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MEMORIAL SYMPOSIUM  
MAY 10 - 11, 2025



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Virtual Meeting  
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India Discovery Center  
Lincoln, MA, USA.

Cover picture:  
From the book “Timmy”,  
presented in 1939 as a gift to five-year old Tom  
from his grandfather Thomas C Burke Sr.  
“Timmy” is a book of stories and pranks of little Tom.

Back cover picture:  
Thomas C Burke in grammar session at Varanasi, 1964

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## *Mr. Thomas C. Burke*

*(March 14, 1934 – May 6, 2023)*

THOMAS C. BURKE was an inspired scholar and original thinker. He devoted decades of his life to Harvard University, in studying, teaching and working. Formally, an Administration staff member, he spent abundant time in the Department of Sanskrit and Indian Studies which is currently known as the Department of South Asian Studies. Mr. Burke mentored and helped hundreds of students and Faculty members in their research and studies across multiple disciplines. His academic interests were broad, that included grammar, linguistics, music and classical literature. He actively participated in numerous South Asia-related events at the University and in the metropolitan Boston area. He served as a distinguished speaker at India Discovery Center seminars. Tom was fluent in Hindi, Sanskrit, Greek and Latin.

A gentleman of exemplary character known for his profound humanity, Tom Burke was cherished by friends and colleagues for his courtesy, gentleness, and nobility. The greater Boston South Asian community expresses its gratitude to the deceased friend through this memorial publication.





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## EDITORIAL NOTE

*Sarasvatī śrutiṁahatāṁ mahīyatāṁ*

(‘May... wisdom grow in scholars’ band’-Arthur W. Ryder)

It is both a pleasure and a privilege for us to present the completed papers as the Proceedings of the First Thomas C Burke Memorial Symposium held virtually through video on May 10-11, 2025. The theme for the Symposium was “**Language, Grammar, Prosody and Music.**” The Symposium was graced with the presence of Professor Ashok Aklujkar, Professor Emeritus in the Department of Asian Studies, University of British Columbia, Vancouver, Canada. The symposium videos are archived in two parts at <https://youtu.be/s0HP80oe3Yw>, <https://youtu.be/fK1TC5x3UKg>

The first article, “**The –la Suffix Across Sanskrit and Prakrit: A Reassessment of Its Origin and Function**” by Mr. Kushagra Aniket and Mr. Rudra Vikrama Srivastava, re-examines the underexplored –la suffix in Indo-Aryan languages. While Pāṇini accounts for some formations through the *sidhmādi-gaṇa*, many common –la words such as *ekala*, *vṛṣala*, and *bahula* fall outside his framework. The authors argue that the suffix predates Pāṇini and may have emerged in Prakrit as a diminutive or semantic marker, later absorbed into Sanskrit. By recognizing –la as a meaningful morpheme rather than a relic, the study proposes a broader, pattern-based understanding of word formation.

The second article, “**Semantic Variations of ‘bhāva’ and ‘kriyā’ in Pāṇini’s Sūtras: Synonymous or Distinct?**” by Dr. Abhijit Mandal, investigates the long-assumed synonymy between the terms *bhāva* and *kriyā* in the *Aṣṭādhyāyī*. By comparing textual occurrences and commentarial interpretations of Patañjali, Bhaṭṭoji Dīkṣita, and the *Kāśikā*, the author argues that Pāṇini used the two terms intentionally to denote different grammatical functions. *Kriyā* specifically refers to *tiñanta* and *kṛdanta* verbal activity, whereas *bhāva* indicates a broader state or process. The article further

analyses how choices of wording relate to the principles of sūtra conciseness (*lāghava*) and shows that Pāṇini avoids interchangeability because the two terms are semantically non-identical.

The third article, “**Understanding the Ancient and Modern Concept of 22 Śrutis Explained in Bharata’s Nātyaśāstra**” by Gauri Kulkarni, explores the evolution of the concept of **22 śrutis (microtones)** in Indian music. Ancient theorists like Bharata, Abhinavagupta, and Dattilam describe śrutis as subtle auditory intervals foundational to melodic structure. Modern scholars such as Vishnu Narayan Bhatkhande and Dr. Vidyadhar Oke reinterpret these microtones through acoustics and frequency-based systems. The article highlights continuity between ancient intuition and modern analytical precision, underscoring the enduring relevance of śrutis in classical music.

The organizers of this Memorial Symposium had been variously connected with Thomas Burke in explorations of practical applications of literature, language, music and grammar through text and speech. We hope the volume symbolizes the efforts to explore the nuances in practice while studying the classics.

December 3, 2025

**Editors**

# The *–la* Suffix Across Sanskrit and Prakrit: A Reassessment of Its Origin and Function

Kushagra Aniket

Rudra Vikrama Srivastava

## Abstract:

This paper examines the underappreciated yet widespread *–la* suffix in Sanskrit and Prakrit. While classical grammarians such as Pāṇini have accounted for some *–la* suffixes, their explanation is incomplete. Numerous words ending in *–la*—such as *ekala*, *vṛṣala*, and *bahula*—fall outside the scope of Pāṇini’s *sidhmādi-gaṇa*, even though they share structural and semantic traits. Evidence from pre-Pāṇinian texts suggests the antiquity and productivity of this formation.

This paper proposes that the *–la* suffix originated in *Prakrit* as a diminutive or self-contained semantic marker, similar to the Sanskrit *–ka* suffix, and was later naturalized into Sanskrit either by direct borrowing or transformation. This suffix continues to be used in modern Indo-Aryan languages, especially in personal and community names. The paper argues for acknowledging *–la* as a semantic suffix with intrinsic value, not just a morphological relic. It also suggests viewing the *sidhmādi-gaṇa* as a pattern-based rather than fixed list, allowing for a more comprehensive approach to word formation and etymology.

## The Traditional Grammatical Account

The *-la* suffix represents an underexplored but morphologically significant feature of Sanskrit word formation. Pāṇini addresses certain *-la* formations through rules like *sidhmādibhyaśca* (Aṣṭādhyāyī 5.2.97), which stipulates that words listed in the *sidhmādi-gaṇa*<sup>1</sup> can take a *lac*-suffix to denote possession of an object or quality.<sup>2</sup> Words such as *sidhmala*, *māṁsala*, and *jaṭāla* are explained through this rule.

However, this rule and its associated *ākṛti-gaṇa* (word list) are limited in scope. Numerous words bearing *-la* endings do not fall within the *sidhmādi-gaṇa*. These include the word *ekala*, which appears in the *Chāndogya Upaniṣad* (3.11.1).<sup>3</sup> They also include many commonly attested words such as *bahula* (used frequently by Pāṇini), *vṛṣala* (used famously to address Chandragupta Maurya in the *Mudrā-Rākṣasa*), *kuntala*, and *vatṣala*.

For some words that do not fall within the *sidhmādi-gaṇa*, the presence of *-la* ending is explained through another derivation in

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<sup>1</sup>This list includes the following words: 1. *sidhmá*, 2. *gaṇu*, 3. *maṇi*, 4. *nābhi*, 5. *bīja* (*jīva*), 6. *vīnā*, 7. *kṛsna*, 8. *nispāva*, 9. *pāṁsu*, 10. *pārśva*, 11. *parśū* (*paraśu*), 12. *hanu*, 13. *saktu*, 14. *māṁsa*, 15. *pārṣṇi-dhamaniyo dīrghaś ca* (*gaṇa-sūtra* 126 applies to *pārṣṇi* and *dhamani*), 16. *vāta-danta-bala-la lāṭa-nām ūn ca* (*vāta*, *danta*, *bala*, *lalāṭa*, and *gala*), 17. *jaṭā-ghaṭā-kaṭā-kalāḥ* (*gaṇa-sūtra* 127 applies to *jaṭā*, *ghaṭā*, *kaṭā*, and *kalā*), 18. *parṇa*, 19. *udaka*, 20. *prajñā*, 21. *sakthi* (*saskhi*), 22. *karṇa*, 23. *sneha*, 24. *śīta*, 25. *śyāma*, 26. *piṅga*, 27. *pitta*, 28. *puṣka* (*śuṣka*), 29. *pr̥thu*, 30. *mṛdu*, 31. *maṇju*, 32. *maṇḍa*, 33. *patra*, 34. *caṭu*, 35. *kapi*, 36. *gaṇḍu* (*kaṇḍu*), 37. *granthi*, 38. *śrī*, 39. *kuśa*, 40. *dhārā*, 41. *varṣman*, 42. *pakṣman*, 43. *śleṣman*, 44. *peṣa*, 45. *niśpād*, 46. *kuṇḍa*, 47. *kṣudra-jantū-patāpa-yoś ca* (*gaṇa-sūtra* 129 applies to *yūkāla*, *maṭkikāla*, *vicarcikāla*, *vipādikāla*, and *mūrcchāla*), 48. *gaṇḍa*, 49. *saṁjñā*.

<sup>2</sup>*astyarthe* or *matvarthe*

<sup>3</sup>*atha tat ūrdhva udetya naivodetā nāstametāikala eva madhye sthātā tad eṣa ślokah* (“Then, having risen above that (region), it neither rises nor sets; it stands alone in the middle. Concerning that, this is the verse”)

later grammatical treatises. In this derivation, the word (e.g., *bahula*) is derived through the verb root *lā* (“to take”) *viz.* *bahulām lāti ādatte*, *i.e.*, “takes many.” However, this derivation seems contrived, as the word *bahula* appears to have the same meaning as *bahu* (*i.e.*, “many” or “abundant”).<sup>4</sup> Similarly, *yugala* (“duo” or “pair”) has the same meaning as *yuga* but has been explained using the *lāti* derivation.<sup>5</sup>

The case of *kuśala* has often been commented upon. This word appears in the *Śatapatha Brāhmaṇa* in the sense of “skilled.”<sup>6</sup> However, *kuśala* also means “well-being” or “auspiciousness” and in this sense, its adjectival form *kuśalin* is well-attested in epic literature. Since *kuśa* is included in the *sidhmādi-gaṇa*, the word *kuśala* can be interpreted as “one who possesses *kuśa* grass.” Alternatively, *kuśala* can be derived through *kuśān lāti*, *i.e.*, “one who takes *kuśa* grass.” However, neither explanation adequately captures the full semantic scope of *kuśala*, which typically means either “skilled” or “auspicious.”

Other words outside the *sidhmādi-gaṇa* also suggest no evidence of a “taking” relationship. Instead, these examples demonstrate that the *lāti* explanation is clearly retrofitted and semantically strained when applied to the full gamut of *-la* formations.

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<sup>4</sup>*bahulām bahu* (*Amarakośa* 3.1.62)

<sup>5</sup>*yugulām yugam* (*Amarakośa* 2.5.41)

<sup>6</sup>The *Śatapatha Brāhmaṇa* uses the term *kuśala* in the sense of “skilled” or “competent” in three closely related ritual contexts (11.4.2.1, 4, 13), each prefaced with the phrase *taddhāitadeke kuśalā manyamānāḥ* (“some, thinking themselves skilled...”). In each case, the text critiques ritualists who deviate from correct procedure under the illusion of expertise.

## Towards a Prakrit Connection

The occurrence of *ekala* in the *Chāndogya Upaniṣad* is noteworthy, as it suggests the pre-Pāṇinian origin of the suffix, with Sanskrit grammar attempting to accommodate its usage post-hoc.<sup>7</sup> In the Upanishadic context, the word *ekala* seems to emphasize the singularity of the sun.<sup>8</sup> This indicates the semantic usage of the *-la* as a marker of intensity.

Another example of pre-Pāṇinian usage of the *-la* ending is *kanyalā* (“little girl”), which appears in the *Atharvaveda* (5.5.3, 14.2.52)<sup>9</sup> and is equivalent to *kanyakā* (attested in epic literature). Both *kanyalā* and *kanyakā* are diminutives of *kanyā* (“girl” or “daughter”).

The Prakrit languages provide crucial evidence for the diminutive usage. In Prakrit, *-la* appears widely as a diminutive or intensifying suffix, much like the *-ka* suffix<sup>10</sup> in Sanskrit. Particularly illustrative is the case of *navala* (“new, novel”), a form found not only in Prakrits but also in modern Indo-Aryan languages (including Hindi, Gujarati, and Marathi). In these languages, *navala* retains the meaning of the word *nava* (*i.e.*, “new” or “novel”). Such usage cannot be neatly explained within traditional Sanskrit grammar, because (i) *nava* is not included in the *sidhmādi-gaṇa* and (ii) the *lāti* derivation (*navam lāti i.e.*, “it takes something new”) does not appropriately convey the meaning of the word *navala*. However, the

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<sup>7</sup>The word *ekala* is also found in later Sanskrit literature, including the *Bhāgavata Purāṇa* (5.7.12) (*tasmin vāva kila sa ekalah*).

<sup>8</sup>atha tat ūrdhva udetya naivodetā nāstametāikala eva madhye sthātā tad eṣa ślokaḥ (“Then, having risen above that (region), it neither rises nor sets; it stands alone in the middle. Concerning that, this is the verse.”)

<sup>9</sup> vṛṣānyantīva kanyalā

<sup>10</sup> Aṣṭādhyāyī 5.4.29: yāvādibhyah kan

word can be explained through the *-la* suffix in Prakrit. This raises the possibility that Sanskrit borrowed *-la*-forms from Prakrits.

## A Revised Explanation

The Pāṇinian concept of an *ākṛti-gāṇa*, as a pattern-based, not exhaustive, group, is crucial. Under this model, membership is not fixed but determined by structural and semantic behavior. As such, the *Gaṇapāṭha* lists only a selection of words that fall under the *sidhmādi-gāṇa*, while leaving room to include other words which are seen undergoing the same operation (*viz.*, the addition of the *lac*-suffix).

Words such as *ekala*, *vatṣala* (“affectionate”), *kuntala* (“locks of hair”), and others, though not explicitly listed in the canonical *sidhmādi-gāṇa*, conform to its pattern and could potentially be recognized as additional members of the group. Modern lexicons have accepted some of these words within the *sidhmādi-gāṇa*.<sup>11</sup> However, the Pāṇinian *lac*-suffix is used in the sense of possessing, but not in the sense of the base word itself. Therefore, it is inadequate to explain several lexical pairs, including those that are covered by the *sidhmādi-gāṇa*. An example is *mṛdu*, which is included in the word group, but is used interchangeably with its derivative *mṛdula*.

Based on the above examples, one can posit a *-la* suffix that is borrowed from the Prakrit languages and is analogous to the well-established *-ka* suffix in Sanskrit. The idea of a *-la* suffix has remained latent in Sanskrit, with sporadic recognition in literature. A late acknowledgement comes from the Kashmiri *pandita* Rājānaka Ratnakanṭha (c. 17th century), who in his commentary on Jagaddhara Bhaṭṭa’s *Stutikusumāñjali*, cites the principle of *svārthe*

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<sup>11</sup> *Vatsala* is derived as *vatsa* + *lac* by Macdonell, Wilson, and the *Śabdakalpadruma*.

*lah* twice to equate: (a) *ekalā* and *ekā* (30.63) and (b) *dhavala* and *dhava* (31.16).

When borrowed into Sanskrit, the *-la* suffix is either retained as is or undergoes a transformation (e.g., *la* ⇒ *ra*). An example of this *la* ⇒ *ra* transformation is *madhu* ⇒ *madhula* ⇒ *madhura*, where the intermediate form *madhula* (“giver of sweetness”) is attested in *Rgveda* (1.191.10-11)<sup>12</sup>. Similarly, the words *mṛdu*, *mṛdula*, *mṛdura*, and *mṛduka* are used interchangeably to denote “soft” or “gentle.” These examples highlight how a suffix originally serving a diminutive or intensifying function may later be rationalized by grammarians seeking consistency with their rule systems.

### ***Bahula: Same as Bahu?***

The word *bahulam* (“frequently,” “optionally,” or “in many cases”) appears 39 times in the *Aṣṭādhyāyī*.<sup>13</sup> Among these, 14 sūtras contain the phrase *bahulam chandasī*, indicating allowance for alternative or irregular forms specifically in Vedic usage.<sup>14</sup> This pattern led to the development of the *bāhulaka* principle, discussed in the *Mahābhāṣya* (on *Aṣṭādhyāyī* 3.1.85 and 3.3.1), whereby derivational exceptions to grammatical rules are permitted to arrive

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<sup>12</sup> *so cin nu na marāti no vayam marāmāre asya yojanam hariṣṭhā madhu tvā madhulā cakāra.* Sāyaṇa, in his commentary, interprets *madhulā* as *madhudātrī* (giver of sweetness or nectar), *nirviṣṭikartrī* (that which neutralizes poison), and *madhuvidyā* (a mystical knowledge associated with the transformation of poison into nectar).

<sup>13</sup> These sūtras in the *Aṣṭādhyāyī* are: 2.1.32, 2.1.57, 2.3.62, 2.4.39, 2.4.73, 2.4.76, 2.4.84, 3.1.34, 3.1.85, 3.2.81, 3.2.88, 3.3.1, 3.3.108, 3.3.113, 4.1.148, 4.1.160, 4.3.34, 4.3.37, 4.3.99, 5.2.122, 5.4.56, 6.1.34, 6.1.70, 6.1.133, 6.1.178, 6.2.199, 6.3.14, 6.3.63, 6.3.122, 6.4.75, 6.4.128, 6.4.157, 7.1.8, 7.1.10, 7.1.103, 7.3.97, 7.4.78, 8.3.52, and 8.4.28.

<sup>14</sup> *Aṣṭādhyāyī* 2.4.39, 2.4.73, 2.4.76, 3.2.88, 5.2.122, 6.1.34, 6.1.70, 6.1.133, 6.1.178, 6.2.199, 6.3.63, 6.4.75, 7.1.8, 7.1.10

at certain forms, due to observed frequency, Vedic tradition, or established convention.

Pāṇini uses *bahulam* as an indeclinable, meaning “often” or “frequently”. The word also appears in Yāska’s *Nirukta* (2.24, 3.18, 7.3-4, 11.2) in the same sense.<sup>15</sup> If seen as an indeclinable, it is not surprising that neither Yāska nor Pāṇini attempted to derive the word. Pāṇini (*Aṣṭādhyāyī* 4.3.34) also mentions a special usage of *bahula*: it is used to describe someone born under the asterism *Kṛttikā* (also called *Bahulā*). The reference to *Bahulā* as a name of the asterism reminds one of the Vedic usage of *bahula*. The word *bahula* occurs 20 times in the *Rgveda*. In each instance, it functions as an adjective meaning “large”, “wide” or “abundant.”<sup>16</sup> For example, *bahula* is used as an adjective for the earth (in the sense of “vast”)<sup>17</sup>, wealth (in the sense of “abundant”)<sup>18</sup> and rays (in the sense of “numerous”)<sup>19</sup>. The Upanishadic usage of the word is similar: *bahula* appears twice in the *Chāndogya Upaniṣad* (5.15.1, 5.18.2) as an adjective in the sense of “abundant.”<sup>20</sup> While the adjectival usage of *bahula* was replaced by an indeclinable in Yāska and Pāṇini, it continued in the epic literature and became predominant in classical Sanskrit.

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<sup>15</sup> For example, see *Nirkuta* (7.4) *asti hy ācāro bahulam loke* (“Indeed, such conduct is widespread in the world.”)

<sup>16</sup> *Rgveda* 1.54.9, 1.185.7, 1.189.2, 2.1.12, 3.1.19, 3.31.19, 3.53.21, 4.23.10, 5.55.9, 6.19.3, 6.51.5, 7.76.3, 9.72.8, 9.107.21, 10.42.5, 10.42.8, 10.48.10, 10.73.1, 10.101.8, and 10.178.2.

<sup>17</sup> *Rgveda* 1.185.7

<sup>18</sup> *Rgveda* 3.1.19

<sup>19</sup> *Rgveda* 6.19.3

<sup>20</sup> *eṣa vai bahula ātmā vaiśvānaro yaṁ tvam ātmānam upāssa tasmāt tvam bahulo’si prajayā ca dhanena ca* (*Chāndogya Upaniṣad* 5.15.1), *sandheho bahulo bastiḥ eva rayiḥ* (*Chāndogya Upaniṣad* 5.18.2). In the former, *bahula* also conveys the sense of “accompanied with.”

However, despite its frequent usage, a satisfactory derivation of *bahula* has not been offered. One straightforward way to account for the word within the Pāṇinian framework would be to include *bahu* in the *sidhmādi-gāṇa*, in which case *bahula* would mean “one possessing *bahu*,” a sense consistent with traditional usage.<sup>21</sup> Alternatively, if *bahula* is to be regarded as equivalent in meaning to *bahu*, then a derivation through the *-la* suffix would be more appropriate.

## Personal and Community Names in Inscriptions

The names of prominent historical figures, such as Kapila<sup>22</sup>, the Sāṃkhya philosopher who flourished circa 6th-7th century BCE, and *Rahula* (the Buddha's son) and places, such as Sirihala, demonstrate the widespread usage of the *-la* suffix in naming practices.

Names with the *-la* suffix are common in epigraphical records, particularly in the northern and western parts of the Indian subcontinent from very early periods. The votive label inscriptions at Sanchi and Bharhut have numerous such examples from the 2nd century BCE, including Samghila, Nāgila, Yakhila, Kanhila, and Mahila. Some of these names such as Samghila are Buddhist in nature, whereas others such as Nagila are related to Naga worship.

The masculine name Mahila is interesting: it is the name of a Buddhist monk in a 2nd-century BCE votive inscription from Bharhut. The word is likely derived by adding the *-la* suffix to the word *mahi*, which appears in the Vedas (e.g., *Rgveda* 1.130.7) in the

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<sup>21</sup> This derivation of *bahula* would be consistent with the usage of the word by the *Manusmṛti* (4.60), where the adjective *vyādhī-bahule* (“afflicted by widespread disease”) is used for *grāma* (“village”).

<sup>22</sup> *Kapila* appears to be derived from *kapi* or monkey and refers to the animal's reddish-brown or tawny colour.

sense of “great.” The word *mahi* is related to the Vedic feminine noun *mahī* meaning “earth.” The post-Vedic feminine form *mahilā* appears as *mahiḍā* in Ashokan Prakrit<sup>23</sup> and subsequently as the standard word for “woman” in Indo-Aryan languages.

Three centuries later, the Kharosthi inscriptions of Mathura (1st century CE) mention a *Sarvāstivādin* monk named Budhila. Other votive inscriptions in Kharosthi from the north-western Indian subcontinent mention names such as Simhila, Vayula, and Takhalā (a female donor). Names with *-la* suffix are also found in Gupta era inscriptions. The *Prayāga Praśasti* mentions a northern king named Matila who was defeated by Samudragupta. This name can be derived from Matideva or Matidatta. The Mandasor inscription of 467 CE was drafted by one Ravila. The name is derived from Ravidatta. The Damodarpur copper-plate inscription from the reign of Budhagupta mentions a scribe and a merchant named Kapila. Somila,<sup>24</sup> the grandfather of a Jain donor is mentioned in the Kahaum stone pillar inscription of Skandagupta.

Some of these Gupta-era names can be explained within the Pāṇinian framework. According to the *Aṣṭādhyāyī* (5.3.78–79, 83–84), both the *-ika* and *-ila* suffixes may be added to names such as *Yajñadatta*, *Bhānudatta*, and *Devadatta*, resulting in shortened forms like *Yājñika* (or *Yājñila*), *Bhānuka* (or *Bhānula*), and *Devika* (or *Devila*). Similarly, *Kumārila*, the name of the famous Mīmāṃsā philosopher, may be derived as a diminutive of *Kumāradatta*.<sup>25</sup> These examples illustrate that the *-la* and *-ka* suffixes can function in parallel, often conveying a sense of diminutiveness or identity.

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<sup>23</sup> Girnar Rock Edict 9C

<sup>24</sup> Likely derived from Somadatta.

<sup>25</sup> *Aṣṭādhyāyī* 5.3.83

These naming practices persisted into the early medieval era: a Kalachuri king from the 10th century was named Kokalla<sup>26</sup>; the daughter of the last sovereign Vaghela king Karna Deva II was named Devala-devi and a female religious donor of the same name is also known from Chandela inscriptions in the 13th century. Today, a variety of community names, such as Bamsala, Mittala, Nāgala, Singhala, Kamsala, Kucchala, and Bhaṇḍala, continue to fit this pattern. These names suggest a continuity of the *-la*-formative tendency into medieval and modern vernaculars.

## Śakuntalā: A Little Bird

Tripathi (1970) discusses the etymology of Śakuntalā, which offers a compelling case for reevaluating the *-la* suffix as a semantic and productive morpheme. While traditional grammarians derive the word from the root *lā* (“to take”) in the sense of “taken in” or “protected” by birds (*śakunta*), this explanation depends on a forced *karmadhāraya* compound. Instead, Tripathi has shown that the word more plausibly arises from a base *śakunta* (bird) + the diminutive suffix *-la*, meaning simply “small bird”—a common pet-name or endearment for a young girl.

According to the *Mahābhārata*, the infant Śakuntalā was abandoned by her celestial mother Menakā and left in a forest, where she was nurtured by birds (*śakuntas*). Discovered by sage Kaṇva, she was named Śakuntalā, meaning “one protected by birds.”<sup>27</sup> However, the *Mahābhārata*’s narrative of Śakuntalā being cared for by birds appears to be a backformation—a myth developed to rationalize an already existing name.

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<sup>26</sup> Likely related to *koka*, from which the word *kokila* (the cuckoo bird) is also derived.

<sup>27</sup> *nirjane ca vane yasmāc chakuntaiḥ parirakṣitā / śakuntaleti nāmāsyāḥ kṛtam cāpi tato mayā* (*Mahābhārata* 1.66.14)

Tripathi points out that the suffix *-la* functions much like *-ka* in Sanskrit (as in *bālaka* from *bāla*), and closely resembles Indo-European diminutives such as Latin *-ella* (e.g., *tabella*, “small tablet”) or German *-lein* (e.g., *Fräulein*, “young lady”). Moreover, there is a parallel Sanskrit word for *śakuntalā*: *śakuntikā* (“small bird”), which is attested in the *Rgveda* (1.191.11). The word *śakuntikā* is used for a small pet bird, in the *Uttararāmacarita* (1.45), reinforcing the diminutive reading of *Śakuntalā*. If *śakuntikā* and *śakuntalā* coexist, and if *-ka* and *-la* are interchangeable diminutives, the conclusion follows naturally: *Śakuntalā* is “little bird.”

This interpretation is strengthened by phonological arguments as well. Tripathi argues that *la* and *ra* were fluid in early Indo-Aryan phonology and that the Proto-Indo-European diminutive *-los* survives in various languages in *-la* or *-li* forms. Thus, *Śakuntalā* may represent an extant and semantically transparent instance of a once-productive *-la* diminutive in Sanskrit.

### ***Rāhula: An Endearment for Rāhu***

The name *Rāhula* offers another instructive example of the *-la* suffix. In early Buddhist literature, notably the *Apadāna* commentary, *Rāhula*, the son of Siddhārtha Gautama (the Buddha), is said to have been named by his father upon hearing of his birth, uttering the words, “*Rāhu jāto, bandhanam jātam*” (“A rāhu [obstacle] is born, a bondage has arisen”). The commentator interprets this etymologically: just as the celestial demon Rāhu obstructs the radiance of the sun and moon, this newborn son, too, had arrived as an impediment to Siddhārtha’s spiritual renunciation. This interpretation implies that *Rāhula* means “one who binds,” drawing from *Rāhu* (the mythological eclipsing demon) and employing the *-la* suffix in the self-sense or as a diminutive.

Aśvaghoṣa's *Buddhacarita* (2.46) offers a different, more poetic derivation: "Unto Śauddhodana (the son of Śuddhodana, *i.e.*, Siddhārtha Gautama), a son was born whose face resembled that of Rāhu's enemy (the moon); he was named Rāhula."<sup>28</sup> Nonetheless, Aśvaghoṣa's verse still affirms the association of the name with *Rāhu*. Given the setting of the Buddha's life, it is plausible that *Rāhula* emerged within a vernacular environment where *-la* had semantic autonomy. The derivation *Rāhu + la* is thus structurally parallel to other *-la* formations and confirms the suffix's productive capacity in names.

### ***Kosala: The Land of Kuśa***

The word *Kosala*, commonly known as the name of the ancient kingdom ruled by the Ikṣvāku lineage, offers a revealing case study of how the *-la* suffix functions across semantic and historical layers. The earliest textual attestation of the term appears in the *Śatapatha Brāhmaṇa* (1.4.1), where *Kosala* refers not only to a region but to a warrior clan, akin to the Videhas. According to that text, the Kosalas are said to descend from the sage Māthava, and their settlement later gave its name to the geographical area west of the Sadānīrā River (*Śatapatha Brāhmaṇa* 8.5.4). The *Praśna Upaniṣad* (6.1) also refers to Āśvalāyana as a Kośala, suggesting the use of the term as a tribal or dynastic marker beyond the territorial sense.

The derivation of *Kośala* has been debated in grammatical and etymological traditions. While the *Uṇādi-sūtra* (1.106) *vṛṣādibhyaś cit* has been interpreted by commentators as including *Kośala* via an affixation of *-kala* to a base like *kuśa*, this explanation is incomplete without considering the *-la* suffix. A more plausible derivation begins with *kuśa* (the sacred grass), leading to *kuśala* ("possessing *kuśa*"), and then to *kauśala* ("a region marked by *kuśa* grass", perhaps a symbol of prosperity) via the *an* suffix denoting

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<sup>28</sup> Śauddhodane rāhu-sapatna-vaktro jajñe suto rāhula eva nāmnā

relationship or domain. The name of the kshatriya family of the region appears as *Kauśala* in the *Lalitavistara*.<sup>29</sup>

From *kauśala*, Prakrit phonological tendencies such as the loss of diphthongs reduce the form to *Kosala*, which is then borrowed back into Sanskrit either directly (*Kosala*) or with partial Sanskritization as *Kośala*. This process mirrors the Prakrit origin and return pathway proposed for other *-la* suffix forms.

Crucially, the usage of *Kosala* (rather than *Kośala*) dominates Vedic, Sūtra, and early epic literature, suggesting that *Kosala* is the older form and potentially Prakritic in derivation.<sup>30</sup> That the Sanskrit grammatical tradition later attempted to standardize it to *Kośala* or derive it back from *kauśala* underscores the linguistic discomfort with unexplained *-la* forms. Recognizing *Kosala* as a valid *-la* formation of Prakritic origin resolves the etymological difficulty and reinforces the historical utility of the *-la* suffix, especially in forming ethnonyms and place-names.

### ***Devala: From Deva to Temple Priest***

The word *devala*, though later associated with idol-attending priests, appears to have originally shared semantic ground with *deva*. In

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<sup>29</sup> *apare tvāhuḥ — idam punaḥ kauśalakulam mahāvāhanam ca mahāparivāram ca mahādhanam ca. tatpratirūpam asya bodhisattvasya garbhapratisamsthānāyeti. apare'py āhuḥ — tad apy apratirūpam. tat kasmād hetoḥ? tathā hi — kauśalakulam mātaṅgacyutupapannam na mātrpitrśuddham. hīnādhimuktikam na ca kuloditam na cāparimitadhanaratnanidhisamutthitam. tena na tatpratirūpam* (Lalitavistara 3)

<sup>30</sup> For earliest textual attestations of *Kosala* and its kings, see the *Śatapatha Brāhmaṇa* 1.4.1.1, 8.5.4, 13.5.4.4 (mentioning Kośala-Videha and the Sadānīrā boundary), *Mahābhārata* (1.66.14, 1.177.20; 2.18.28, 2.27.1; 3.58.22, 3.71.23, 3.75.3; 6.43.14, 6.47.15; 7.10.15, 7.20.18, 7.22.47, 7.23.7; 8.4.21, 8.5.19, 8.8.19, 8.30.60, 8.30.79; 12.83.6, 12.105.32; 13.6.32, 44.37, 151.49), *Śāṅkhāyana Śrauta Sūtra* 16.9.13, 16.11, 16.29.5 (ritual references to Kośala rulers), *Chāndogya Upaniṣad* 4.10.1, 4.14.1 (mentioning *Upakosala*), and *Praśna Upaniṣad* (6.1).

later Vedic literature, *Devala* appears as a name for sages. The *Kāthaka Samhitā* (22.11) refers to a *Rṣi* called Devala alongside Asita. *Daivala*, a patronymic of Devala, also appears in the *Pañcavimśa Brāhmaṇa* (14.11.18) as a name of Asita and the *Āśvalāyana Grhyasūtra* (12.14.7–8). The sages Asita and *Devala* are frequently mentioned together in the *Mahābhārata* (6.32.13, 9.49.22). Subsequently, the name *Devala* was applied to a variety of sages in the *Mahābhārata*.

The *Uṇādi-sūtra* (1.106) *vṛṣādibhyaś cit* derives *Devala* as *deva* + *kalac*. Commentators such as Śvetavanavāsin ascribed positive meanings to the word, such as “one who shines through knowledge.” However, by the time of the *Manusmṛti* (3.152), *devalas* referred to temple attendants who subsisted on offerings, *i.e.*, brahmins of lower rank, to be avoided at *yajñas* and *śrāddhas*.<sup>31</sup> The *Amarakośa* (2.10.11) also defines *devala* as one who lives off the worship of deities.<sup>32</sup> Based on this later usage, the word *devala* was explained as *devam lāti* (“one who takes or receives the deity”).

Two other words seemingly related to *deva* are *devara* and *devaka*. Over time, these words evolved in different directions. While *devara* evolved into a kinship term meaning “husband’s younger brother,” *Devaka* appeared as the name of various *kṣatriya* kings. Notably, at least one medieval lexicon, the *Śabdaratnāvalī* of Mathureśa (as cited in *Śabdakalpadruma* and *Vācaspatya*) lists *devara* as one of the synonyms of *devala*, due to the equivalence of *la* and *ra* (*larayorabheda*). However, unlike *devala*, neither *devara* nor *devaka* are used in a pejorative sense. This semantic divergence between these three words illustrates how originally equivalent forms can split in meaning over time.

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<sup>31</sup> The *Mahābhārata* (12.77.8) also refers to *devalas* as degraded Brahmins.

<sup>32</sup> *devājīvastu devalah*

## ***Aslīla: From the Absence of Śrī to Vulgarity***

The word *aslīla*, commonly translated as “indecent,” “vulgar,” or “offensive,” offers another instructive case of the role of the *-la* suffix. Etymologically, *aslīla* can be traced to *a-* + *ślī* + *la*, where *ślī* is a phonological variant of *śrī* (“prosperity”, “grace”, “beauty”). Thus, *a* + *ślī* + *la* becomes *a-śrīla*, or “one devoid of *śrī*.” Traditional lexicons interpret *ślīla* as equivalent to *śrīla* (“prosperous, fortunate, graceful”) with the *-la* suffix denoting possession (*śrī* + *la* = *śrīla*).<sup>33</sup> The negated form, *aslīla*, therefore means “lacking *śrī*”, *i.e.*, lacking prosperity, elegance, or beauty. Over time, this literal meaning of *aslīla* has shifted toward the moral and aesthetic domain, taking on the sense of “coarse,” “unrefined,” and “indecent.”

## **Conclusion**

The *-la* suffix, while underappreciated in traditional Sanskrit grammar, emerges upon closer inspection as a productive marker of nuance in Indo-Aryan languages. While classical grammarians addressed certain instances of *-la* formations, many widely attested words ending in *-la* fall outside the traditional explanations. Examples such as *ekala*, *vṛṣala*, and *kuśala* exhibit both structural consistency and semantic coherence, yet remain inadequately treated within established grammatical frameworks. This paper proposes that the *-la* suffix is older and more widespread than has been assumed, and may originate in Prakrit as a diminutive or intensifying suffix, which Sanskrit later absorbed with varying degrees of adaptation. Recognizing *-la* as originally a self-contained or intensifying suffix better explains the empirical data from Sanskrit, Prakrit, and modern Indo-Aryan languages.

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<sup>33</sup> *lakṣmīvān lakṣmaṇah śrīlah śrīmān* (*Amarakośa* 3.1.14)

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# Semantic Variations of ‘*bhāva*’ and ‘*kriyā*’ in Pāṇini’s Sūtras: Synonymous or Distinct?

Abhijit Mandal

## Abstract:

The primary objective of this research is to examine the nuanced meanings of the terms *bhāva* and *kriyā* in Pāṇini’s *Aṣṭādhyāyī*, which many commentators have interpreted as synonymous. By analyzing their occurrences in different sūtras and the interpretations of key grammarians such as Patañjali, Bhaṭṭoji Dīkṣita, and the *Kāśikā* commentary, this study aims to clarify why Pāṇini used both terms separately despite their apparent similarity.

This research holds significant relevance for the scholarly study of Sanskrit grammar and linguistic traditions. Pāṇini’s grammatical framework is foundational not only for Sanskrit but also for other classical Indian languages. Understanding the precise distinctions between *bhāva* and *kriyā* contributes to a deeper comprehension of how action and process are expressed in Sanskrit syntax, semantics, and morphology.

Key-words: *Aṣṭādhyāyī*, *bhāva*, *kriyā*, *Paryāyaśabda*, *lāghava*, *mātrā*, *pada*.

## Introduction:

The present study emerges from a critical engagement with foundational questions in the interpretation of Pāṇinian grammatical doctrine. During an analytical reading of the *Kāraka-prakaraṇa* section of the *Vaiyākaraṇasiddhāntakaumudī*, attention was drawn to the sūtras “*hṛkro ‘nyatarasyām*” (*Aṣṭādhyāyī*, 1.4.53) and “*parikrayaṇe sampradānamanyatarasyām*” (*Aṣṭādhyāyī*, 1.4.44). Traditional commentators interpret the term *anyatarasyām* as

synonymous with *vā* or *vibhāṣā*, leading to a philological and structural query: if the three terms are truly synonymous, why did Pāṇini not opt for the shorter alternatives “*hṛkror vā*” or “*parikrayaṇe sampradānām vā*,” thereby aligning more closely with the ideal of *sūtra-lāghava* (conciseness) that underpins *sūtra*-style literature?

This question gains further complexity when viewed through the lens of Nāgeśa Bhaṭṭa’s *paribhāṣā*: *paryāyaśabdānām lāghavagauravacarcā nādriyate* (*Paribhāṣenduśekhara*, No. 124), which asserts that, in the case of synonymous words, considerations of brevity (*lāghava*) or prolixity (*gaurava*) are not regarded as determinative in the compositional choices of the *sūtrakāra*. On this basis, the use of *anyatarasyām* rather than *vā* is typically explained.

The issue, however, resurfaces in the interpretation of the *sūtra* “*yasya ca bhāvena bhāvalakṣaṇam*” (*Aṣṭādhyāyī*, 2.3.37). In their respective commentaries, Jayāditya (in the *Kāśikāvṛtti*) and Bhaṭṭojo Dīkṣita (in the *Vaiyākaraṇasiddhāntakaumudī*) interpret *bhāva* as synonymous with *kriyā*. The *Kāśikā* explicitly glosses: *bhavaḥ kriyā. yasya ca bhāvena yasya ca kriyayā...*, while Bhaṭṭojo observes: *yasya kriyayā kriyāntaraṇaḥ lakṣyate tataḥ saptamī syāt*—thus equating *bhāva* with *kriyā* both lexically and functionally.

This interpretative equivalence invites a crucial grammatical reconsideration: if *bhāva* and *kriyā* are truly interchangeable, could the term *bhāva* be employed in place of *kriyā* in the *sūtra* “*upasargāḥ kriyāyoge*” (*Aṣṭādhyāyī*, 1.4.59)? Would such a substitution preserve the syntactic and semantic integrity of the original formulation?

To address these concerns, this article is organized into two principal sections. The first investigates the nuanced distinctions between the terms *anyatarasyām*, *vā*, and *vibhāṣā*, questioning their

presumed synonymy. The second section undertakes a critical semantic and functional analysis of *bhāva* and *kriyā*, with attention to both textual usage in the *Aṣṭādhyāyī* and the interpretative frameworks of the major commentarial traditions. Through this inquiry, the study aims to re-evaluate the assumption of synonymy and explore the deeper semantic architecture that underlies Pāṇinian grammar.

Upon closer analysis, it became clear that such a substitution would not be valid, as the term ‘*kriyā*’ in this context specifically refers to *tiṇanta* and *kṛdanta* forms—grammatical categories that the word ‘*bhāva*’ does not encompass. This distinction compelled me to examine the issue more deeply, ultimately leading to the development of the present paper.

The article is organized into two parts.

**Part I** explores the interpretational nuances and distinctions among ‘*anyatarasyām*’, ‘*vā*’, and ‘*vibhāṣā*’.

**Part II** focuses on the semantic scope and grammatical deployment of ‘*kriyā*’ and ‘*bhāva*’, questioning whether these terms can be considered synonymous in the framework of Pāṇini’s grammatical system.

During the course of this inquiry, I encountered Paul Kiparsky’s seminal work *Pāṇini as a Variationist*, in which he argues convincingly that ‘*anyatarasyām*’, ‘*vā*’, and ‘*vibhāṣā*’ are not synonymous. This reinforced my growing conviction that ‘*kriyā*’ and ‘*bhāva*’, though occasionally treated as equivalent by some commentators, are in fact semantically and functionally distinct. Pāṇini’s deliberate usage of these terms in separate *sūtras* and contexts provides further support for this distinction.

## The Features of *Sūtra* Composition:

Scholars of Sanskrit grammar have identified six essential qualities<sup>1</sup> that an ideal *sūtra* should possess. This article primarily relates to the first of these qualities—*Alpākṣaram* (conciseness). The importance of brevity in grammatical formulation is beautifully emphasized by Nāgeśa, who states:

*"ardhamātrālāghavena      putrotsavam      manynte  
vaiyākaraṇāḥ"* (Paribhāṣenduśekhara, No. 155)  
which means: ‘Grammarians consider a reduction even  
by half a *mātrā* (mora) to be as joyous as the birth of a  
son.’

According to traditional grammatical scholarship, Pāṇini meticulously observed all six criteria of ideal *sūtra* composition in his *Aṣṭādhyāyī*. This reverence is evident in Patañjali’s *Mahābhāṣya*, particularly in his commentary on the very first *sūtra*—“*vrddhir  
ādaic*” (*Aṣṭādhyāyī*, 1.1.1). Patañjali pays profound homage to Pāṇini’s meticulousness:

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<sup>1</sup> “*alpākṣaramasandigdham sāravadvīśvatomukham/ astobhamanavadyam ca  
sūtram sūtravido viduh*”//

- *Alpākṣaram* – It should be concise, using the fewest possible syllables or letters.
- *Asandigdham* – Its meaning should be unambiguous and clearly intelligible.
- *Sāravat* – It must be substantial, conveying the essential idea without superfluity.
- *Viśvatomukham* – It should have wide applicability across various contexts.
- *Astobham* – It must be smooth and uninterrupted, free from unnecessary insertions or digressions.
- *Anavadyam* – It should be aesthetically pleasing and sonorous when spoken.

*“The master himself, a true authority, sat facing the east with a ring of kuśa grass in his hand, in a pure and secluded place, and composed the sūtras with great effort. It is unthinkable that even a single letter in the text is meaningless—let alone an entire sūtra.”<sup>2</sup>*

This assertion reinforces the notion that every word—and indeed, every syllable—used by Pāṇini was carefully chosen for its necessity and significance.

In this context, the focus of the present inquiry is on Pāṇini’s usage of the terms ‘*kriyā*’ and ‘*bhāva*’, which many commentators have interpreted as synonymous. However, I argue that these two terms are not, in fact, synonymous. I am especially grateful to Paul Kiparsky, whose work Pāṇini as a Variationist substantiates this perspective. Kiparsky writes

*Contrary to tradition, the three words (anyatarasyām, vibhāṣā, and vā) are not synonymous, but indicate different preferences among optional variants.”*  
(Kiparsky, 1)

Similarly, I contend that ‘*kriyā*’ and ‘*bhāva*’, though sometimes treated interchangeably by commentators, are used by Pāṇini in distinct grammatical contexts and are semantically non-identical.

### **Usage in the *Aṣṭādhyāyī*:**

The term *kriyā* appears seventeen times across sixteen sūtras, whereas *bhāva* appears twenty seven times in twenty six sūtras.

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<sup>2</sup> “*pramāṇabhūta ācāryo darbhapavitra pāṇih śucāvvaakāśe prāṇmukha upaviśya mahatā prayatnena sūtrāṇi praṇayati sma. tatrāśakyam varṇenāpy anarthakena bhavitum, kiṁ punah iyatā sūtreṇa.*” - *Mahābhāṣya*, Charudeva, p. 127.

A few examples of *kriyā*:<sup>3</sup>

- *svaritañitah kartrabhiprāye kriyāphale* (1.3.72)
- *upasargāh kriyāyoge* (1.4.59)
- *kriyārthopapadasya ca karmañi sthāninah* (2.3.14)
- *dhātorekāco halādeh kriyāsamabhīhāre yañ* (3.1.22)

Examples of *bhāva*:<sup>4</sup>

- *bhāvakarmañoh* (1.3.13)
- *tumarthāc ca bhāvavacanāt* (2.3.15)
- *yasya ca bhāvena bhāvalakṣanam* (2.3.37)

## Why *Kriyā* ≠ *Bhāva* ?

A close examination of phonetic economy further supports this distinction. Consider the *mātrā* (mora) count of the two terms '*kriyā*':<sup>5</sup>

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<sup>3</sup> Uses of 'Kriyā' in *Aṣṭādhyāyī*: 1/3/72, 1/4/49, 2/3/14, 3/1/22, 3/1/42, 3/2/126, 3/3/10, 3/3/135, 3/3/139, 3/4/2, 3/4/57, 5/1/115, 5/4/17, 6/1/114, 6/2/162, 8/1/44.

<sup>4</sup> Uses of 'bhāva' in *Aṣṭādhyāyī*: 1/2/21, 1/3/13, 2/3/15, 2/3/37, 2/3/54, 3/1/66, 3/1/107, 3/1/24, 3/2/45, 3/3/11, 3/3/18, 3/3/74, 3/3/95, 3/3/98, 3/4/16, 3/3/114, 3/4/69, 4/4/144, 5/1/119, 5/4/50, 6/2/25, 6/2/150, 6/4/27, 6/4/168, 7/2/17, 8/4/10.

<sup>5</sup> In the *Yājñavalkya-śikṣā*, a verse is given to describe the measurement of syllabic mora (*mātrā*) for different sounds:  
*ēkamātrā bhaved dhrasvo dvimātrā dīrgha ucyate /*  
*trimātras tu bhavet pluto vyañjanañ cārdhamātrakam //* (verse No. 15.)

Translation: 'A short vowel (*hrasva*) is measured as one *mātrā* (unit of time), a long vowel (*dīrgha*) is measured as two *mātrās*, and a protracted vowel (*pluta*) extends to three *mātrās*. A consonant (*vyañjana*), on the other hand, is measured as half a *mātrā*'.

- $\bar{k}$  (k) = 0.5
- $\bar{\xi}$  (r) = 0.5
- $\bar{\iota}$  (i) = 1
- $\bar{\gamma}$  (y) = 0.5
- आ (ā) = 2

→ Total = 4.5 mātrās

- ‘bhāva’:

- भ (bh) = 0.5
- आ (ā) = 2
- व (v) = 0.5
- अ (a) = 1

→ Total = 4 mātrās

In their respective seventh-case forms:

- $kriyāyām = 7.5$  mātrās
- $bhāve = 5$  mātrās

If ‘*kriyā*’ and ‘*bhāva*’ were truly synonymous, Pāṇini could have economized by using the shorter form ‘*bhāve*’ in the *sūtra* “*tumunṇvalau kriyāyām kriyārthāyam*” (*Aṣṭādhyāyī*, 3.3.10),

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This verse explains the quantitative duration assigned to different phonemes in Sanskrit phonetics.

yielding the more concise: ‘*tumunṇavalau bhāve bhāvārthe*’. Yet, he chose ‘*kriyāyām*’, despite its higher mora count.

This choice reinforces the point that the two words are not synonymous in the grammatical framework of the *Aṣṭādhyāyī*. Pāṇini selected each word purposefully, according to the semantic and syntactic role it plays—‘*kriyā*’ signifying *tiñanta* and *kṛdanta* activity, and *bhāva* indicating a general state or process.

### **Arguments Supporting the Distinction between ‘*kriyā*’ and ‘*bhāva*’:**

To begin with, one might question why grammarians typically do not emphasize the reduction of *mātrās* when dealing with synonymous expressions. The rationale lies in a well-known interpretive rule (*paribhāṣā*) stated by Nāgeśa Bhaṭṭa:

“*paryāyaśabdānām lāghavagauravacarcā nādriyate*”  
(*Paribhāṣenduśekhara*, No. 124)

This means: “In the case of synonymous words, the discussion regarding brevity or prolixity is not given importance.”

This rule specifically addresses the irrelevance of *lāghava* (brevity) or *gaurava* (weightiness) when the words involved are truly synonymous. However, this presupposes the condition of synonymy. The present argument, in contrast, hinges on the assertion that ‘*kriyā*’ and ‘*bhāva*’ are not synonymous—hence, the *paribhāṣā* above does not apply.

Within the *śāstrik* tradition, the principle of brevity manifests in two principal forms:

1. *Padagata-lāghava-vyavasthā* – Brevity at the level of word-count (*pada*).
2. *Mātrāgata-lāghava-vyavasthā* – Brevity at the level of morae (*mātrā*).

### **Application of the *Padagata-lāghava-vyavasthā* in *Aṣṭādhyāyī*:**

The notion of word-based brevity concerns the number of individual words used in a *sūtra*. Patañjali addresses this form of *lāghava* in his commentary on *sūtras* such as:

- *ūkālo'j hrasvadīrghaplutah* (*Aṣṭādhyāyī*, 1. 2. 27)
- *apr̥kta ekāl pratyayah* (*Aṣṭādhyāyī*, 1. 2. 41)

In his *Mahābhāṣya* on the former *sūtra*, Patañjali explains that the purpose of defining the short vowel (*hrasva*) is to facilitate rules such as “*eca ig hrasvādeśe*” (*Aṣṭādhyāyī*, 1.1.48). Without this designation, longer expressions such as “*eca ik* becomes substituted” would need to be repeatedly stated in numerous places. Thus, a single word (*hrasvah*) saves multiple words (*padāni*), exemplifying *padagata-lāghava*.

### **Application of the *Mātrāgata-lāghava-vyavasthā* in *Aṣṭādhyāyī*:**

Nāgeśa’s use of the term *prāyeṇa* (“generally”) in reference to *padagata-lāghava* implies that there are indeed exceptions where *mātrāgata-lāghava* is also significant.

A relevant example is found in the *sūtra*:

In the *sūtra* “*ūkālo'j hrasvadīrghaplutah*” (*Aṣṭādhyāyī* 1.2.27), Pāṇini classifies vowels (*ac*) into three categories—*hrasva* (short), *dīrgha* (long), and *pluta* (prolated)—based on the duration

of their utterance in terms of *mātrā* (mora). The distinction is made through a comparative reference to the vowel ‘*u*’ in three temporal gradations: *u* (1 *mātrā*), *ū* (2 *mātrās*), and *ū3*<sup>6</sup> (3 *mātrās*, i.e., *pluta*).

What is particularly noteworthy in this *sūtra* is Pāṇini’s use of the term ‘*ūkāla*’, which succinctly encapsulates this gradation. While one might expect Pāṇini to explicitly mention all three forms—*u*, *ū*, and *ū3*—doing so would have extended the *sūtra*’s length significantly, resulting in a cumulative span of six *mātrās* (1 + 2 + 3). However, Pāṇini deliberately chooses ‘*ū*’ (of 2 *mātrās*) by the *samāsa* rule to imply the full gradation—from short to prolated—thereby achieving *mātrāgata-lāghava-vyavasthā*, or economy of expression in terms of syllabic time.

Thus, instead of stating: “*u-ū-ū3-kālah*” or enumerating all three explicitly, which would violate the *sūtra*-style conciseness, Pāṇini employs ‘*ūkāla*’—a compact form representing the full spectrum by implication. This method not only maintains the semantic clarity required for classification but also upholds the grammatical ideal of *lāghava* (brevity), especially in the dimension of *mātrā-lāghava*, i.e., minimizing phonetic and temporal length.

Through this, Pāṇini exemplifies how grammatical economy is not merely a syntactic or lexical concern but is deeply rooted in phonological efficiency as well—an elegant characteristic of the *Aṣṭādhyāyī*’s overall architecture.

Application in another *sūtra*:

- “*aci śnudhātubruvāṁ yvor iyañuvañau*” (*Aṣṭādhyāyī*, 6.4.77)

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<sup>6</sup> *ū3* denotes the *plutasvara* (prolated).

In the *Nyāsa* gloss on the term *yvoh*, it is noted that it comprises 3.5 *mātrās*. Had Pāṇini employed the shorter *pratyāhāra iñah* (referring only to *i* and *u*), the effect could have been achieved with just 3 *mātrās*. Yet he retained *yvoh*. Why?

Because *iñ* is a technical term dependent on the *ñ*-marker in the *lāñ-sūtra*, and its use outside such contexts may compromise technical accuracy. However, as seen in “*añuditsavarṇasya ca apratyayah*” (*Aṣṭādhyāyī*, 1.1.69), the *pratyāhāra añ* is accepted without the *ñ*-marker. This demonstrates that Pāṇini was not dogmatically bound to technical markers and, where necessary, allowed deviations for the sake of precision and clarity. Hence, *mātrāgata-lāghava* was indeed a valid consideration.

### A Pertinent Question:

Given this, a question arises for those who invoke Nāgeśa’s *paribhāṣā* (“*pariyāyaśabdānām lāghavagauravacarcā nādriyate*”) as a blanket defense:

If this principle is accepted, should not equal weight be given to another *paribhāṣā* by Nāgeśa himself—namely, *ardhamātrālāghavena putrotsavam manyante vaiyākaranāḥ?* (*Paribhāṣenduśekhara*, No. 133)

The answer becomes clear when one acknowledges that *kriyā* and *bhāva* are not interchangeable. Their distinct semantic and grammatical usages in the *Aṣṭādhyāyī*—reflected in different sūtras and different contexts—underscore their non-synonymity.

If the two were indeed synonymous, Pāṇini, ever attentive to brevity, would have preferred the shorter term *bhāve* over *kriyāyām*, especially given the difference in *mātrā* count (7.5 vs. 5). That he

chose otherwise demonstrates deliberate intent and nuanced discrimination.

Thus, the assertion that *kriyā* ≠ *bhāva* is not only semantically valid but also textually substantiated by the grammatical and structural choices within the *Aṣṭādhyāyī* itself.

### **Different Meanings of ‘*kriyā*’ and ‘*bhāva*’:**

#### **The Meaning of the Term ‘*Kriyā*’ (Action):**

The term ‘*kriyā*’ refers to that which unfolds sequentially through the emergence of its constituent parts. It is an activity marked by temporal order and progression. This sequential nature is highlighted in the Bhartrhari’s *Vākyapadīya*:

“*Yāvat siddham asiddham vā sādhyatvenābhidhīyate/ Āśrita-krama-rūpatvāt sā kriyetyabhidhīyate//*”  
(*Bhartṛhari*, 3.14.22)

“That which is either accomplished (*siddha*) or unaccomplished (*asiddha*), and is denoted as something to be effected (*sādhya*), is termed *kriyā* due to its dependence on sequence.”

Here, *siddha* denotes that which has been completed or realized, while *asiddha* refers to that which remains incomplete or in progress. The defining characteristic of *kriyā* is its reliance on an ordered sequence—an arrangement wherein parts unfold progressively, such as *adhiśrayaṇa* (superimposition) followed by *adhahśrayaṇa* (substructure).

The term *kriyā* is both *yoga-rūḍha* (etymologically meaningful and conventionally accepted). Where no componential or sequential process is involved, the term is employed purely in its conventional (*rūḍhi*) sense or through an imposed conceptual sequence. For

instance, in statements like “*Īśvara exists*” or “*Mountains exist*,” the concept of existence (*sattā*) does not unfold sequentially; hence, the term is understood conventionally.

Given this intrinsic sequentiality, ‘*kriyā*’ is considered a *yaugika* (etymologically derivable) expression. It can be further classified based on the state of completion:

- ***Siddha-kriyā*** (Accomplished Action): *Siddha* refers to a completed or realized action that currently exists and is opposed to destruction (*vidyamāna-dhvamṣa-pratiyogī*). For example, *apākṣīt* (“he cooked”) represents a completed act.
- ***Asiddha-kriyā*** (Unaccomplished Action): *Asiddha* implies a future or ongoing act—something distinct from the past and opposed to its prior absence (*prāgabhāva-pratiyogī*). For instance, *pacati* (“he cooks”) or *pakṣyati* (“he will cook”) are not yet completed.

Moreover, based on their semantic independence, *kriyā* is of two further types:

- ***Sādhya-kriyā*** (Self-sufficient Action): An action that requires no further element to complete its meaning. For instance, in *Rāmaḥ pacati* (“Rama cooks”), the sentence is semantically complete without invoking any additional expectation.
- ***Siddha-kriyā*** (Dependent Action): This form invokes an expectation for another element to complete its meaning. For example, the word *pākah* (“cooking”) leads to the question “what about it?”—prompting the need for a supplementary verb such as *bhavati*

(“takes place”). Here, *bhavati* acts as a syntactic and semantic complement.

### The Meaning of the Term ‘*bhāva*’ (Becoming, Being):

In contrast, ‘*bhāva*’ is a static concept, defined in traditional grammar as: “*Aparispandana-sādhana-sādhyo dhātvartho bhāvah*” [*Pradīpa* on *Mahābhāṣya*, (*Aṣṭādhyāyī* 3.1.87)]

“*Bhāva* is the verbal meaning (*dhātvartha*) that is to be achieved through a non-dynamic instrument (i.e., not involving movement).”

This contrasts with: “*Parispandana-sādhana-sādhyah tu kriyā*” (*Pradīpa* on *Mahābhāṣya*, P. 3.1.87) —“*Kriyā*, by contrast, is that which is achieved through a dynamic instrument involving motion.”

The term *bhāva* frequently denotes the *dhātvartha*—the meaning inherent in a verbal root (*dhātu*)—which often implies an incomplete or ongoing process. As the *R̥gveda-prātiśākhya* states: “*Tadākhyātām yena bhāvam sa dhātuh*” (XII.5) “That by which *bhāva* is expressed is called a *dhātu*.”

This captures the idea of a verb expressing an evolving process or state of being. Furthermore, the essential qualities that define an object and distinguish it from others—such as *gotva* (cow-ness) in the case of a cow—are also described as its *bhāva*<sup>7</sup>.

Completed actions are often expressed through *bhāva*-derivatives rather than direct verbal forms. As the *Kāśikā-vṛtti* explains (on *Aṣṭādhyāyī* 3.3.18):

“*Dhātvarthaś ca dhātunā eva ucyate. Yataḥ  
tasya siddhatā nāma dharmah, tatra ghañ-  
ādayaḥ                    pratyayāḥ                    vidhīyante.*”

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<sup>7</sup> <sup>7</sup> cf. “*tasya bhāvastvatalau*” (*Aṣṭādhyāyī*, 5. 1. 119)

Translation: “The meaning of the verbal root is expressed by the root itself. Since completedness (*siddhatā*) is a property of that meaning, affixes such as *ghañ* are prescribed.”

Thus, the *bhāva* form reflects a completed or established verbal idea, often manifesting in action nouns or nominal derivatives rather than finite verbs.

## Conclusion

The semantic distinction between *bhāva* and *kriyā* in Pāṇini’s *Aṣṭādhyāyī* is neither incidental nor negligible; it is both deliberate and theoretically significant. While post-Pāṇinian commentators such as the *Kāśikākāra* and *Bhaṭṭoji Dīkṣita* have, at times, interpreted the two terms interchangeably—as evidenced, for example, in their glosses on the *sūtra* “*yasya ca bhāvena bhāvalakṣaṇam*” (*Aṣṭādhyāyī*, 2.3.37)—a close textual reading of Patañjali’s *Mahābhāṣya* challenges this view and reveals a carefully maintained semantic differentiation.

Patañjali’s language in his exposition on *Aṣṭādhyāyī*, 2.3.37 is particularly telling. He affirms:

*"siddham tu bhāvapravṛttau yasya bhāvārambhavacanāt"*  
followed by the clarification:  
*"katham? yasya bhāvapravṛttau dvitīyo bhāva ārabhyate, tatra saptamī vaktavyā."* (Keilhorn, p. 459)

The consistent deployment of *bhāva*, rather than *kriyā*, in this context is not a matter of stylistic variation but of terminological precision. Patañjali’s intellectual rigor would not have chosen one term over another unless the distinction carried semantic and syntactic import. Had *kriyā* and *bhāva* been truly synonymous, such

exclusive use of *bhāva* would lack justification in a discourse that is otherwise marked by meticulous exactitude.

This study thus concludes that *bhāva* and *kriyā* represent two conceptually distinct categories within the Pāṇinian framework. *Kriyā* denotes a dynamic, sequentially realized activity—what is termed *parispandana-sādhya* [*Pradīpa* on *Mahābhāṣya*, (*Aṣṭādhyāyī* 3.1.87)] —while *bhāva* signifies a relatively static, intrinsic state—*apariswandana-sādhya* [*Pradīpa* on *Mahābhāṣya*, (*Aṣṭādhyāyī* 3.1.87)]. These are not merely lexical variants but ontologically and syntactically differentiated expressions within the architecture of Sanskrit grammar.

Recognizing this distinction has broader implications. It not only corrects interpretive tendencies that flatten nuanced grammatical terms but also aligns exegetical practice more closely with the internal logic of the *Aṣṭādhyāyī*. More importantly, it enhances our understanding of Pāṇini’s linguistic philosophy, which does not merely describe language but constructs a tightly woven epistemological system. Within this system, the choice between *bhāva* and *kriyā* is not arbitrary; it is integral to the grammatical rule’s structural and functional coherence.

In sum, *bhāva* and *kriyā* are not interchangeable. They embody distinct semantic functions in the sūtraic corpus, and understanding their divergence is essential for any rigorous engagement with the philosophy of Sanskrit grammar. The question posed by this study—*Synonymous or Distinct?*—must therefore be answered with firm conviction: *Distinct*.

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# Understanding the ancient and modern concept of 22

## Shrutis explained in Bharata's *Nātyaśāstra*

**Gauri Kulkarni**

### **Abstract:**

The 22 Śrutis explained by Bharata in the field of music for singers and instrumentalists are in use even today. In fact, they are being studied by today's scholars via various perspectives, in terms of aesthetics as well as physics. This paper is an attempt to understand the ancient as well as modern concept of the 22 Śrutis, that is, 22 microtones given by Bharata.

### **Introduction**

Ancient scholars like Bharata and Śārangadeva are held in great reverence. Today's scholars of musicology as well as exponents of classical music appreciate and respect the immense contribution of these scholars. Classical music of today is termed as “śāstriya *sāmgīta*”, which translates to music which has a theoretical base, so, it is clear that all learners and connoisseurs of music today acknowledge the work of academic scholars who have put in efforts to compose treatises since time immemorial. Since people respect academia, the next logical step is that they study the work of academic scholars and attempt to implement their writings in their work and perform their art in a form as authentic as possible. The objective of this research paper is to compare the thoughts expressed in ancient treatises about the concept of *śruti*s with the modern thought on the topic.

# 1. Historical Definitions of Śruti

## 1.1 *Nātyaśāstra* and *Abhinavabhāratī*

The *Nātyaśāstra*, particularly in its 28th chapter, discusses śrutis in relation to consonant and dissonant svaras. Bharata's treatise provides a systematic approach to the 22 śrutis, categorising them within the seven notes in the two principal scales: *Śadja Grāma* and *Madhyama Grāma*. Abhinavagupta expands on Bharata's ideas, defining śrutis as minimal pitch alterations by saying that basically the raising or lowering of sound to the minimum audible extent is a śruti.<sup>1</sup>

There are seven *svaras* in Bharata's octave. They are - *Śadja*, *Rṣabha*, *Gandhara*, *Madhyama*, *Pañcama*, *Dhaivata*, *Niṣāda*.<sup>2</sup> Along with these seven svaras, there are two additional svaras enumerated by Bharata, the *Antaragāndhāra* and the *Kākaliniṣāda*. The *Antaragāndhāra* occurs as the second śruti of *Gāndhāra* and the *Kākaliniṣāda* occurs at the second śruti of *Śadja*.

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<sup>1</sup> evam śrutyutkarṣāpakarṣācceti | mārdavaṇi tantryāḥ śithilīkaraṇaṇam  
viparītavamāyatatvaṇi kriyata ityāha | śruteḥ śabdasya śrotragrāhyasya  
utkarṣastīvratā apakarṣo mandatā, taddhetutvānmārdavāyate tu dve api tathokte  
| evam tīvramandatvahetubhyām mārdavāyatatvābhyaṇi yadantaraṇi yo  
viśeṣāvabodhaḥ pramāṇam niścāyakam yasyāḥ sā śrutiḥ | prāktanasya  
dhvanerbalakṣaṇyam yāvatā hīnenādhikena yā tīvramandatmanā rūpeṇa lakṣyate  
sā śrutiṛiti yāvat | yadyapi paramāṇuto'pyutkarṣāpakarṣo yā bhaved  
dhvanerviśeṣastathāpi nāśo gr̥hītum pāryate | Abhinavabhāratī on *Nātyaśāstra* 28.27-28.

<sup>2</sup> śadjaśca rṣabhaścaiva gāndhāro madhyamastathā /  
pañcama dhaivataścaiva saptamo'tha niṣādavān // *Nātyaśāstra*, 28.21

Examples from Bharata's system illustrate how śrutis determine the exact placement of svaras in a melodic framework. He provides detailed references to the intervals between notes, using śrutis as the standard measurement.

In the *Ṣaḍja Grāma*, the śrutis are as follows -

- 1) Sa - 4
- 2) Re - 3
- 3) Ga - 2
- 4) Ma - 4
- 5) Pa - 4
- 6) Dha - 3
- 7) Ni - 2

In *Madhyama Grāma*, the position of *Pañcama* needs to be lowered by one śruti.<sup>3</sup> Therefore, in the *Madhyama* scale, the śrutis would be as follows –

- 1) Sa - 4
- 2) Re - 3
- 3) Ga - 2
- 4) Ma - 4
- 5) Pa - 3
- 6) Dha - 4
- 7) Ni - 2

It is noteworthy that Bharata has established the *svara* on the last śruti pertaining to it.

We do not get the names of the 22 śrutis in the *Nāṭyaśāstra*. They have been provided by Abhinavagupta in his commentary, though.

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<sup>3</sup> *madhyamagrāme tu śrutiḥ apakṛṣṭah , pañcamah kāryah* | *Nāṭyaśāstra*, text between 28.26 and 28.27

Following is a table showing the division of śruti as described in the *Nātyasāstra* and the *Abhinavabhāratī*.

Śruti Number	Name of the śruti	Name of the Śuddha svara	Name of the Vikṛta svara
1.	Tīvrā		
2.	Kumudvatī		Kākalīniṣāda
3.	Mamḍā		
4.	Chandovatī	Ṣadja	
5.	Dayāvatī		
6.	Rañjanī		
7.	Ratikā	Rṣabha	
8.	Raudrī		
9.	Kroḍhā	Gāndhāra	
10.	Vajrikā		
11.	Prasāriṇī		Antaragāndhāra
12.	Prīti		
13.	Mārjanī	Madhyamā	

14.	Kṣiti		
15.	Raktā		
16.	Sandīpanī		
17.	Ālāpinī	Pañcama	
18.	Madantī		
19.	Rohiṇī		
20.	Ramyā	Dhaivata	
21.	Ugrā		
22.	Kṣobhiṇī	Niṣāda	

Abhinavagupta has explained the difference between a *śruti* and a *svara*. He states that a *svara* is the smooth and sweet sound constituted by resonance and produced by the sound arising from impact upon a *śrutisthāna*<sup>4</sup>. *svara* is the primary entity and it is, indeed, *svara* which is the musically significant interval within an octave. It is *svara*, he says, which has the inherent quality of charm and musical appeal, not the *śrutis*, which are dependent on the *svaras*. *Svaras*, according to him, had the quality of resonance, which *śruti* lacked. He explains that when, on a melody instrument, the proper place of a *śruti* is played (lit. hit), a non-echoic,

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<sup>4</sup> śrutesthānābhīghātāprabhavaśabdarabhāvito'nuraṇanātmā snigdhamadhurāḥ śabda eva svara iti vaksyāmah / Abhinavabhāratī on the text between 28.21 and 28.22.

melodious, sweet sound is produced which is to be understood as a *śruti*. Furthermore, when this non-echoic, melodious, sweet sound echoes, that echo is to be understood as a *Svara*. To put this in different words, it can be said that when a string on a Veena is plucked, the sound first produced is a *śruti*. When this *śruti* sound echoes, that echo sound is to be interpreted as a *Svara*.

## 1.2 Dattilam

Dattilamuni, in his Dattilam, relates *śrutis* to anatomical features of vocal production, correlating pitch elevation with their sources: chest, throat, and head resonances. He aligns with Bharata in affirming the 22-*śruti* system and emphasizes their role in determining melodic structure and tonal purity in performance.

*Śrutis*, he says, are specific and distinct sounds<sup>5</sup>. These are termed *śruti* because they can be heard, that is, heard as specific sounds, each distinct from the other. Their distinctness, Dattila implies, lies in their forming a distinct interval in terms of pitch; for the *śrutis*, he says, gradually rise in pitch. The *śrutis* were thus the number of intervals which it was believed the unaided (but trained)

ear could cognize within an octave. Hence, Dattila defines *śruti* as ‘audible’, that is, distinguishable through the ear. The number of *śrutis* pertaining to the *svaras* and their names given by Bharata and Abhinavagupta are agreeable to Dattila. Dattila lists *śruti* as the first topic and he says that *svaras* arise from the *śrutis*. Among the available *śrutis*, some attain the state of *svara*.

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<sup>5</sup> *nṛṇāmurasi mandrastu dvāvīmśatividho dhvaniḥ /*  
*sa eva kaṇṭhe madhyāḥ syāt tāraḥ śirasi gīyate //*  
*uttarottarataरastu vīṇāyāṁ tvadharottaraḥ /*  
*iti dhvanivīśeṣaste śravaṇācchruti samjñitāḥ // Dattilam , 1.8-9*

## 1.3 Brhaddeśī

Mataṅga in his *Brhaddeśī* explains the concept of *śruti*s by explaining the etymology of the term. He explains that since the root verb is *śru* and the suffix “*ktin*” has been added, that what is heard is *śruti*<sup>6</sup>. He explains that *śruti*s were different kinds of musical tones produced in singing, through the effect of different bodily humors. Different voices have different timbres and the distinctions are, indeed, easily cognizable. The *Vṛtti* on the *Brhaddeśī* thus quotes the view that *śruti*s were of four kinds - produced by *vāta*, *pitta*, *kapha* or a combination of these three 'humors'<sup>7</sup>. The *Vṛtti* quotes an ancient passage, ascribing it to Catura, which says that *vāta* produces a high-pitched shrill tone, *pitta* produces a deep resonant tone and *kapha* produces a delicate smooth and sweet tone. The tone produced from a combination of all the three humors has the tone-quality combining each. The same passage has been quoted by Kallīnātha in his commentary on *Saṅgītaratnākara*, 1.3, who credits a scholar *Kalā*<sup>8</sup>.

Thus, the *Brhaddeśī* states different, distinct sounds which are of different frequencies to be together termed as *śruti*. He quotes Kohala while stating that there are 22 *śruti*s.<sup>9</sup> He does not give a clear reason why there are only 22 *śruti*s, but makes it abundantly clear that there are only 22 of them, by saying that only people who have an enriched intellect and research ability would consider the

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<sup>6</sup>śru śravane cāsyā dhāto ktipratyayasamudbhavaḥ śrutiśabdah prasādhyo'yaṁ śabdajñaiḥ bhāvāśādhanaḥ || *Brhaddeśī*, 26-27.

<sup>7</sup> apare tu vātapittakaphasannipātabhedabhinnām caturvidhām śrutim pratipedire" (*Brhaddeśī* *Vṛtti* on 1.27).

<sup>8</sup> Mukund Lath, A Study of Dattilam, published by Impex India New Delhi, 1978, p. 204.

<sup>9</sup> dvāvīṁśatim kecidudāharanti śrutiḥ śrutiñānavicāradakṣāḥ | *Brhaddeśī*, text between 1.28 and 1.29.

number of *śrutis* to be 22<sup>10</sup>, hinting at the fact that anyone who considers 66 *śrutis* or any other number of *śrutis* would be “exhibiting their foolishness.”

Mataṅga presents his stand in standard philosophical terminology. He gives many alternate views expressed by different acaryas regarding the manner in which *Śruti*s become *svaras*. These views take into account different doctrines regarding the relation of cause and effect current in Indian philosophy. Mataṅga mentions five theories: *tādātmyavāda*, *vivartavāda*, *kāryatvavāda*, *pariṇāmavāda* and *abhivyāñjanavāda*.

Mataṅga's complete approval, however, was in favour of *abhivyāñjanavāda* which stated that *svaras* were manifested or revealed through the *śrutis* just as objects like a pitcher etc. placed in the dark are revealed by the light of a lamp. The light does not cause existence to objects in the dark but without light these objects are bound to remain unrecognized. So, from the point of view of perception and cognition, light 'causes' these objects by revealing them. Similarly, without *śrutis*, *svaras* cannot be revealed. He concludes the discussion by stating that the theory which propounds that *śrutis* manifest the *svaras* is, from all angles, is the most satisfactory one.

## 1.4 *Saṅgītaratnākara*

Śāraṅgadeva in his *Saṅgītaratnākara* says that in ancient singing the range was three octaves. Each of these octaves was thought to be produced from a different section of the human frame. The lower octave was said to reside in the chest, the middle octave in the throat

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<sup>10</sup> *tatra kecinmīmāṃsāsalitadhiyo dhīrā dvāvīmśatiśrutiyormanyante / Brhaddeśī*, text between 1.28 and 1.29.

and the higher octave in the head. He gives the same definition of śrutis as his predecessors. The reason why there are 22 śrutis is said to be that there are 22 oblique *nādīs* adjacent to the region of the heart and *ūrdhvānādī* which, being hollow from within, are filled with air. Sound is produced when the air hits it. Of these, the sound of the second *nādī* is higher in pitch than the sound produced from the first *nādī* and similarly the sound keeps getting higher in pitch in the consecutive *nādīs*. The sounds produced from these *nādīs* are of *mandra* (low pitch) and similarly, 22 sounds each are produced in *madhya* (medium pitch) and *tāra* (high pitch).

## 2. Modern Interpretation

Contemporary musicologists retain the 22-śruti system but incorporate mathematical analyses to refine its application in practice. The modern Hindustani system has adjusted the tuning of śrutis based on performance techniques of *rāga* requirements.

### 2.1 Pandit Vishnu Narayan Bhatkhande

In his treatise *Hindusthani Sangeet Paddhati*, Pandit Bhatkhande has defined śruti in the chapter titled “*Svara*”. He says that *nādas* are divided into 22 parts because of their higher quality of being worthy of being heard, these 22 parts are termed as śruti. He further says that the actual meaning of śruti is just sound. The actual meaning of śruti is *nāda*. The vibrations that are heard of the 12 *śuddha* and *vikṛta* svaras are together termed as śruti.

He says that there are 22 distinct sounds possible in one octave, all of which qualify as melodious notes that can be distinguished by the human ear, and these sounds are termed śruti.

Pandit Bhatkhande believes in the division of śrutis given by Bharata. On the other hand, since he was a modern practitioner of

music, he also tried to encompass the modern system of *śuddha* and *vikṛta* svaras.

In the modern era, there are 7 *śuddha* svaras and 5 *vikṛta* svaras. So, in total, there are 12 svaras used in compositions. The reason why there are 22 *śrutis* and only 12 *svaras* used primarily during a music concert is that it is difficult to perform all 22 *śrutis*. Hence, it was convenient to choose 12 *śrutis* from them and establish them as *svaras*. The *śuddha* svaras are *Ṣadja*, *Rṣabha*, *Gandhāra*, *Madhyama*, *Pañcama*, *Dhaivata* and *Niṣāda*. Of these, the *Ṣadja* and *Pañcama* svaras are immovable or *acala*, and the rest as movable or *cala*. The *svaras* *Rṣabha*, *Gandhāra*, *Dhaivata* and *Niṣāda* have their respective lower counterparts, namely, *Komala* *svaras*. The *Madhyama svara* has its own higher counterpart, the *Tīvra Madhyama*. Hence, the twelve *svaras* are as follows<sup>11</sup> -

- 1) *Ṣadja (acala)*
- 2) *Komala Rṣabha*
- 3) *Śuddha Rṣabha*
- 4) *Komala Gandhāra*
- 5) *Śuddha Gandhāra*
- 6) *Śuddha Madhyama*
- 7) *Tīvra Madhyama*
- 8) *Pañcama (acala)*
- 9) *Komala Dhaivata*
- 10) *Śuddha Dhaivata*
- 11) *Komala Niṣāda*
- 12) *Śuddha Niṣāda*

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<sup>11</sup> Pandit Omkarnath Thakur, *Sangitanjali* - Volume 1, self-published, 1956, p. 15.

Pandit Bhatkhande tried to fit these modern *svaras* into the modern interpretation of the system of Bharata. This means that, the modern scale of *śrutis* and *svaras* is as in the Table below.

It is not known to us today why he set up a difference while determining the separation between certain pairs of *śuddha* and *vikṛt* *svaras*, where on one side we have *Gandhāra* and *Komala Gandhāra*, *Niṣāda* and *Komala Niṣāda* and *Madhyama* and *Tīvra Madhyama*, with a difference of just one *śruti* between them and on the other hand we have *Rṣabha* and *Komala Rṣabha* and *Dhaivata* and *Komala Dhaivata*, with a difference of two *śrutis* between them.

Pandit Bhatkhande states that a *śruti* is such that it is touched lightly while singing, whereas a *svara* is such that it is carefully and slowly established (as compared to a *śruti*). When a *śruti* is being sung, if one spends too much time singing the same *śruti*, it will attain the form of a *svara*.

Number of <i>Śruti</i>	Name of the <i>Śruti</i>	<i>Śuddha Svaras</i>	<i>Vikṛt Svara</i>
1	<i>Tīvrā</i>	<i>Ṣadja</i>	
2	<i>Kumudvatī</i>		
3	<i>Mamdā</i>		<i>Komala Rṣabha</i>
4	<i>Chandovatī</i>		

5	<i>Dayāvatī</i>	<i>Rṣabha</i>	
6	<i>Rañjanī</i>		
7	<i>Ratikā</i>		<i>Komala</i> <i>Gāndhāra</i>
8	<i>Raudrī</i>	<i>Gāndhāra</i>	
9	<i>Kroḍhā</i>		
10	<i>Vajrikā</i>	<i>Madhyamā</i>	
11	<i>Prasāriṇī</i>		<i>Tīvra</i> <i>Madhyamā</i>
12	<i>Prīti</i>		
13	<i>Mārjanī</i>	<i>Pañcama</i>	
14	<i>Kṣiti</i>		
15	<i>Raktā</i>		
16	<i>Sandīpanī</i>		<i>Komala</i> <i>Dhaivata</i>
17	<i>Ālāpini</i>		
18	<i>Madanī</i>	<i>Dhaivata</i>	

19	<i>Rohinī</i>		
20	<i>Ramyā</i>		
21	<i>Ugrā</i>		<i>Komala</i> <i>Niṣāda</i>
22	<i>Kṣobhinī</i>	<i>Niṣāda</i>	

## 2.2 Dr. Vidyadhar Oke

There is one more school of thought about śrutis in the modern times, that of Dr. Vidyadhar Oke. This second type takes into consideration the practical demonstration, the application of śrutis in a concert of music.

When śrutis are to be understood taking this system into consideration, each śuddha svara, has two śrutis of its own, and each vikṛta svara too, has two śrutis of its own.

Therefore, according to the second school of thought, the śrutis would be as follows –

Śruti Number	Name of the Śruti	Name of the Svara
1.	<i>Tīvrā</i>	<i>Śadja (acala)</i>
2.	<i>Kumudvatī</i>	<i>Komala Rṣabha</i>
3.	<i>Maṇḍā</i>	
4.	<i>Chandovatī</i>	<i>Śuddha Rṣabha</i>
5.	<i>Dayāvatī</i>	
6.	<i>Rañjanī</i>	<i>Komala Gandhāra</i>
7.	<i>Ratikā</i>	
8.	<i>Raudrī</i>	<i>Śuddha Gandhāra</i>
9.	<i>Kroḍhā</i>	
10.	<i>Vajrikā</i>	<i>Śuddha Madhyama</i>
11.	<i>Prasāriṇī</i>	
12.	<i>Prīti</i>	<i>Tīvra Madhyama</i>
13.	<i>Mārjanī</i>	
14.	<i>Kṣiti</i>	<i>Pañcama (acala)</i>
15.	<i>Raktā</i>	<i>Komala Dhaivata</i>

16.	<i>Sandīpanī</i>	
17.	<i>Ālāpinī</i>	<i>Śuddha Dhaivata</i>
18.	<i>Madantī</i>	
19.	<i>Rohiṇī</i>	<i>Komala Niṣāda</i>
20.	<i>Ramyā</i>	
21.	<i>Ugrā</i>	<i>Śuddha Niṣāda</i>
22.	<i>Kṣobhiṇī</i>	

Natural creation of *Ṣadja* (*śruti* No.1): When a single string is plucked, it makes the 1st sound which we call the "*Ṣadja*" or "Fundamental Tone", or 1st Harmonic. For the ease of understanding, let us consider the frequency of the *Ṣadja* as 100 hz.

When the string is plucked, the 1st sound of 100 hz is produced. Our brain is now set after hearing this sound, to an Octave or *Saptaka* extending from 100 hz (*Ṣadja*) to 200 hz (*Tāra* or Upper *Ṣadja*). Thus, the string vibrates in 1 full part or the whole length of the string, to begin with, to produce the *Ṣadja* or Fundamental Tone; or the 1st Harmonic with a frequency of say, 100 hz.

(Immediately thereafter, as the energy put in the string for plucking reduces, the string starts vibrating in 2 parts. This produces a sound of 200 hz called the 2nd Harmonic. This is *Tāra Ṣadja*. As *Tāra Ṣadja* is exactly double of *Ṣadja*, this is not counted as a 'new' *śruti*.)

Natural creation of *Pañcama* (śruti No. 2) : Immediately thereafter, as the energy put in the string for plucking reduces further, the string starts vibrating in 3 parts. This produces a sound of 300 hz called the 3rd Harmonic. This is however perceived by our brain as 150 hz (our brain has the spectrum of perception of 100 hz to 200 hz) or *Pañcama* (the 5th).

Immediately thereafter, as the energy put in the string for plucking reduces further, the string starts vibrating in 4 parts. This produces a sound of 400 hz called the 4th Harmonic. This is perceived by our brain as of 200 hz (our brain has the spectrum of perception of 100 hz to 200 hz) or *Tāra Śadja* again. As *Tāra Śadja* is exactly double of *Śadja*, this is not counted as a 'new' śruti.

Natural creation of *Gandhāra* (śruti No. 3) : Immediately thereafter, as the energy put in the string for plucking reduces further, the string starts vibrating in 5 parts. This produces a sound of 500 hz called the 5th Harmonic. This is perceived by our brain as 250 hz or 125 hz (our brain has the spectrum of perception of 100 hz to 200 hz) or *Gandhāra*.

After this stage, the energy put in the string for plucking reduces so much that further harmonics (6th, 7th, 8th and so on) are barely heard.

This process shows that the 1st three (different) Natural sounds created are always *Śadja*, *Gandhāra* and *Pañcama* at a ratio of 100 : 125 : 150. Therefore these three are the fundamental notes or 1st three Natural śrutis in Indian Classical Music.

Dr. Oke's work is based on the simple logic that the octave is Sa-Re-Ga-Ma repeated twice, since Pa-Dha-Ni-Sa is just Sa-Re-Ga-Ma starting from Pa.

The Sa and Ma *svaras* are well defined by nature at 100 and 133.33 respectively. The relation between Sa and Pa is 100:150 since Pa occurs at the exact middle of the octave. The *svaras* Re and Ga are different “in Nature” and “as arrived mathematically”, so for these *svaras* he has cited the work of Pythagoras, stating that if Sa is at 100, Re occurs at 112.5 and Ga at 125. So, now since he had the values of Sa-Re-Ga-Ma, he could apply the same for Pa-Dha-Ni-Sa and also tally the upper Sa to have a proportion of 150:100 with Pa (since Pa is at the exact middle of both the *Śadjas*). Here, it can be observed from the values of the frequencies that, the percentage difference between the notes is as follows -

Sa (100) — 12.5% — Re (112.5) — 11.11% — Ga (125) — 6.66% — Ma (133.33)

Further calculation of the *svaras* led to the unearthing of all the *śrutis*.

Considering the lower *śruti* to be 100, the further working would be as follows -

From S = 100,

100 → 5.35% = *Komala Rṣabha* (Lower) = 105.35

100 → 6.66% = *Komala Rṣabha* (Higher) = 106.66

100 → 11.11% = *Śuddha Rṣabha* (Lower) = 111.11

100 → 12.50% = *Śuddha Rṣabha* (Higher) = 112.50

From *Śuddha Rṣabha* (Higher) = 112.50

112.50 → 5.35% = *Komala Gandhāra* (Lower) = 118.51

112.50 → 6.66% = *Komala Gandhāra* (Higher) = 120.00

112.50 → 11.11% = *Śuddha Gandhāra* (Lower) = 125.00

112.50 → 12.50% = *Śuddha Gandhāra* (Higher) = 126.56

From *Śuddha Gandhāra* (Higher) = 126.56

126.56 → 5.35% = *Śuddha Madhyama* (Lower) = 133.33

126.56 → 6.66% = *Śuddha Madhyama* (Higher) = 135.00

126.56 → 11.11% = *Tīvra Madhyama* (Lower) = 140.62

126.56 → 12.50% = *Tīvra Madhyama* (Higher) = 142.38

From *Śuddha Pañcama* (*acala*) = 150

150 → 5.35% = *Komala Dhaivata* (Lower) = 158.02

150 → 6.66% = *Komala Dhaivata* (Higher) = 160.00

150 → 11.11% = *Śuddha Dhaivata* (Lower) = 166.66

150 → 12.50% = *Śuddha Dhaivata* (Higher) = 168.75

From *Śuddha Dhaivata* (Higher) = 168.75

168.75 → 5.35% = *Komala Niṣāda* (Lower) = 177.77

168.75 → 6.66% = *Komala Niṣāda* (Higher) = 180

168.75 → 11.11% = *Śuddha Niṣāda* (Lower) = 187.50

168.75 → 12.50% = *Śuddha Niṣāda* (Higher) = 189.84

Thus, the *śruti*s occur not in a haphazard manner, but in the form of increasing ratios one after the other. The four ratios keep repeating in a cyclical fashion, providing the frequency of the next occurring *śruti*.

This work of Dr. Vidyadhar Oke has received mixed responses from the music community. While eminent performing artists have supported this theory, it has also been criticized by certain musicologists.

## Observations and Analysis -

### Similarities

- 1) Both ancient and modern scholars agree that *śrutis* are microtones and svaras are some select *śrutis* out of all *śrutis* that exist.
- 2) The scholars of the ancient as well as modern era consider the existence of 7 *svaras* and 22 *śrutis*. The number of *śrutis* is found to be constant.
- 3) The division of these 22 is found to be 4-3-2-4-4-3-2 by ancient scholars as well as some scholars of the modern era, as one of the two schools of thought prevalent in the modern era agree with this ancient theory.

### Differences

- 1) There are 2 *vikṛta* svaras found in the *Nātyaśāstra*, the *Antaragāndhāra* and the *Kakliniśāda*, whereas there are 5 *vikṛta* svaras in the modern era, namely *Komala Rṣabha*, *Komala Gandhāra*, *Tīvra Madhyama*, *Komala Dhaivata* and *Komala Niṣāda*.
- 2) Ancient scholars establish the svaras on the last *śruti* pertaining to them, whereas modern scholars establish the svaras on the first *śruti* pertaining to them. Thus, it can be seen that the ancient idea of svaras being established on the 4-7-9-13-17-20-22 *śrutis* have changed to 1-5-8-10-14-18-21. This has resulted in the changing of the positions of the svaras in a saptaka (an octave). Thus, what was the *Śuddha Gandhāra* and *Śuddha Niṣāda* in ancient times is somewhat the *Komala Gandhāra* and *Komala Niṣāda* of the modern era,

resulting in the ancient octave being interpreted as the Kafi *thāṭa* (a category of *rāgas* which constitute the *Komala Gandhāra* and *Komala Niṣāda* instead of their *śuddha* counterparts). Today, the saptaka used includes all *śuddha svaras*, interpreted as the Bilāwal *thāṭa* (a category of *rāgas* using all seven *śuddha svaras* and *no vikṛta svaras*).<sup>12</sup> It needs to be noted here that the octave explained by Bharata is *śuddha* according to the then prevalent interpretation of *śuddha svaras*, the fact that the *Gandhāra* and *Niṣāda* are comparatively lower in frequency is a comparison of his octave with the octave in use today.

- 3) In ancient times, *śruti* was supposed to give rise to a *svara*. When a string is plucked, the first sound created was supposed to be *śruti*, and its echoic sound that was established later was supposed to be *svara*. This echoic quality is what differentiated *śruti* and *svara* back then. Here, it can be observed that the time that a *śruti* lasts is said to be extremely less, so it is safe to assume that regarding the practical aspect, only skilled people could understand the difference between *śruti* and *svara*. In the modern era, this has changed and *śrutis* have become a superset from which select *śrutis* attain the status of a *svara*. Thus, *svaras* are a subset of *śrutis*. They are practically the same and it is the quality of being able to easily recognize them apart when they are sung/played in a consecutive manner that sets them apart. It has also been said that *śrutis* do not have a lasting quality. If they attain that quality, they attain the status of a *svara*. This second characteristic, which is theoretical in nature (as it is difficult

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<sup>12</sup> Prof. Mrs. Mohana Mardikar, *Sangitashastra : Parichay*, Vijay Prakashan, Nagpur, 2010, p. 22-23

to actually perceive it) matches with the ancient thought regarding *śruti* and *svara*, whereas the first characteristic, which is practical in nature, is seen to be a bit different.

## Conclusion

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In summation, the study of evolution of the concept of *śrutis* from ancient to modern times reveals a fascinating shift from intuitive perception to analytical precision. Ancient theorists such as Bharata, Abhinavagupta, and Mataṅga presented *śrutis* as the smallest audible pitch differences, foundational to melodic articulation, deeply intertwined with the natural human experience of sound. These microtones were understood in aesthetic, physiological, and metaphysical terms, such as through the influence of bodily humors or the internal *nādīs*, as proposed by Śāraṅgadeva. In contrast, modern scholars like Pandit Vishnu Narayan Bhatkhande and Dr. Vidyadhar Oke have redefined *śrutis* through the lens of mathematics and physics. Bhatkhande acknowledged the legacy of the 22-*śruti* system while aligning it with the practical framework of 12 *svaras* used in contemporary performance, reflecting a pragmatic adaptation. Dr. Oke went further constructing a precise frequency-based system. He proposed that the *śrutis* follow a cyclic pattern. Despite differing methodologies, both schools affirm the indispensability of *śrutis* in shaping a concert. The ancient approach emphasized the philosophical depth and experiential knowledge, while the modern view offers structural clarity and scientific validation. Together, they underscore the continuity and adaptability of Indian musicology, where ancient wisdom and contemporary inquiry converge to enrich the enduring tradition of *śruti*-based music.

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