

Is the *Aṣṭādhyāyī* of Pāṇini philosophy?

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1 Summary

The *Aṣṭādhyāyī* was an ancient linguistic description of Sanskrit composed by Pāṇini, a grammarian living in the intellectual hotbed of Gandhāra [Northwestern India] around the 5th century BCE.¹ It is regarded as the *magnum opus* of a great and long tradition of scientific analysis of language in ancient India, of which many of the previous works are lost. It led to uncountable commentaries, notably Patañjali's *Mahābhāṣya*.

The *Aṣṭādhyāyī* itself is a precise set of algorithmic rules, systematised in a manner not unlike modern grammar formalisms (e.g. phrase-structure rules). Like modern generative grammars, built on theory organised by Noam Chomsky, the goal of the *Aṣṭādhyāyī* is to be able to generate all possible grammatical and none of the ungrammatical sentences in Sanskrit. To that end, it builds upon three foundational works: the *Śivasūtras* (the symbol system describing Sanskrit phonology), the *Dhātupāṭha* (an index of verb roots), and the *Gaṇapāṭha* (an addendum of special cases for the rules).² These supply the 'arguments' to the functions encoded in the *Aṣṭādhyāyī*.

The rules themselves are made extremely simple and concise, while aiming to maintain unambiguity (although issues do arise in the description that are tackled by the commentaries that followed it). Some of these are simple contextual substitution rules, others involve the coalescing of two adjacent words into one or the doubling of one word, and still others the compounding of words. In itself, the *Aṣṭādhyāyī* is seemingly more like a computer program rather than a philosophical work; its explicit text does not make any claims about the cognitive basis of language, the manner of its interpretation, or any of the other questions that we conceive as 'philosophy of language'.

The key is the context that the work was created in: the goal of Brahmanical Hinduism being to perform rituals systematically, it made sense to analyse those operations scientifically so that they could be carried out perfectly—only an unblemished ritual completes its intended moral purpose. As for language's place in the scheme and why this work is philosophy, for the next assignment I will consider the oral traditions that preserve

1. Pāṇini, *Aṣṭādhyāyī* (c. 5th century BCE), <https://ashtadhyayi.com/>.

2. Paul Kiparsky, "Pāṇinian Linguistics," in *The Encyclopedia of Language and Linguistics*, 1st ed., ed. Ron Asher (1993), 1, <https://web.stanford.edu/~kiparsky/Papers/encycl.pdf>.

the foundational texts of Hinduism and the commentaries that follow.

2 How is it Philosophy?

The most remarkable aspect of the *Aṣṭādhyāyī* is its foresight—such a robust linguistic description was not articulated of any language until the formalisation of modern linguistics by Noam Chomsky in the 20th century. Pāṇini’s concise and precise rules also comprised perhaps the most complex algorithm developed before the advent of computation machines. The question then arises: why did Pāṇini (and Sanskrit grammarians in general) bother describing Sanskrit with such accuracy? And why did a grammatical tradition take hold with such vigour in pre-modern India, with no known parallels until much later?

This is where the thought that led to *Aṣṭādhyāyī* becomes important. The very existence of such a text is the articulation of a Hindu philosophical system that sought to achieve the goal of spiritual enlightenment (*mokṣa*) through not only direct study of the holy texts (primarily the four orally-transmitted *Vedas*) but also an empirical approach that can obtain a holistic knowledge of the texts, the aptly-named *Vedāṅgas* ‘limbs of the *Vedas*’. The central goal of the Brahmanical tradition in Hinduism is upholding the sanctity of the various rituals instructed by the *Vedas*. If you want to perform rituals the proper way, down to the microscopic details of how you recite the appropriate chants, then you need to understand the principles behind the rituals at the finest level of detail.

From the obvious branch of *kalpa*, which sought to analyse and lay down strict rules for the performance of rituals in the *kalpasūtras*, the more obscure *Vedāṅgas* arise to fulfill instrumental needs: to ensure the proper chanting of the *Vedas* in these rituals, the Brahmins needed to study phonetics (*śikṣā*) and prosody (*cḥandas*); and further,³ to interpret the *Vedas* one needs an understanding of grammar (*vyākaraṇa*), a role that the *Aṣṭādhyāyī* inched towards fulfilling.⁴ And then there is the religious halo around the

3. The other two *Vedāṅgas* are etymology (*nirukta*) to interpret obsolete words in the texts and astrology (*jyotiṣa*) to ensure proper timing of rituals and make sense of events.

4. Anand Mishra, “Modelling Aṣṭādhyāyī: An Approach Based on the Methodology of Ancillary Disciplines (Vedāṅga),” in *Sanskrit Computational Linguistics*, ed. Girish Nath Jha (Springer, 2010), 239–258.

Sanskrit language itself, the ‘language of the Gods’, which persists to the present; once a language is afforded religious importance it is tautologically necessary to study it deeply.⁵

Therein lies my evidence for the claim that the *Aṣṭādhyāyī* is a philosophical work. Philosophy is any attempt to make a framework of thinking towards the goal of making sense of the world—this is how we end up with ‘philosophy of science’ (a framework for empirical study) or ‘philosophy of language’ (a framework for explaining the use and inherent properties of language). The *Aṣṭādhyāyī* is built on the assumptions that the components of language are analysable and the rules of language, recorded in the document, can be uncovered through empirical analysis. This goes against the counter-philosophy made by certain grammarians of Sanskrit built on the principle of permanance (*nityatva*) of language, wherein every word is independently existent and does not participate in form changes or any other algorithmically-describable process—an opposing framework for making sense of language.⁶ Since the *Aṣṭādhyāyī* is built within the assumptions of the Pāṇinian framework (i.e. language is empirically describable, an algorithm can account for all proper instances of languages, and the systematic study of language is important for spiritual knowledge), and in fact tries to prove one of those assumptions, that language is algorithmic, it can be fairly called a philosophical work.

3 Objection

The main objection to the characterisation of the *Aṣṭādhyāyī* as a philosophical work is that it is a set of rules with no explicit philosophical aims. The *Aṣṭādhyāyī* is a grammar, so it can be called linguistic description or an algorithm, but not philosophy.

The underlying philosophy behind the creation of a work does not actually mean it is a work of philosophy. The argument is that to include this work would require too expansive of a definition of philosophy, since we would have to consider the unwritten thoughts behind the text.

5. Sheldon Pollock, “The death of Sanskrit,” *Comparative Studies in Society and History* 43, no. 2 (2001): 392–426.

6. Madhav Deshpande, “Language and Testimony in Classical Indian Philosophy,” in *The Stanford Encyclopedia of Philosophy*, Summer 2020, ed. Edward N. Zalta (Metaphysics Research Lab, Stanford University, 2020), <https://plato.stanford.edu/archives/sum2020/entries/language-india/>.

To make sense of this objection, first we need to delineate the boundary between philosophy and linguistics. Somewhere between the two lies philosophy of language, which is concerned with the nature of language, e.g. the meaning of meaning, the compositional structure of language, and the thought underlying communication. A major distinction is that philosophy of language is more about the concept of language rather than a particular language—the question “what is the nature of meaning?” is equally valid for every language, and is more generally a question about the human ability to use language.

Does the *Aṣṭādhyāyī* really address any fundamental questions about language in general (and not just specifically Sanskrit)? I will respond to this in the next section, but at the explicit level it does not appear that the *Aṣṭādhyāyī* lays down a framework for making sense of language. There is only a mechanism, a set of rules—the work is as much a philosophical work as the processor of the computer that I type on is. There is philosophy that goes behind the design of a processor; a philosopher devised a system of logic that underlies the architecture of the processor and how it encodes and performs operations on values, but the processor itself is an *application*, at several levels, of that particular philosophical theory of logic. In the same way, we cannot deny that there was a Pāṇinian philosophy of language that he based his study of Sanskrit on, but whether his grammar was a philosophical work in itself is not obviously true.

Thus, the objection to the classification of the *Aṣṭādhyāyī* as a philosophical work rather than a purely linguistic one does have strong evidence for it. However, I believe that we cannot simply discount Pāṇinian philosophy’s implicit rule in the formulation of this text.

4 Objection to the objection

Let us examine whether an algorithmic set of rules really cannot be a philosophical framework. First of all, the rules in the grammar are descriptive—they are based on a living variety of Classical Sanskrit that Pāṇini spoke, as well as with reference to a specific dialect of Sanskrit that was privileged enough for liturgical use in the Vedas. But

Pāṇini was not a modern-day descriptive linguist; his intention was to ‘freeze’ a particular type of language as the standard form when he laid down the rules in the *Aṣṭādhyāyī*, and indeed all future work in Classical Sanskrit used this specific standard as a reference point for describing other languages (such as Hemcandra’s study of the Prakrit dialects). Does having an explicit frame of thought in producing such a mechanical description let it count as philosophy?

We need to bear in mind that as a living language, Sanskrit had dialects and not every dialect carried equal prestige. By the time of Pāṇini, Sanskrit was probably a language for the elite educated class (not unlike Latin in Europe much later) that had coalesced around a mixture of the most prestigious dialects. Since we have access to a large corpus of Sanskrit texts, we *know* without a doubt that there was variation even in this late stage of Sanskrit that Pāṇini did not record. He favoured using vocabulary from his own Northwestern dialect (even when it was clearly non-Vedic, e.g. *maireya* ‘wine’ instead of the proper Vedic word *madirā* in verse 6.2.70⁷), and tended to not include e.g. Eastern dialect features like the genitive form *-ai*. Furthermore, let us note the strong tie between the Vedic Sanskrit dialects and the Brahmanical tradition of Hinduism. There were non-Brahmanical Indo-Aryans who did not accept the orthodoxy of the Vedas; these were the Vrātyas, geographically (especially in the East) and culturally at the fringes of Indo-Aryan civilisation.⁸ Pāṇini described Brahmanical Aryan, not Vrātya Aryan, speech. There was a conscious decision to promote one type of speech associated with one type of philosophy.

A further point to consider is that the predecessor texts to Pāṇini’s work are largely lost. It is likely that the philosophy that Pāṇini operated in and utilised was already developed to a degree when he recorded his grammar. But since we do not have access to the texts preceding him, we need to use the *Aṣṭādhyāyī* to define the philosophy of language of that tradition of Sanskrit grammarians—indeed, later commentaries on Pāṇini’s work such as those by Patañjali and B^hartṛhari are without a doubt philosophical

7. Michael Witzel, “Tracing Vedic Dialects,” 1989, p. 14, <http://www.people.fas.harvard.edu/~witzel/dialects.pdf>.

8. Suniti Kumar Chatterji, *The Origin and Development of the Bengali Language* (Calcutta, 1926), p. 48, https://archive.org/details/OriginDevelopmentOfBengali/CHATTERJI-Origin-Development-of-Bengali_Vol-1.

works, when they consider questions such as the nature of a ‘word’ and the basis of meaning.

But still, was Pāṇini primarily a philosopher or a linguist? This is a fair question, and it is hard to say whether the distinction makes sense in this context since both were forms of knowledge organisation that were important for carrying out the duties of religion in his time. The *Aṣṭādhyāyī* was certainly not a philosophical work, **if** we define philosophy as the explicit development of a framework of thought towards making sense of some phenomenon. But Pāṇini transformed the way linguists think about language through this work, so it hardly makes sense to discount the foundational contribution of his work in the Sanskrit philosophical tradition of language.

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