syllables) dominated by stress, and *quantitative systems*, that build on quantified syllables, in which the length (of the syllable, primarily the vowel) is the distinguishing element. On closer scrutiny, both of these types take varying forms, and over time, any change between the two general systems may be reversed.

It is generally held that both of classical languages Greek and Latin passed from a more ancient type of syllabic verses to their classical quantitative system, in which measurement of the syllable is primary. The counting of *moræ* in syllables gives rules for specific, variegated metrical units. However, there is clear evidence that changes in the other direction are possible through the medieval systems or stanzas, as in medieval poetry dependent on Latin culture.

On both sides, of course, local, indigenous ideas and innovations develop over time.[6] In the case of India, it is therefore necessary to keep in mind the early genesis of the treatment of metrics in classical Sanskrit. To some extent, the earlier use of metre in Vedic texts has a rather complex history. It is significant as an earlier stage in a chain of tradition on which later stages, not the least Sanskrit and its poetic world, the *kāvya,* depend.[7] In the Indian case, we do not have precise dates on which to fix certain events. All we know is that the Vedic texts predate Homer, and this cannot tell the whole story of the changes or establish a pattern of development. In both worlds, India and Mediterranean classical antiquity, the ancient histories of the languages are closely connected to their common Indo-European origin, and certain features may reflect the use of kindred languages. Despite an acknowl-

4 Pollock (1977, p. 5). The earliest leading treatises of the *śāstra* texts on Sanskrit metrics are those by Weber (1863) and Jacobi (1884, 1970); the most informative recent surveys are by Hahn (1971) and Pollock (1977).

5 Gasparov (1996) presents a comprehensive survey of the historical performance of poetry in ancient times and how various patterns have developed in European languages.

6 In the case of developments in the Indian languages, there is a spectrum of different outcomes in the Indo-Aryan languages as to phonological features, phonotactic patterns, and metrical performance (Masica,1991, pp. 118–122). The same broad spectrum also applies to the prosody of poetry in European languages.

7 For the traditions of *kāvya* and its poetic *śāstra* and *śāstrins*, for which metre was an important issue, see Gren-Eklund 2006.

edged linguistic kinship, we have no clear and conclusive data on how the bards in ancient "Indo-European" times recited their poems.[8]

This historical presentation will focus on classical Sanskrit and its Vedic background. It will present current variants and systematise metrical components and concepts according to the well-developed and informed Indian theory of metrics attributed to Piṅgala. A special resource is the comprehensive survey of the topic in the encyclopaedic work Agnipurāṇa.[9] Here, only a few hints will be given on a possible comparison with the established Greek-Latin system of metrics, mainly illustrated by the list of metres as *trikas* in an appended table.[10]

First, however, a *technical* introduction to certain metrical concepts is needed to clarify the customary poetic modes of prosody.

Metrical principles and basic features

Since the types of metres used in a particular linguistic culture are related to the characteristics of the language in question, some fundamental and general problems must be sorted out at the phonological level. The theories about the importance of the syllable for any metrical system imply a need to observe the phonotactics of the language in question. Above all, the prosodic features of the language must be considered and, in connection with the topic of metres in poetry, it is essential to discuss certain sophisticated elements related to sound and performance, such as rhythm, singing, music, and modes of performance. Such performative features are prosodic and are naturally linked to phonological aspects of language. Certain prosodic elements, such as the use of tone vs. accent, are particularly relevant to consider when forming a picture of the metrics. It must be remembered that, since poetry is essentially a performing art, and was even more so in ancient times, one aspect of its practice would concern how and to what extent the performer adapts to the accent and tone of ordinary speech when reciting.[11] Or, to put it the other way around, and expressed as a question about the custom of performing poetry: To what extent can the performance be defined as singing?

However, evaluating all the prosodic features of a language is a complex task, especially for ancient languages recorded solely in texts. Texts from different periods do not provide insights into changes in a language's prosodic features, although such changes must have occurred difficult to understand precisely. The types of accents used in different stages of an ancient culture, and the reasons for their changes, have yet to be definitively settled and remain a matter of scholarly debate.[12]

8 Meillet (1923) suggested a kind of syllabic versification, which is attested in Greek and Sanskrit. Nagy (1975), in his mainly philological study of metrical units in Greek and Vedic texts, refers back to a common Indo-European ground. Kuryłowicz (1968, Einleitung) points to the morphological effects of changes over time in the prosodic features of intonation and different accents in the early layers of the Indo-European language, especially its "ablaut". Kuryłowicz (1975) conducts an exhaustive survey of what happened with the metrics in various Indo-European language groups, holding to the fundamental distinction between "akzentuierende" and "quantitierende Metrik", with Greek and Old Indian as representatives of the latter. Gasparov (1996, pp. 7–9), claims to resolve the ambiguous picture by taking some standard features of PIE verse for granted, such as the practice of counting syllables, contrasting long and short vowels, and the like.

9 Agnipurāṇa, Chap. 328–335. The encyclopaedic text is mediaeval, not compiled before the 7th century, though parts may very well have been handed down from earlier times. Piṅgala, *Chandaḥśāstra* is dated by its first editor, A. Weber, to about the 3rd–2nd century BCE.

10 The most persuasive comparison that can be made about the "classical" languages of both regions seems to be in the area of phonotactics, which is the basis of the reasonably similar structures of the syllable, an essential component of the metrical system in both traditions.

11 Bruno Snell (1955) distinguishes between "Sprechverse" and "Singverse" in Greek. The former refers to specific metrical patterns such as hexameters with successive lines, while the latter are arranged as stanzas.

12 Johanson (1994) discusses the complicated nature of the metrical system of any language, language group, or cultural world, as regards its function, components, tradition, and alterations over time (see also Kuryłowicz 1968, Nagy 1974, Lubotsky 1975).

To begin with, it is necessary to sort out a number of phonological features relevant to any metrical unit – all of them relational – before defining the different occurrences of metres: **stress** (occurring as an accent), which would provide an emphasis in the word as well as in a phrase; **pitch**, which would provide an alternative to stress (or a co-occurring feature), which has to do with the tension of the vocal cords; and the **intensity** of the sound or tone, which perhaps must be considered a collateral relation to these phenomena, and which, in the case of speech, might be interpreted as the **duration** of sounds.[13]

In any case, it must be remembered that features such as stress and pitch mainly pertain to the vowels. At the same time, they are important for the poetic forms, at least for their recitation. The role of consonants, despite their influence on the length of syllables, is mainly related to cases such as rhyme and alliteration.

All of these features combined play a significant prosodic role in the history of languages and poetry, especially classical poetry. Another crucial unit for the different types of metre as usually defined is the length of sounds, which pertains not only to vowels but also to syllables. Short and long vowels are clearly distinct as phonemes, but when it comes to the tone of any word, a long vowel in a syllable is just naturally long.

In a metrical context, the Latin concept of *mora* (meaning 'phase of delay') is manifested as a short unit, two of which are required to make a long unit. At the same time, any short vowel can also function as a positionally long vowel when followed by clustered consonants.

In Latin, Greek, and Indian poetry, the syllable is not the only important factor in defining metre. The length of a sound is a crucial concept for metrics. When measuring the size of metrical units (metrical "feet"), even the consonants in the syllable are relevant.[14] The counting of *moræ* is crucial for establishing a rhythmic pattern. This concept is fundamental to ancient metrics and its theory in classical times. Such post-classical changes that replaced the classical accent with syllabic stress in words will not be discussed here.

The Indian use of terminology

A concept similar to Latin *mora* appears to be expressed in Sanskrit by the term *mātrā*, which is related to "measuring" and has a similar origin to the Greek/Latin word *metron*. It is important to note, however, that in India *mātrā* did not come to mean metrical forms, as it did in the literary theories of the ancient classical languages. Instead, it was confined to measuring the sounds, and was not used to establish metrical feet. As for its function in metrics, however, *mātrā* is more or less in agreement with the concept of *mora,* which is essential for the quality of a syllable.

There is also a distinction in Sanskrit, as in the classical languages, between short and long in the phonemic relevance of vowels. The basis of Sanskrit metrical theory then becomes the statement that a short vowel and a simple stop is one *mātrā,* a long vowel is two *mātrā*, and a vowel lengthened by position represents three *mātrā.* Certain extra-lengthened vowels (*plūti*) also exist, probably in the

13 Kuryłowicz (1968, p. 9) introduces **pitch** as responsible for the traditionally termed "musical" accent, and **intensity** for "dynamic" accent, in both cases connected to the syllabic unit as stressed. His main concern in treating prosody is to show how it is phonologically responsible for morphological varieties such as "ablaut" and similar phenomena.

14 Diomedes Grammaticus introduces the basic concepts of poetry in his Ars Grammatica, starting with "rhythm": *rythmus est pedum temporumque iunctura […] metrum est quod certis pedum quantitatibus qualitatibusque rythmo discriminatur*; 'rhythm is joining the (metric) feet with time; metre is what rhythm distinguishes through certain quantities and qualities'.

borderland of singing.[15] The essential definition of the "syllable" classifies it as light (*laghu*) and heavy (*guru*), depending to varying degrees on its number of *mātrās*.

What about the versified texts? In Sanskrit metrical theory and practice, when counting the metrical feet, another familiar word, *pāda*, is used to denote the building blocks of the stanza. However, the idea of the metrical "foot" *(pous/pes)* in Greek and Roman metrics is not an equivalent of the key concept of *pāda* in Sanskrit metrics, despite the latter's similar origin in a word meaning foot (*pad*). Here, we are approaching an essential difference in the science of metrics, Western and Indian. A *pāda* is always one-fourth of a verse or stanza, and as such contains an optional number of syllables fixed for the individual metre, usually 8, 11, or 12, and rarely any other number.

The metrical "foot" of the Indian metrical theory is not defined by establishing a particular sequence of long and short syllables; instead, the idea is that a *pāda* should be a quarter of something. The word *pāda* has a lengthened (*vṛddhi*) *-ā-* and is based on the simple word *pada*, which means 'step' and seems to be related to the concept of living creatures as "quadrupeds". The same idea of quadruplets occurs in the ancient Indian texts and other areas of religious and cultural thought systems. It can be described as a sort of hermetic concept.

Although this is the conventional pattern, however, it is not the case that the different kinds of stanzas must always contain four *pādas*. Sometimes they may contain 3, 5, or 6 *pādas*, but in the classical Sanskrit dogmas of metrics such deviations are considered atypical. The importance of the notion of *pāda* is also shown by the fact that the derived word *padya* is the term used in Sanskrit poetics for "versified poetry" (and also used to denote an individual "stanza"), in contrast to the notion of prose, *gadya*, i.e. what is "spoken, articulated as told". Agnipurāṇa 337 gives the poets guidance in a passage entitled *kāvyalakṣaṇam* ("description of poetry"). He says the kinds of *kāvya* are handed down (*smṛtam*) in threefold form, as prose, poetry and mixed.[16]

What is the practical use of a *pāda* if it is not quite the same as a metrical foot? In short, an individual *pāda* contains a certain number of syllables, in themselves comprising different successive patterns of long and short. It must be observed that the last syllable in such a sequence is always free as to length, which is one of the changes in the use of metrics from the ancient Vedic texts up to classical Sanskrit poetry. In the Ṛgveda, we are mainly confined to *pādas* that contain 8, 11 or 12 syllables. But in the classical texts on metrics, a *pāda* can contain anywhere from four to 26 syllables.

The most ancient texts on Vedic phonetics discussed the question of a system of versification. However, practical developments in the performance of metrical rhythm have made it necessary to systematise the topic for Sanskrit far more than the earlier phonologists did. The recognised authority on Sanskrit metrics is a certain Piṅgala, who might be dated to the second or third century BCE which would mean that his treatise on metrics would have been recorded at around the same time that grammar and other sciences were developing in India and finding their expression in *śāstra* texts. Many treatises were produced on the topic during the first millennium of our era. It must be noted that the metres of Vedic times were also included, and scholars treated them as current and alternative forms, not as an ancient historical subject. The Vedic texts were still a living tradition.

This means that the handbooks written on the topic by both Indian and Western scholars rarely include a systematic presentation of Indian metrics or a detailed discussion of its history and gradual changes.[17] However, it is necessary to identify the steps in the transition from Vedic metrics to classical Sanskrit poetry.

15 Such use of overlong syllables has been pointed out as specific to classical Persian poetic prosody. In any case, the common ancient background of Persian and Indo-Aryan languages should be kept in mind.

16 For more on this, see the section on scholarly Sanskrit texts on metre below.

17 For general overview of metrics in classical India, see traditional summaries such as Macdonell (1917), Appendix II "Vedic metre"; Apte, Sanskrit–English Dictionary (1922), Appendix I: "Sanskrit prosody". See also the Wikipedia article on "Sanskrit prosody". Warder (1967) provides a detailed account of how metre developed in the Middle Indian languages while the inherited terminology and theory of metrics was preserved.

Vedic metrical patterns

As is well known, a long-standing tradition of Vedic recitation promotes the use of pitch in pronouncing words and verses; the system contains three "tones" (*udātta, anudātta*, and *svarita*). [18] In this performative prosodic system, tone dominates the auditory impression and is closely linked to the metrical system.[19] But as interesting as such a component of the phonology may be (perhaps as a common feature of old Indo-European), it is not discussed in the *chandaḥśāstra.*

However, the basis of Sanskrit *chandas* can be traced back to the Ṛgveda.[20] This shows how the metrical components were used in the ancient Vedic texts and how they were crucial to the development of *chandas* in Sanskrit and beyond. All subsequent traditions refer to the Vedic texts and their importance.

In the early era of the tonic system, the metre is based on the syllable, as "light" or "heavy" (clearly visible in the texts as recurring structures based on short and long syllables), although this is not the only factor relevant to the recitation of the Vedic verses because, as already mentioned, the performance also involves pitch. Common metrical groups in Vedic are 11 syllables (a metrical cadence that also occurs in the Avesta) as a trochaic cadence, which can be extended to 12 syllables as an iambic cadence (not occurring in the Avesta) and eight syllables (also occurring in the Avesta).[21]

The most common Vedic stanzas consist of 4 x 11 syllables *(triṣṭubh*, in 2/5 of the hymns), 3 x 8 syllables *(gāyatrī)* (1/4), 4 x 12 syllables *(jagatī),* 4 x 8 syllables *(anuṣṭubh).*[22] RV also has a variant with 4 x 5 syllables *(dvipadā virāj)*; however, in theory, these five syllables are said to correspond to the last five syllables of the *triṣṭubh.*

In the Ṛgveda, other variants of these basic patterns are found and are designated by unique names. However, nearly all of them still occur in various multiples of 8, 11, 12, and sometimes five syllables.[23]

The sequence of 4 x 8 syllables, the *anuṣṭubh*, is not the most common type in the Ṛgveda, but a shift towards its greater prevalence can be seen as early as the Atharvaveda, foreshadowing the later development of its heir, the *śloka* metre, predominant in classical times.

18 Allen (1953, pp. 87–93). For an audio example of the standard and traditional way of reciting Vedic poetry: https://www.youtube.com/watch?v=l0XXSSwCoic&list=PLltZhGlkd27aRaJ0bKb_SRV1C-74S0sHA. This specimen of recitation provides the rhythm by alternating long and short syllables. Whether such a method is "correct" for the period from which the hymns originate or is just a preserved tradition developed for the performance of Vedic versified texts, we have no means to decide.

19 Lubotsky (1995) gives a clear insight into this connection. In his own words, he has made a "first attempt to analyse and classify how the poets of the Ṛgveda made use of the accentual contour."

20 The ancient Chāndogya Upaniṣad, which belongs to the Sāmaveda, received its name from certain singers practising a form of metrical performance called *chandogas.*

21 The parallel occurrences of the types in RV and the Avesta would be the only available material to indicate the state of metrics, at least in Proto-Indo-Iranian times. The prevailing opinion is still that, despite the obvious metrical similarity between RV and the Avesta, "eine grundsätzliche Verschiedenheit besteht nur darin, dass die vedische Metrik quantitierend, die gāþische dagegen akzentuierend ist" (Reichelt 1909, p. 13); this is also maintained by Kuryłowicz (1975). Meillet (1923, pp. 15–16) discards entirely the evidence in the Iranian languages for PIE metrics, because even the Avesta, in its complicated linguistic development, has lost the difference between short and long syllables, even though it is "proche du vers védique".

22 Macdonell (1917, p. 439 footnote 3): "The frequency of this metre is about one-third that of Gāyatrī in the RV, but in the post-Vedic period it has become the predominant metre."

23 For an exposition of Vedic metres, see Murty (1988). The first part of Lindquist (2011) presents a statistically specified inventory of the Vedic metres. This material is organised in order to find irregularities that can contribute to revealing the historical development of the PIE language.

The metrical patterns of classical Sanskrit

The Indian science of metrics, which developed from Vedic times, came to be called Chandaḥśāstra and constituted an essential part of Vedic learning. The word *śāstra* is the commonly used term for scholarly works in any field, and so we can translate the term as "science of metrics". It is important to note that these scholarly tracts are both descriptive and prescriptive, since Indian educational texts in general can be viewed as referring to an ideal tradition of learning.

The word *chandas* was used more widely in different contexts. Initially, it had a meaning connected to "pleasure/delight" and from relatively early on it referred to the Vedic hymns.[24] At an early stage, the word was related in some way to the function of singing. From then on, especially among the grammarians and already with Pāṇini, it became a word that suggests Vedic language usage, as opposed to ordinary language *(laukika). Chandas* is also related to the ritual singing/reciting of Vedic verses. This led to the later common meaning of *chandas* as metrical performance.

It should also be pointed out that the skilful handling of metrics according to the *śāstra* came to be monopolised by the court poets in *kāvya*; their culture is of great importance for the Sanskrit *belles lettres* in general from the Middle Ages onward.[25]

As for the internal developments of Indian metrics from the earliest times, some inherited characteristics must be pointed out. As mentioned above, in the Vedic texts, especially the Ṛgveda, which consists entirely of stanzas, the metre was bound to syllables, their character, and their number. Also, the method of recurring features such as quadruples for the *pāda* was already predominant in the Vedas.

One of the Vedic metres that was not the most common one in the Ṛgveda, the *anuṣṭubh*, based on 4 x 8 syllables, became the most important one in the following tradition. The change to the dominance of this metre begins in the Atharvaveda. The most significant formal change is the shift from *anuṣṭubh* to its counterpart, *śloka*. This classical metre allows for more alternative sequences while following the same general rules. In *śloka*, there is a difference between the first and second hemistichs, with the 2nd *pāda* mainly tending to be, in our terms, trochaic, and the 4th *pāda* iambic.

The development from *anuṣṭubh* to ś*loka* is easy to understand in formal terms, but it is more interesting to note the predominance and function of this metre in specific texts from late Vedic to classical times. In terms of its function, ś*loka* could be called the hexameter of India. It is used (with a few insertions of other metres) throughout the Sanskrit epic texts. Its other more conspicuous use is as an alternative, but dominant, formal means of expression in the bulk of the *sāstra* texts, i.e. early scholarly works, mainly when they express authoritative truths about scholarly matters. A notable feature of the broad concept of *śloka* is that its use often signifies a quotation from an older source and has a connotation of religious matters, both when used in itself and when only referred to. It has been proposed that the term, as well as its early and Brahmanical (not Buddhist) use, replaced an older dominant and authoritative concept, *gāthā*, which is still particularly well known in ancient Persian, in the primary Avestan texts.[26] The common etymology has been based the interpretation of *śloka* as meaning just "sound" and being connected to the verb √*śṛ*, "to hear", whilst *gāthā* is connected to the verb √*gai*, "to sing". The original meaning of the term ś*loka* would already be multiple, being used for

24 The verb √*chad/chand* in RV would mean 'shine, sparkle'.

25 In Agnipurāṇa, the passage on *chandas* 329–335 is followed by explanations on phonology (336) and on *kāvya* (338); basic terms of metrics are expressly connected to the latter (*padya, vṛtta, jāti*). On *kāvya*, see Gren-Eklund (2006).

26 Horsch (1966) provides the whole story of the traditional literary stage in which the designations *gāthā* and *śloka* developed. In the Brahmanic tradition, the name *gāthā* for (obviously sung) verses – especially "memorial/didactic" verses – disappeared and was replaced by the notion of *śloka*. As a verse form, the *śloka* was already in use since earlier, generally recited in the metre *anuṣṭubh*. On the other hand, the Buddhist tradition retained *gāthā* in the form of religious songs. Horsch on *gāthā* pp. 213 ff., on *śloka* pp. 223 ff.

verses, and even for songs in terms of both form and content. More narrowly, in classical Sanskrit, it came to be used primarily as a special metre for narrative and didactic purposes.

The technical transformation from Vedic *anuṣṭubh,* through its late Vedic forms, to the metrical form of *śloka* may – due to its strict observation of long/short syllables – allow the versification to be sketched in our traditional way of registering metres rather than being analysed in *mātrās*; see Appendix 2.

However, the eleven-syllable *pāda* is also an important survivor from Vedic times to the classical period of Sanskrit poetry. It should be mentioned that when it comes to the longer *pādas* with 11 or 12 syllables, the *cæsura* becomes important and acquires a relatively fixed place, after the 4th or 5th syllable. The Avestan *gāþās* show a preference for verses of 11 and 12 syllables, but the sequence then seems to have its *cæsura* fixed after the 4th syllable.[27]

Through the names of the metres, the *śāstra* texts on metrics are closely associated with Vedic deities, the classical ones all bearing "fantasy names" with divine allusions. For the most part, the names appear in feminine forms, suggesting that they should be added as attributives to a feminine noun, probably *gītī* or *gītā,* meaning song. One of the most common metres in Sanskrit poetry, with four *pādas* repeating 11 syllables (not exactly following the pattern of the Vedic *triṣṭubh*), is *indravajrā*, "(the *gitī*) on Indra's thunderbolt".

It might be not only of historical, but also of comparative interest to take a closer look at how the metrical units are classified in the primary texts of the classical Sanskrit theory of metrics, the Chandaḥśāstra. Similar theories of metre also exist for the classical languages Latin and Greek, but they have been discarded by the authority Maas as not being of interest.[28] The Sanskrit theories, which were fairly contemporary with the creation of poetry as part of the classical literature, are of interest, however. They also follow the common Indian pattern of listing items in open-ended groups of phenomena having the same function, which is quite different from the Western, hierarchical way of ordering.

The system of metrics (*chandas*) as a science (*śāstra*) in Sanskrit scholarly texts

Studies and theories of language have always been an essential and deeply explored field of indigenous Indian culture. Metrics, as mentioned above, is respected as an essential part of the literary culture. How did the theories and fixed rules of metre cope with a diversity of verse forms which, when accounting for the number of syllables in the *pādas*, amounted to more than 20 basic kinds of "metres" with many secondary combinations? The inventory of metres is based on a type of systematisation that is typical of all classical Indian scholarship, in which counting is basic to the analysis of structures. To get a clear view of the matter, it is necessary to know the terms used, as well as their delimitations. All *śāstra* texts are based on named terms, technical terms, *saṁjñā.* This is even discussed in the Sanskrit literature as a metaconcept, understood as a word that is assigned a conventional meaning.

The primary text on the topic, the Piṅgalasūtra (probably second century BCE), must be interpreted with the help of the traditional main *bhāṣya* of Halāyudha, dated to the 10th century CE. In the first *adhyāya* of eight, Piṅgala begins by listing the sigla used for metres. In the second *adhyāya*, he uses the word *chandas* as a heading for lists of the metres used in Vedic and Sanskrit texts. In the following chapters, the reader can peruse listed sequences of metres, but the fifth and sixth *adhyāya* each give a central concept as a heading, *vṛtta* and *yati,* respectively. Halāyudha comments on these by resolving them into their components.

27 Reichelt (1909, p. 12 f.).
28 Maas (1923, p. 2).

The overall term *chandas* occurs as the title (*adhikāra*) of the second *adhyāya,* but it is also said by Halāyudha to be the topic of the book as a whole. The word in itself is first explained in P. 2.1. In the *bhāṣya* it is thus defined, or rather interpreted, as follows: "*chandas* (metrics) is here given its name with the word '*chandas*' according to the counting of syllables" (*chandaḥśabdenākṣarasaṅkhyāvat chando 'trābhidhīyate*).

In the following sūtra, 2.2, the topic is explained with an even more stipulative definition, only saying pragmatically that *chandas* is the technical term for *gāyatrī*, etc., in the following *sūtras*. Even less conclusive as to the meaning of the term is its definition as "counting the *akṣaras*". The word *akṣara* is not an unambiguous term, as we expect a definition to be. *Akṣara* can correspond to any of several concepts that have distinct meanings, and in different Indian linguistic contexts it can refer to "sound, vowel, phoneme, and syllable".

After the principal term *chandas*, the main term used is *vṛtta* (basically meaning something that is set in motion, even "revolving"), which in this context seems to describe a verse or stanza for which there are metrical rules for the syllables in each of the four *pādas*. Here, we also appear to meet with what we would regard as a deviant kind of definition, and as such, we have to accept it on its own terms in order to make a sufficiently understandable comparison of the systems. What is defined here is a process, or more precisely, what actually happens in a process when the metrical system is applied to poetry and its performance. It does not refer to the parts of the system as such. The term *vṛtta* refers to one aspect, the process of the metrical craft, seen as a relation between sounds or, if one so wishes, syllables. Now and then in the *chandaḥśāstra* this is alternatively specified as *varṇavṛtta*. In this case, we encounter the word *varṇa*, which has the same ambiguity as *akṣara,* meaning both "sound" and "syllable"; but in this compound they both refer to the performed phoneme as sound.[29]

Furthermore it must be pointed out that European terms for definition apply both to the process of definition and to the result of that process. Such terms in Indian texts certainly include meanings of both process and result, but they differ in that they are used *ad hoc*, which is why in this case the term *vṛtta* would mainly express a linguistic process. This interpretation is underscored by the claim, sometimes repeated in the texts on metrics, that *vṛtta* is only a term for the final rhythm in the verse. Likewise, in theories of *kāvya* and rhetorical figures (*alaṁkāra*), the term *vṛtti* is used to point to the process that relates literary form to content.

To get a clear picture of the technical terms in Indian metrical art, it is necessary to point out that *vṛtta* often occurs together with the term *jāti*. In line with Piṅgala's opening *sūtra* in the passage on the metrical process, section 5, I contend that the two terms designate the same thing, but from different aspects. As expressed there, the *vṛtta* is what results from the shifting that occurs between the different qualities of sounds in the performance of poetry, but *jāti* is merely a part (*ekadeśa,* 'partial') of what happens; the basic meaning of the word *jāti,* as used in any *śāstra* text, refers to what is generic. When *jāti* is applied to the metrical events, it must refer to what is already there, the *akṣara* 'sound', which is tangible and indestructible, as the word itself indicates.

On vṛtta:

> P. 5.1 [...] tathoktam 'padyaṁ catuṣpadaṁ tac ca vṛttaṁ jātir iti dvidhā'/gāyatryādau chandasi vartate iti 'vṛttam'/tac ca sthiragurulaghvakṣaravinyāsam iṣyate/pādena saṁyogāt 'padyaṁ'/ yathā āryādichandaḥsv api pādavyavasthā nāstīti, vṛtte punaḥ pṛthak bhavati ity arthaḥ/ pādena saṁyogābhāvāt/ tathoktam 'ekadeśasthitā jātir vṛttaṁ gurulaghusthitam' iti//
>
> ... /it is (traditionally) said that poetic quadruple language is of two kinds, *vṛtta* and *jāti*/ *vṛtta* is what is in motion/ that means a fixed arrangement of heavy and light syllables/ poetic form (happens) from

29 According to Renou's interpretations of the grammatical terminology, because of its treatment in Mahābhāṣya, *akṣara* is generally better interpreted as meaning 'phoneme', and *varṇa* more commonly refers to the vowel – especially when short – as a phoneme.

> the combination of *pādas*/ it means that as in the metres *āryā* etc. there is no arrangement of *pādas*, on the other hand there is separation (of them) in *vṛtta*/ because of the lack of junction it is (traditionally) said that *jāti* is placed in one place, *vṛtta* has its place according to heavy and light/

Regarding the *vṛtta* process, compared to the Vedic metres, the verses/stanzas of classical Sanskrit poetry appear to be built far more often on the fourfold repetition of the *pādas* (as the name implies), at least in so far as the number of syllables is concerned. But other variations between the *pādas* contribute to the diverse and seemingly complicated system of metres used in poetry. A *pāda* can contain from 4 to 26 syllables, each of which can be short or long. Furthermore, all four *pādas* do not need to have the same structure, but can be of different kinds.

In the theoretical framework, the available material – here, the sequences of syllables in any possible order (with long and short vowels) – is arranged into groups. These groups are divided into eight types of what we might equate to metrical feet in our classical sense (comparable to dactyl, anapæst, etc.), all of which, though restricted to three basic units, are possible to identify as *moræ* (light and heavy). Any such group is called a *trika*. Each of the eight prescribed groups is then referred to by a signifying letter/syllable (*ya, ra, ta, bha, ja, sa, ma, na*), as is commonly done in classical Indian thought. Finally, two additional sigla are added to these eight, which indicate one long and one short syllable respectively (*la, ga*).[30] See the listed items in Appendix 2.

Such groups of metrical forms consisting of combined *trikas* are what form a *vṛtta* when it is termed a *mātravṛtta*. In our sense, they look like such combinations of metrical feet as would deserve the term "metre". Lists of classical metrical feet are very similar to the lists explained by the sigla.

This is an aspect of the *chandas,* also designated by the term *gaṇachandas*, by which the metre is defined in terms of both the number of groups of syllables and the number of *moræ*. A *vṛtta,* used as a superior term, might then be explained according to the number and position of the syllables in each *pāda*. Most of the *mātravṛttas* are like this, and have different qualities according to what the sequence of *pādas* looks like. There are *samavṛttas,* where the four *pādas* are alike, and *ardhavṛttas*, in which the odd and even *pādas* are different. There is also a group of *viṣamavṛttas*, where the *pādas* are irregular, though recurring.

An overall description of the *chandaḥśāstra*, meant to be understood by all, can be quoted from Agnipurāṇa. In paragraph 337, stanza 21, on what characterises *kāvya* (*kāvyalakṣaṇam*), after the establishment in v. 8 of its three parts – prose, poetry, and their combination (*gadyaṁ padyañca miśrañca kāvyādi trividhaṁ smṛtam*) – the following explanation is given:

> padyaṁ catuṣpadī tac ca vṛttaṁ jātir iti tridhā/vṛttam akṣarasaṁkhyeyam ukthaṁ tat kṛtiśeṣajam //21//mātrābhir gaṇanā yatra sā jātir iti kāśyapāḥ/samam ardhasamaṁ viṣamaṁ paiṅgalaṁ tridhā//22//
>
> Quadruple *jāti* and (what is) *vṛtta* is poetic language in three forms/*vṛtta* is said to be countable as to the *akṣara,* it comes from what is left of the activity//the Kaśyapa school tells that where there is a counting of *mātra* there is *jāti*/according to the Piṅgala school *vṛtta* is of three kinds, (with) same, half-same and divergent (sc. *mātra*).

It is important to distinguish a group of *vṛttas* of a kind that sometimes receive the designation of *jāti*, and which would not be described in quite the same way even if they were also counted among the *mātravṛttas*. This group appears when a different method of counting the units is used; in this case, only the *moræ* are counted, in that they contrast short and long sounds, rather than the number of syllables. The most common metre in this *jāti* group is called *āryā,* and it systematically counts the *moræ* in each of its four *pādas* as 12/18/12/15. There are theories that this type of metre specifically developed from singing, meaning that it possibly retains a distributional feature of short and long in the form of high and low tones.[31] It has even been suggested that it can be compared to the chorus

30 Piṅgala devotes the first four chapters of his *sūtra* text to the function of these sigla.

parts of Greek drama, i.e., the æolic order of metres. This comparison is an open question; a closer look might also reveal essential differences.

***

An additional concept discussed within the framework of chandas as metrics, and essential to the performance of poetry, concerns the pauses to be made in recitation. Reminiscent of the concept of *cæsura* in the metrical theories of classical languages, this is the so-called *yati* (√*yam*, 'to hold back'). Probably owing to its importance in the recitation of Vedic hymns, the *yati* began to be seriously discussed as a phenomenon in the *Chandaḥśāstra*. It is the topic of the 6th chapter of Piṅgala's sūtra text, and many examples are given after its presentation in the first sūtra. A part of Halāyudha's commentary on this *sūtra* has even received the prestigious title of an *upaniṣad*.[32]

On *yati*:

> P. 6,1 vicchidyate vibhajyate padapāṭho 'sminn iti vicchedo viśrāmasthānam, sa ca yatir ity ucyate/ nanv atra śāstre 'yati'śabdena vyavahārādarśanan nirarthakaṁ sañjñeyaḥ (alt. saṁjñākaraṇam)/naiṣa doṣaḥ/ […]
>
> In the reading mode of the text, it is interrupted and divided; in it, the interruption is a standstill that is called *yati*/maybe here in the textbook, there by the word *yati* is understood (the doing of the term) an invisible action without any meaning?/that is not wrong/… (Some restrictions on this description follow.)

The method of presenting *yati* is recorded in *chandas* as a further arrangement of enumerated functions in verses when recited. However, in written texts, the function of *mātras* is more conspicuous.

Altogether, however, in the complete system, the number of different metres – the *vṛttas* and all the groups, *gaṇas* – amount to more than 850.[33]

Such a large number is undoubtedly due to the consistent method of systematisation in Indian sciences, which groups all items not in a taxonomic system but in a listed order. In practice, however, less than ten of these metres could be said to be in common use in Sanskrit, mainly those inherited from the Vedic stanza.

The tradition of Vedic and Sanskrit metrical theory with its ācāryas is also followed in the following stages of Indian poetry, that is *prākṛt*, *apabhraṁśa*, and *pāli*, but the varieties become broader.[34] The *gaṇas* can diverge from *trikas* and contain from two up to six *moræ*. Certain kinds of stanzas are

31 The connection of *varṇavṛtta* and *tāla* (appr. 'melody') is rejected by Pollock (1977, pp. 111 ff.). He concludes on pp. 115 f.: "All discussion, then, of metrical etymology, *tāla*, ictus, accent – indeed of rhythm in general – appears to serve no purpose in respect of Sanskrit lyric verse but to seduce us from the poetry into realms of irresolvable theory." But would it be possible to judge our ideas of theory on metrics as not likely to be transposable to the corresponding Indian theory? Any music theory must discuss such features of time as the duration of sound and processes of variations. In Tamil prosodic terminology, *taḷai* defines the metrical 'connection' between metrical feet, which seems to belong to music, Zvelebil (1989, p. 22).

32 Pollock's (1977) dissertation on versification in Sanskrit poetry was mainly devoted to the concept of *yati*, studying the main treatises on the topic in the *chandaḥśāstra* texts (Pollock on pp. 22–36) and the special tangible instructions on the *yati*, expressed in only four *ślokas* in Halāyudha's commentary to Piṅgala 6.1, a passage that also occurs in other texts on *chandas* under the designation *Yatyupadeśopaniṣad*. Pollock calls it a "break/pause", identifies it as a "boundary", and tests *cæsura* and *hiatus* while tracing the notion in all following texts. Finally, he connects the occurrence of *yati* to syntactic phenomena.

33 In Apte (rev. ed. 1957–1959), a systematic overview is published as appendix A II "A Classified List of Sanskrit Metres" (pp. 13–32).

34 For a comprehensive survey of Pāli metre, see Warder (1967).

sometimes preferred individually.[35] A tendency to use rhyme is also more noticeable than in Sanskrit poetry.

***

To sum up, as with many śāstras, one finds, in addition to extensive texts with commentaries on *chandaḥśāstra*, a practical purāṇic compendium of its terms and concepts. In Agnipurāṇa 328–335 an overview of the Indian metrics is given, primarily addressing the state of Vedic versification. Here the metrical system is comprehensively presented in the usual Indian enumerative manner; the system has obviously been a challenge to re-order hierarchically, with all the mentioned concepts unambiguously interpreted.

Agnipurāṇa 328 gives, in three stanzas, the essence of the metrics, the *chandaḥsāra*:[36]

chando vakṣye mūlajais taiḥ piṅgaloktaṁ yathākramam/sarvādimadhyāntagaṇau mlau dvau jau stau trikau gaṇāḥ //1//

I am going to talk about metre as it is in proper order, told by Piṅgala with its basics/the groups of three (units, *moræ*) at the very beginning (sc. *mlau*), in the middle (sc. *jau*) and at the end (sc. *stau*) of all (are):

double (as)

mlau (= ma+la – – –/⏑);

jau (= ja+ja ⏑ – ⏑/⏑ – ⏑);

stau (= sa+ta ⏑ ⏑ –/⏑ – –);

hrasvo gurur vā pādānte pūrvo yogād visargataḥ/ anusvārād vyañjanāt syāt jihvāmūlīyatas tathā//2//

At the end of a *pāda* (there is either) a short or a long (vowel/syllable) before a junction (= conjunct consonant), a *visarga*, an *anusvāra* consonant and thus before a guttural.

upādhmānīyato dīrgho gurur glau nau gaṇāv iha/ vasavoṣṭau ca catvāro vedādīty ādilopataḥ//3//

A heavy (syllable) is prolonged when caused by (an internal) *visarga*, here in the double groups are (*gaṇa*) ga+la (–/ ⏑) and na+na (⏑ ⏑ ⏑/ ⏑ ⏑ ⏑); in the four Vedas etc. (there are) eight groups, because of (also those) with the first part elided.

A note on the practice and theory of metrics in Tamil

The picture of Indian prosody would not be complete without mentioning Tamil, a language and a body of poetry which, obviously owing to a phonological structure that from the beginning was not quite like that of Sanskrit, had a practice and theory of its own just as ancient. Through comparison, it will clearly be shown that when the general structures of languages diverge, so do their metrical systems.

Briefly put, in ancient Tamil poetry, all syllables were counted alike, whether they were prolonged or short – the short sound only being characterised as light, that is, as lighter than a longer sound.[37]

35 Thus, *apabhraṁśa* poetry favours the *dohā* metre, containing two *pādas* with 13/11 *moræ*.

36 The double trika are here rendered after ed. Baladeva (KSS). Ed. Mitra (BI) gives the text mlau dvau jau stau and ed. Apaṭe (ASS) in its turn mlau bhyo jrau stau trikā gaṇāḥ; the trika added in the last case would be interpreted as bhya (=bha+ya) – ⏑ ⏑/⏑ – –; jrau (=ja+ra) ⏑ – ⏑/– ⏑ –.

37 The basic metrical unit in Tamil is *aca,* which "is the fundamental quantitative unit of any metre in Tamil", Zvelebil (1989, p. 9). But the minimal part of the metrical unit is *eḻuttu*, a lexeme, which according to grammarians means 'letter', but which might better be translated as 'phone'. Counting the parts of a metrical line in Tamil can-

> Tam. syllabification differs basically from Skt. Even though both Skt. and Tam. metres belong to quantitative prosodical systems based on the durational difference between short and long vowels. Tam. metrical syllable is rather "morphemic" than phonemic or syllabic: a combination of two short / ⏑⏑ / or one short plus one long / ⏑– / may constitute a metric unit called nirai […], whereas short / ⏑ / and long / – / vowels are distinctly separate syllables in Skt.; in Tam. either vowels may constitute a unit called nēr […], the fundamental concept of Tam. prosody is that of acai, a primary metric unit. It can be simple or compound.[38]

Poetic stanzas in classical Tamil typically contain 2–6 feet per stanza, with variation within the strophes.[39] Unlike with Sanskrit poetry, specific types of rhyme (or consonance, *toṭai*) are prescribed: initial, medial, and final. The most common kind of metre in classical Tamil, *veṇpā*, is not the same as the *śloka* of Sanskrit, although it takes the form of strophes, in this case consisting of two lines, the first with four "feet" (sequences of syllables) and the second with three.[40] A thorough comparative study should consider the typological differences between the languages, including general language features and the transmission of traditions. Although the early phonological development may have been influenced by interaction between the Dravidian and Indo-Aryan languages, the traditions of performing fixed forms of literature did not develop similarly during the periods about which we have knowledge.[41] Over time, different language groups, particularly Sanskrit and Tamil, came into close contact, influencing each other in the fields of culture, scholarship, poetry, and the performing arts. Religious singing and music played a significant role in unifying the culture.

> The first stage is marked by the absolute predominance of the indigenous pre-Sanskritic and extra-Sanskritic system, based on the conception of the basic metric unit (*acai*) […]. The second stage begins (in ca. 600 A.D.) with the influence of Sanskritic prosody on Tamil metre. It culminates with the massive impact and adoption of *akṣara* (syllable) and *mātrā* (mora) based metrics alongside the indigenous Tamil system. The third stage is marked by the ever-increasing connection between poetry and music […] fixed melody types […in …] *bhakti* texts.[42]

The Tamil metrical system is largely independent, with few terms borrowed from Sanskrit. In one instance, however, the Sanskrit term *vṛtta* appears in the term for the Tamil metre *viruttam*, but it was incorporated into the Tamil terminology fairly late. This shows the close cultural ties between the two languages in medieval times.

> *viruttam* is the grand metre of classical Tamil narrative poetry and is used, therefore, more extensively than any other metre in medieval Tamil literature./While all other metres depend more or less on sequence, connection of feet (taḷai), and rhythm in the individual lines, viruttam arranges lines in rhymed

---

not be based on something like *moræ*, and any particular Tamil syllabic structure gives rise to various views on the matter, cf. Schafer (1993).

38 Quoted from Zvelebil (1995). Zvelebil (1989) gives a thorough survey of Tamil metrics as a prosodic phenomenon. and an overview of Tamil prosody is provided by Niklas (1988). More precisely, Zvelebil (1992, p. 32) provides a comparison with the syllabic structure in verse: "While Sanskrit metrics are based on the conception of syllables (*akṣara*) and moras (*mātrā*), Tamil metres are based on the unit called *acai* which is of two types: simple, long or short (v⏑ or–, *nēracai*), and compound, made up of two syllables (⏑⏑ or ⏑–, *niraiyacai*). In other words, *nēr* may be quantitatively long or short, whereas the first syllable of *nirai* is always short; *nēr* is always a macron, while *nirai* may be either pyrrhic or iambic." On the next level, there is also a concept of regular "metres" (in the sense of "feet") in verse, called *cīr* (basically signifying 'beauty'), Zvelebil (1989, p. 22).

39 The classical handbooks of Tamil poetry analyse a metrical system in terms of feet, counting 30 types in 5 classes. The notion of simple and compound syllables thus replaces the distinction between short and long *moræ*. For example, a conjunction of two compound syllables and a simple syllable is compared to an *anapæst*.

40 Niklas (1988, pp. 204 ff.).

41 Walldén (1982) indicates possible phonological evidence of quite early contacts.

42 Zvelebil (1975, p. 278).

> stanzas, mostly quatrains, in which each line must harmonise with the rest and fall into a kind of tune, often kept up for many stanzas or a whole piece.[43]

Applying a historical perspective to investigating the results of different language groups sharing a common culture, we find an instructive paradigm on Indian soil.

General remarks

What, then, has happened over time? As early as the Indian classical period, the metres gradually became frozen – perhaps in part due to the work of theorists on the subject. Despite having inherited a relatively fixed system of metres, the indigenous theorists of MIA poetry (viz. *prakṛt*) seem to have adapted to the innovations of poets and to have included more variations in their handbooks. Thus the *jāti* type of metre, based on *moræ*, grew increasingly important, and in the metrical theories for Prakrit, the *āryā* metre even received the genre name *gāthā*. Such developments depended on changes in phonological language structures affecting all aspects of phonotactics, such as phonemes, syllables, and rhythmic combinations.

Another development in the MIA, seemingly parallel to what happened in the European Middle Ages, is that rhyme is more often found in the form of 2–4 repeated syllables, usually trochaic, because of the type of language. In Sanskrit, rhyme is rare, although it is acknowledged as a kind of rhetorical device. The term used for it is *yamaka*, a word whose original meaning denotes two similar things, and thus also means 'twin'; the idea is rhetorical, and is linguistically better understood as paronomasia.

Indian prosody, primarily recorded in indigenous ancient schoolbooks as a linguistic feature, became necessary for the theories on *kāvya* and rhetorical embellishment only later. It must be remembered that there is a very long and elaborate tradition of oral performance in India, and thus it is more or less a fixed inheritance from immigrant culture(s). This means that any kind of structured talk, liturgical performance, narrative, etc., was meant to be listened to. Also, it was from such processes of oral performance that the language came to be analysed and systematised at an early stage in India. Orally performed literature of this kind also required elaborate techniques for memorisation, which then served as sources for the development of methodical linguistic methods in a special Indian grammar in which the prosody, and its application in metrics, played an essential role.

In the study of written Indian texts, it is necessary to bear in mind the already established, fixed and very early indigenous traditions of language learning and literary performance, which were originally recorded in the classical *vedāṅgas*: phonetics (*śikṣā*), prosody (*chandas*), grammar (*vyākaraṇa*), etymology (*nirukta*), ritual (*kalpa*), and astrology (*jyotiṣa*).[44]

Bearing in mind the genesis of Indian linguistic scholarship in an oral tradition that gave rise to its form and method, we may understand how it differs – in its approach to learning, its methods, and even its terminology – from Western cultures, whose oral culture was taken over by the written word at a relatively earlier stage. This difference manifests in many ways, but its effects on the view on prosody are striking. In summary, in written form, a linguistic specimen can be analysed as composed of more or less solid and definable parts, but in heard form, the question is about what happens in the performed sequence. In my view, it seems clear that the Indian ideas and terminology of *chandas* and, moreover, all language prosodic features, would be more easily understandable if they were viewed as processes, which in this case are oral. Applying such indigenous scholarly terminology and methods, based on performance and process, as proposed here for ancient Indian metrics, to the other *vedāṇgas* might contribute to their understanding.

43 Zvelebil (1989, p. 77).

44 For the Vedic ritual, it was imperative that the language performance was correct. It was also necessary to perform any text at the proper times, and for that purpose the astrology had to be well elaborated and handed over.

APPENDIX 1

Some basic concepts of Indian metrics

śāstra	terminology explained
akṣara (*laghu, guru*), cf. *varṇa*	syllable (light/short, heavy/long) (in grammar also phoneme, letter, vowel)
chandaḥśāstra	the science of metrics
chandas	metrics
1. *mātrāchandas*	defined by number of *moræ*
2. *gaṇachandas*	defined by groups containing a certain number of syllables (fixed order) *plus* number of *moræ* (e.g. *āryā*)
3. *akṣarachandas*	defined by syllables (long and short in fixed order) = virtual *vṛtta*
chandas	also: Vedic texts, Vedic language
jāti (*mātrāvṛtta*)	metre in a stanza regulated as to *moræ* (not disregarding the number of *akṣaras)*
mātrā	= *mora*
(*mātrā*)*gaṇa*	metrical 'group' of *mātrās*, syllabic foot; cf. list in App. 2 (*ya-gaṇa*, *ra-gaṇa* etc.)
mātṛka	'graphical' unit (suggested translation in letter by Helmer Smith)
pāda	quarter of a stanza (4 *pāda* = any *padya*)
padya vs. *gadya*	poetry vs prose (i.e. versified vs spoken text, cf. *gīti/gāthā* vs. *pāṭha*)
trika	cluster of three units
varṇa (cf. *akṣara*)	sound, syllable, phoneme
vṛtta = *varṇavṛtta*, *akṣaravṛtta* cf. jāti	metre processed in a stanza, regulated in the first hand as to syllables and their positions. The *vṛtta* may be *samavṛtta* (the four *pāda* the same), *ardhasama* (two hemistichs the same), *viṣama* (four different *pāda*).
yati	*cæsura*, restriction (*sc.* of the flow of speech)

APPENDIX 2

Basics for systematising metres as *trikas* according to sigla in classical Sanskrit metrics

gaṇas ('groups', each one a triplet, *trika*), the sigla in the *paiṅgala* order:

ma	– – –	
ya	⏑ – –	
ra	– ⏑ –	
sa	⏑ ⏑ –	cf. anapæst
ta	⏑ – –	
ja	⏑ – ⏑	
bha	– ⏑ ⏑	cf. dactyl
na	⏑ ⏑ ⏑	
la	⏑	(one short syllable)
ga	–	(one long syllable)

The groups are used (theoretically) in *pāda*s of any number, from one up to even more than 26.

APPENDIX 3

Some schematic examples of the most common *vṛtta* (syllabic metre)

(X here represents *anceps*)

a) **anuṣṭubh** (Vedic)
   4x (X – X –/ ⏑ – ⏑ X)

b) For classical **śloka,** the most common form is:
   2 x (X X X X / ⏑ – – X / (X X X X / ⏑ – ⏑ X)
   There is a certain tendency for the first and third *pādas* to have trochaic forms, in contrast to the second and fourth pādas which have clearly iambic forms

c) Examples of **variants of anuṣṭubh/śloka** as presented by the theorists:
na la bha la ga OR *ja ra la ga* OR *ma ta la ga* OR *ma ma ga ga* ETC

d) An example of a verse with 11 syllables (classical):
indravajrā
ta ta ja ga g
– – ⏑ – – – ⏑ ⏑ – ⏑ –

e) **āryā**
number of moræ in the 4th pāda: 12 / 18 / 12 / 15

f) Tamil **veṇpā**:
⏑ ⏑ ⏑ ⏑ – – / – ⏑ ⏑ / – ⏑ ⏑ / – –
⏑ ⏑ – – / – ⏑ ⏑ / –

References

Sanskrit texts

Agnipurāṇa. *Agnipurāṇa* of Mahāṛṣi Vedavyāsa. Ed. by Baladeva Upādhyāya. (The Kashi Sanskrit Series, 174). Varanasi: Chowkhamba Sanskrit Series Office 1966.

Agnipurāṇam hindīvyakhyopetam. Ed. Śivaprasāda Dvivedī. (Vrajajīvana Prācyabhāratī Granthamālā 103.) Delhi: Caukhambā Saṁskṛta Pratiṣṭhāna 2009 (available online).

Halāyudha, *Mṛtasañjīvanīvṛtti, see* Piṅgala.

Piṅgala. *The Chhandas Śāstra. With the commentary of Halāyudha Bhaṭṭa*. Ed. by Kedāranāth Śarmā (Kāvyamālā, 91). Bombay: Nirṇaya Sāgar 1938[3].

Piṅgalacchandaḥ-sūtram (*…halāyudhabhaṭṭakṛtamṛtasañjīvanīvṛtti…*). Calcutta: Chātra Pustakālaya 1931.

Secondary literature

Allen, W.S. *Phonetics in Ancient India*. (London Oriental Series, 1) Oxford University Press 1953.

Apte, V.S. *The practical Sanskrit–English dictionary*. Revised & enlarged ed. Three vols. Poona 1957–1959.

Diomedes Grammaticus, *Artis Grammaticæ Libri III*. In: *Grammatici Latini* ex. rec. Henric Keil. Leipzig 1857.

Gasparov, M.L. *A History of European Versification*. (Transl. G.S. Smith & Marina Tarlinskaja, ed. G.S. Smith & L. Holford–Strevens.) Oxford 1996.

Gren-Eklund, Gunilla. "The pleasure of poetry – Sanskrit Poetics and *kāvya*." In: *Literary History: Towards a Global Perspective*, ed. Gunilla Lindberg–Wada. Vol. I, *Notions of Literature Across Times and Cultures*, ed. Anders Pettersson. Berlin & New York: Walter de Gruyter 2006, pp. 135–179.

Hahn, Michael. *Jñānaśrīmitras Vṛttamālāstuti. Eine Beispielsammlung zur altindischen Metrik*. Nach dem tibetischen Tanjur zusammen mit der mongolischen Version hrsg., übers. und erl. (Asiatische Forschungen, 33) Wiesbaden: Harrassowitz 1971.

Hasty, Christopher F. *Meter as Rhythm*. Oxford University Press 1997.

Jacobi, Hermann. „Über die ältesten indischen Metriker und ihr Werk". In: *ZDMG* 40. Wien 1884. (Republished with other shorter articles on Indian metrics in Hermann Jacobi, *Kleine Schriften*, hrsg. B Kölver, 1, pp. 143–174. Wiesbaden 1970.)

Johanson, Lars. "Formal aspects of *ʿarūḍ* versification." In: *Arabic Prosody and its Applications in Muslim Poetry*. Ed. by Lars Johanson and Bo Utas. (Swedish Research Institute in Istanbul Transactions, 5). Stockholm 1994.

Kuryłowicz, Jerzy. *Indogermanische Grammatik. Bd II: Akzent – Ablaut*. Heidelberg 1968.

Kuryłowicz, Jerzy. *Metrik und Sprachgeschichte*. Wrocław 1975.

Lubotsky, Alexander. "Accentuation in the technique of the Vedic poets." In: *Studies in Poetics. Commemorative Volume Krystyna Pomorska (1928–1986)*, ed. Elena Semeka–Pankratov. Columbus, Ohio 1995, pp. 515–534.

Macdonell, A.A. *A Vedic Grammar for Students*. Oxford 1916.

Macdonell, A.A. *A Sanskrit Grammar for Students*. London 1927[3].

Masica, Colin. *The Indo-Aryan Languages*. Cambridge University Press 1991.

Meillet, Antoine. *Les origines indo-européennes des mètres Grecs*. Paris 1923.

Nagy, Gregory. *Comparative Studies in Greek and Indic meter*. Cambridge, Mass. 1974.

Niklas, Ulrike. "Introduction to Tamil Prosody". In: *BEFEO* 77 1988, pp. 165–277.

Pollock, Sheldon I. *Aspects of Versification in Sanskrit Lyric poetry* (American Oriental Series, 61) New Haven, Conn. 1977.

Reichelt, Hans. *Awestisches Elementarbuch*. Heidelberg 1909.

Renou, Louis. Term*inologie grammaticale du Sanskrit*, 1–3. Paris 1942.

Schafer, Amy J. "The syllable structure of Tamil nouns." In: *University of Massachusetts Occasional Papers in Linguistics*, 19. Amherst Massachusetts University Press 1993, pp. 247–274.

Snell, Bruno. *Griechische Metrik*. Göttingen 1955.

Walldén, Ruth. *Studies in Dravidian Phonology and Vocabulary*. (Acta Universitatis Upsaliensis, Studia Indoeuropæa Upsaliensia, 5) Uppsala 1982.
Warder, A.K. *Pali metre. A Contribution to the History of Indian Literature*. London 1967.
Weber, Albrecht. "Ueber die Metrik der Inder. Zwei Abhandlungen." In: *Indische Studien: Beiträge für die Kunde des indischen Alterthums*, 8. Berlin 1863.
Wifstrand, Albert. *Grekisk metrik*. Lund 1965[2].
Zvelebil, Kamil V. *Tamil Literature*. (Handbuch der Orientalistik, Abt. 2 Indien, Bd 2, Abschnitt 1) Leiden 1975.
Zvelebil, Kamil V. *Classical Tamil Prosody*. An Introduction. Madras 1989.
Zvelbil, Kamil V. *Lexicon of Tamil Literature*. (Handbuch der Orientalistik, Abt. 2 Indien, Bd 9.). Leiden 1995, p. 434, *s.v.* "Metrics, Tam."